SASKATCHEWAN SEED GUIDE 2021

Sask Seed

Saskatchewan Seed Growers' Association

Saskatchewan Seed Grower Listings | P. 127

50 YEARS OF ACHIEVEMENT AT THE CROP DEVELOPMENT CENTRE | P. 14

RENEWING THE CANADIAN SEED GROWERS ASSOCIATION | P. 24

CANADA'S SEED REGULATIONS GO UNDER THE MICROSCOPE | P. 28

THE WESTERN PRODUCER
JANUARY 2021

Behind the seed that hits the soil are

25 Years of Prairie Roots.

Twenty-five years ago, CANTERRA SEEDS was founded by nine seed growers with one vision:

To be the company that best understands and meets the seed needs of farmers.

Today, our diverse portfolio of seed has been built on that vision, with local investment in plant breeding backed by access to a global network of germplasm and traits.

- > CANOLA
- > CORN PRIDE SEEDS
- > WHEAT, OATS & BARLEY
- > PEAS & BEANS
- > SOYBEANS PRIDE SEEDS
- > SPECIAL CROPS

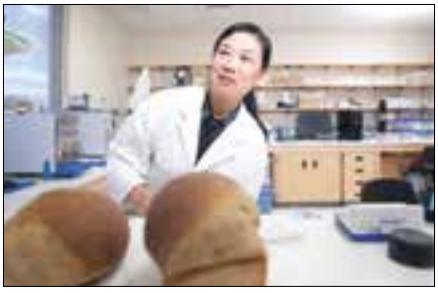
CANTERRA SEEDS

Seed the Difference.™

Visit CANTERRA.COM to find a retailer or seed grower near you, or call 866-744-4321 to speak with a CANTERRA SEEDS sales representative today.

Proudly **A Farmer-Owned Company**

CONTENTS



ALSO IN THIS ISSUE:

- Canola Performance Trials
- Agriculture Canada licensing rights
- CFIA variety registrations
- PGDC recommendations
- Saskatchewan Seed Growers Association listings

GROWER LISTINGS

PUBLISHER: Rod Delahey, PAg
EXECUTIVE EDITOR: Mike Raine, PAg (Hon)
EDITOR: Brian Cross
CREATIVE DIRECTOR: Michelle Houlden
DIRECTOR OF SALES OPERATIONS: Shauna Brand
PRODUCTION DIRECTOR: Robert Magnell
VP MARKETING: Carla Vipond
COVER PHOTO: Curtis Pozniak is Director of the Crop Development Centre in Saskatoon, which celebrates a half century of crop innovation this year. (DAVID STOBBE PHOTO / COURTESY OF U OF S)

EDITORIAL: 306-665-3544
Editorial fax: 306-934-2401
newsroom@producer.com

ADVERTISING: 1-800-667-7776
Advertising fax: 306-653-8750
advertising@producer.com
NATIONAL SALES: Lisa Graham / Denise Bott
113 - 355 Elmira Road. N.
Guelph, Ontario N1K 1S5
Tel: 519-836-4072 Fax: 519-836-2499

SUBSCRIPTIONS: 1-800-667-6929
Subscription fax: 306-244-9445
subscriptions@producer.com

Return undeliverable Canadian addresses to:
1000 - 3530 Millar Avenue
Saskatoon, SK S7P 0B6 CANADA

THE WESTERN PRODUCER

Publications Mail Agreement No. 40069240
Registration No. 10676

Printed with inks containing canola oil

PRESIDENT'S MESSAGE

Sask Seed
Saskatchewan Seed Growers' Association

SHAWN FRASER
SSGA PRESIDENT

THE SASKATCHEWAN Seed Growers' Association (SSGA) is dedicated to improving pedigreed seed production and its use by commercial producers.

The SSGA represents approximately 500 pedigreed seed growers in Saskatchewan. These growers produce approximately 345,000 acres of pedigreed seed every year – over one quarter of all pedigreed seed acreage in Canada.

Saskatchewan's pedigreed seed industry is worth an estimated $790 million to the province's economy and is the foundation of an $11 billion provincial crop industry.

Formed in 1928, SSGA is an incorporated, non-profit member-centric organization focused on enhancing pedigreed seed production and growing the Saskatchewan seed sector. We do this by:

- serving as the official voice of members to industry and government
- providing members with learning and networking opportunities
- advocating for the issues and policies important to members, and
- building strong relationships with key industry partners.

Our board consists of a past president, president, vice president, four directors and two national directors, who also sit on the Canadian Seed Growers' Association (CSGA) board of directors.

We also have advisors from the Saskatchewan Ministry of Agriculture, Canadian Food Inspection Agency (CFIA), Agriculture and Agri-Food Canada and the Crop Development Centre.

We are pleased to present the 2021 SaskSeed Guide and hope you find the articles and variety trial data timely and informative.

Please note that the yellow section provides comparative data from the Saskatchewan variety trials collected at numerous sites across Saskatchewan. The SSGA is proud to contribute funding to this project. These trials are a valuable source of information for producers and seed growers when determining what variety is best for their farm.

As a branch of the CSGA, we have been party to the Seeds Canada discussions.

Over the past five years, CSGA has been in negotiations with the Canadian Seed Trade Association (CSTA), Canadian Seed Institute (CSI), Canadian Plant Technology Agency (CPTA), and the Canadian Seed Analysts Association of Canada (CSAAC).

In August 2020, Canadian seed growers voted against amalgamating with these four other seed organizations and establishing a new national seed organization, called Seeds Canada.

Since then, CSTA, CSI, CSAAC and CPTA have decided to proceed with their own amalgamation initiative without CSGA.

What does this mean for seed growers? We will work with our members to strengthen unity internally and with our provincial and national counterparts.

We remain committed to maintaining the integrity of CSGA as the primary agent of seed crop certification and we stand behind Canada's strong seed certification system.

We will turn our attention to proposed amendments to the Seeds Regulations as part of the Government of Canada initiative in Seed Regulatory Modernization. We welcome the opportunity to enhance our mutually beneficial relationships with the former Seed Synergy partners to benefit the entire seed and agriculture sector.

Value creation remains a significant issue that requires deep thought and discussion. Our public plant breeding system is of critical importance and cannot survive another round of cutbacks.

Is there a need for a producer-led public plant breeding program? I hope that our relationship with agricultural producer groups and the commissions continues to strengthen and provide a plan to ensure producers have access to the best genetics for their farms at an affordable cost.

Certified seed is the product of a production process designed to deliver specific plant breeding achievements to farmers and the food industry.

In other words, it is true-to-type – where all benefits developed by the plant breeder are retained as the seed is multiplied over several generations – from the small amount of seed developed by the plant breeder to the Certified seed stage.

Since 1904, the CSGA has ensured the supply of high-quality seed in Canada. Its members have been multiplying and producing some of the world's highest quality seed, using a world-renowned identity-preserved quality assurance system.

Certified seed is recognizable by the CFIA's blue Certified tag that accompanies each seed sale.

This tag means the seed and crop were inspected by an officially recognized third-party agency and produced by dedicated Canadian seed growers according to stringent requirements.

They have also undergone a carefully monitored production process, passed the quality assurance requirements of varietal purity, germination, and freedom from impurities, and are ready for commercial use.

Your local pedigreed seed growers have a wealth of knowledge when it comes to new varieties. Contact them to help determine what variety is best for your farm.

We would be remiss not the mention COVID-19 and the effects the pandemic is taking on Canadian agriculture.

Canadian farmers are resilient and can weather the worst storms by sticking together.

Seed growers are the origin of Canadian agriculture – we must continue to push forward to feed the country and the world.

The Saskatchewan Seed Growers' Association wishes you a blessed and prosperous 2021 growing season.

This AAC Brandon crop's height is evident at flowering during the 2020 season. The MR rating for fusarium head blight makes AAC Brandon an attractive crop across the Prairies. | JEANETTE GREAVES PHOTO

AAC BRANDON TOPS AMONG CWRS GROWERS

SPECIAL TO SASKSEED

The love affair between Western Canadian wheat growers and CWRS wheat variety AAC Brandon continued in 2020, but there may be signs that growers' eyes are beginning to look elsewhere for different CWRS options.

For the fifth year in a row, AAC Brandon was planted on more insured fields in 2020 than any other offering in Western Canada's CWRS class.

The AAFC variety was planted on nearly 4.75 million acres across Western Canada last year, according to data collected by provincial crop insurance programs and published by the Canadian Grain Commission.

It was by far the most popular CWRS variety in all three prairie provinces, commanding more than 1.7 million insured acres in Saskatchewan, more than 1.3 million acres in Alberta, and almost 1.7 million acres in Manitoba, according to figures in the CGC's annual insured acres report.

In fact, AAC Brandon's insured acreage across the West was more than three times that of the second most popular CWRS variety grown in 2020.

Another AAFC variety, AAC Viewfield, was the second most popular CWRS variety grown by Western Canada's commercial grain farmers last year.

Farmers planted AAC Viewfield on nearly 1.4 million insured acres last season.

Rounding out the top-five in the CWRS class were CDC Landmark (approximately 900,000 acres across the West), AAC Elie (654,000 acres) and AAC Redberry (407,000 acres).

The complete insured acreage report can be viewed online at www.grainscanada.gc.ca/en/grain-research/statistics/varieties-by-acreage/.

AAC Brandon, distributed through SeCan, has enjoyed remarkable success among prairie wheat growers since its commercial release in 2015.

That year, it was grown on 325,000 insured acres across the Prairies, making it the 19th most popular CWRS variety grown in the West.

The following year, in 2016, Brandon's total prairie acreage sky-rocketed to more than 1.16 million acres, propelling the high-yielding variety to first place overall in just its second year of commercial production.

AAC Brandon's rapid uptake continued after that, with total insured acreage in Western Canada increasing 2.28 million acres in 2017, 4.1 million acres in 2018 and nearly 5.3 million acres in 2019.

Todd Hyra, SeCan's business manager for Western Canada, said Brandon's strong performance over a wide range of growing conditions has resonated with Prairie wheat producers.

The variety was a solid performer in 2015 and 2016 under relatively wet conditions.

It also did well in subsequent years that were marked by above average temperatures during the growing season and limited moisture.

"It has just been a rock solid performer," Hyra said in a recent interview.

"It's the consistency across environments and over the years ...."

"The combination of short, strong straw, yield consistency, disease protection with the MR rating for fusarium and that overall ease of management really makes it what it is."

Hyra said the timing of AAC Brandon's commercial release was one of the factors that allowed it become the most widely grown CWRS variety in just its second year of commercial production.

At the time, there were a number of other high-yielding CWRS varieties available but growers were beginning to recognize the merits of CWRS varieties that were shorter in stature, produced less straw and were easier to push through the combine during the busy harvest season.

Another variety, CWRS check Carberry, had already re-calibrated growers' expectations surrounding straw management and had illustrated how beneficial speed of harvest can be in terms of saving time and extending the casual service intervals and life expectancy of harvest machinery.

When the rights to Brandon were acquired, seed growers were eagerly awaiting a new short strawed variety that could push the yield envelope to the next level.

"At the time, there was a tonne of interest in short strong strawed varieties ... and everyone was waiting for a replacement for Carberry," Hyra said.

"There were a lot of SeCan seed grower members that had AAC Brandon in their portfolios ... and based on their experience with the variety during multiplication, it was a very easy variety for them to recommend to their customers."

Hyra also acknowledged the stringent selection process employed by former AAFC wheat breeder Ron DePauw as a key factor behind the variety's success.

"In his time at the Swift Current breeding facility at AAFC, he (DePauw) put a great deal of emphasis on selecting strong products," Hyra said in an earlier interview.

"The ruthlessness that he used in his selection process was quite remarkable and I've really gained an appreciation for that since he's become our science advisor at SeCan."

After a five-year stint at the top of the CWRS rankings, there are signals emerging that AAC Brandon's acreage may have topped out.

In 2019, AAC Brandon was planted on nearly 5.258 million insured wheat acres across the West — an incredible 42 percent of the total insured Canada Western Red Spring (CWRS) wheat acres.

continued on page 8 »

SASKATCHEWAN'S TOP INSURED CWRS VARIETIES

VARIETY	2016	2017	2018	2019	2020
AAC Brandon	252,123	814,524	1,602,675	2,131,224	1,734,986
CDC Landmark	0	6,114	252,686	706,731	771,219
AAC Viewfield	0	1,241	33,321	199,170	431,049
AAC Elie	35,125	106,262	206,736	223,478	162,305
CDC Plentiful	230,736	328,867	354,832	291,200	161,437
AAC Redberry	0	0	11,792	42,344	138,555
Cardale	346,641	331,902	308,330	239,100	132,551
CDC Utmost	602,034	513,980	425,693	233,254	128,563
AAC Alida	0	0	0	5,762	121,152
AAC Cameron	2,957	41,928	110,155	112,769	111,175
Carberry	332,951	262,048	225,862	165,592	109,351
CDC Hughes		615	38,375	83,542	105,869
CDC Titanium	96,487	178,732	206,760	158,906	102,911
CDC Stanley	193,510	170,232	137,801	103,375	63,420
AAC Jatharia	1,428	47,087	119,045	96,391	53,765
Glenn	114,627	106,022	108,095	76,540	42,040
Shaw	207,875	196,148	127,589	83,504	41,568
CDC VR Morris	97,328	85,362	74,298	30,987	34,769
AAC Connery	0	6,619	22,836	25,489	17,390
Stettler	37,000	34,521	36,184	30,973	17,354
Goodeve	124,869	75,664	43,894	25,947	16,560
AAC Tisdale	0	0	542	8,465	16,412
AC Barrie	37,233	31,469	23,119	29,091	14,465
Waskada	38,377	26,831	29,231	20,445	12,691
AAC Prevail	0	17,875	35,057	24,198	11,715

Source: Canadian Grain Commission / Saskatchewan Crop Insurance Corp.

» continued from page 7

In 2020, Brandon's total Western Canadian acreage still represented 42 percent of total insured CWRS plantings, but actual acreage fell to 4.735 million acres, a year-over-year decline of nearly 10 percent.

That's the first time since its commercial release that Brandon's total Western Canadian acreage has gone backward.

To be clear, AAC Brandon is still easily the most dominant and most popular CWRS variety grown in Western Canada.

But up-and-coming varieties have been slowly chipping away at Brandon's acreage.

AAC Viewfield, distributed through FP Genetics, was second most popular CWRS variety grown in the West in 2020.

It was planted on nearly 1.4 million acres last year, including nearly 650,000 acres in Alberta and more than 430,000 acres in Saskatchewan.

A year earlier, AAC Viewfield's total Western Canadian plantings were in the neighbourhood of 735,000 acres, suggesting a year-over-year increase of nearly 90 percent between 2019 and 2020.

On its website, FP Genetics describes AAC Viewfield as a top yielding, semi-dwarf CWRS variety with leading sprout tolerance and top of class standability ratings.

"It stands poker straight, making production and harvest a breeze," the company's promotional material says.

It also has a good disease package and has been praised for its colour retention through recent difficult harvests.

According to the 2020 Saskatchewan Varieties of Grain Crops pamphlet (the yellow pages of this SaskSeed Guide) AAC Viewfield earned a very good (VG) rated for lodging resistance, a good (G) rating for sprouting resistance and an intermediate rating (I) for fusarium headblight (FHB) resistance over five years of testing.

Although AAC Viewfield doesn't contain the midge tolerant Sm1 gene, it's considered a good fit for CWRS growers in the province's southern grainbelt, where midge pressure is comparatively low.

Also gaining ground on AAC Brandon in the CWRS class is CDC Landmark, a high-yielding, midge tolerant, semi-dwarf variety with good standability and sprout tolerance. CDC Landmark carries the SM1 gene that confers midge tolerance.

That, along with its competitive yield potential, has made it a popular choice among CWRS growers in areas where midge damage is a prevalent concern.

CDC Landmark is available as a midge tolerant varietal blend with AAC Viewfield (See CDC Landmark – AAC Viewfield listings in the Directory of Crop Varieties listings in this magazine).

Other CWRS varieties that registered notable acreage gains in Saskatchewan between 2019 and 2020 included:

- AAC Redberry, which registered a 329 percent gain in 2020 acres, jumping from approximately 42,000 insured acres in 2019 to more than 138,000 acres in 2020.
- AAC Alida, which jumped from approximately 5,700 insured acres in 2019 to more than 121,000 acres in 2020, a year-over-year increase of more than 2,100 percent.

Hyra said SeCan's commercial release of two newer CWRS varieties — AAC Wheatland VB and AAC Starbuck VB — could take a further bite out of AAC Brandon's acreage in 2021.

Available to commercial grain growers for the first time in late 2020, AAC Wheatland and AAC Starbuck are "a significant step up in terms of overall performance," Hyra said.

"They've got that good package of height and straw strength and disease protection, they have the added benefit of midge tolerance on top of that, and they are significantly higher yielding as well," he added.

"Based on the feedback we've been getting from (SeCan seed growers) over the past three years, they are quite enthused by the performance of these two varieties and are also seeing brisk sales of those two products right now."

Certified seed for AAC Wheatland VB and AAC Starbuck VB was available for the first time last fall.

In the CWAD class, Transcend was once again the most dominant durum variety grown in Saskatchewan last year, commanding more than 1.25 million insured commercial acres.

Transcend, distributed by FP Genetics, has been the province's most popular CWAD variety for the past five years.

In 2020, Transcend was planted on more than twice as many Saskatchewan acres than the second most popular CWAD variety CDC Precision.

Precision, distributed by Alliance Seed, has enjoyed steady growth in the Saskatchewan market over the past four years. In 2020, it was planted on 519,000 insured commercial acres, up from 365,000 a year earlier. That represents a year-over-year increase of nearly 42 percent.

Other notable gainers in CWAD class last year included:

- **CDC Alloy** (FP Genetics) up from 67,000 insured acres in 2019 to more than 136,000 acres in 2020, a gain of more than 100 percent.
- **AAC Congress** (Canterra) up from 25,000 acres in 2019 to more than 57,000 acres in 2020 (+128 percent).
- **CDC Credence** (Canterra) up from 3,700 acres in 2019 to more than 26,000 acres in 2020 (+625%).
- **CDC Dynamic** (Proven Seed/Nutrien) up from 1,400 insured acres in 2019 to more than 17,000 acres in 2020 (+1,100 percent).
- **AAC Stronghold** (SeCan) up from 4,500 acres in 2019 to 25,000 acres in 2020 (+455 percent).

SASKATCHEWAN'S TOP INSURED CWAD VARIETIES

VARIETY	2016	2017	2018	2019	2020
Transcend	842,969	973,330	1,603,973	1,160,052	1,258,067
CDC Precision	0	5,513	120,663	365,917	519,070
Brigade	494,302	301,972	422,683	294,107	298,669
AAC Spitfire	2,788	61,279	270,185	244,295	281,846
CDC Alloy	0	979	32,867	67,522	136,617
Strongfield	688,757	327,276	336,299	160,062	116,138
CDC Fortitude	94,080	61,899	102,008	81,315	73,329
AAC Congress	0	0	6,214	25,658	57,406
CDC Verona	314,388	140,378	125,652	56,720	49,508
CDC Credence	0	0	0	3,669	26,498
Eurostar	69,797	69,758	71,072	26,402	26,060
AAC Stronghold	0	0	886	4,445	24,962
CDC Dynamic	0	0	538	1,425	17,172
Enterprise	57,807	35,088	39,054	16,025	16,902
AAC Raymore	46,922	33,154	26,511	15,450	16,079
Commander	24,539	3,367	13,669	6,669	15,348
AC Navigator	45,280	35,408	33,018	27,912	15,313
CDC Carbide	0	1,509	17,378	13,706	13,511
AAC Current	34,402	21,376	27,371	18,832	13,330
Kyle	61,635	39,600	33,959	16,898	11,163

Source: Canadian Grain Commission / Saskatchewan Crop Insurance Corp.

New durum varieties such as CDC Precision and CDC Alloy are gaining acreage in Saskatchewan. Other new CWAD varieties that made impressive acreage gains in 2020 included AAC Congress, CDC Credence, CDC Dynamic and AAC Strongfield. | FILE PHOTO

CSGA'S PEDIGREED SEED ACREAGE REPORT SHOWS BIG GAINS FOR CANOLA, LENTILS

Inspected acreage was up in Saskatchewan and Alberta in 2020, but down in Manitoba

SPECIAL TO SASKSEED

Canada's pedigreed seed acreage saw a year-over-year decrease in 2020, maintaining a downward trajectory that was established four years ago.

Inspected pedigreed seed acreage across the country was listed at just under 1.27 million acres in 2020, down from 1.29 million acres in 2019.

The 2020 figure was Canada's lowest level of pedigreed seed production since 2014 when CSGA members had 1.17 million acres inspected for certification.

Across Canada, only three provinces registered a net gain in pedigreed seed acreage last year.

Saskatchewan seed growers had 340,621 acres inspected in 2020, up 3.2 percent from the previous year's 330,067 acres.

Alberta seed growers also saw a slight year-over-year increase at 353,966 acres in 2020, compared to 351,760 acres in 2019.

Quebec's acreage was up marginally to 84,173 acres.

All other provinces saw declining pedigreed seed acreages, with the biggest retraction coming in Manitoba.

Total pedigreed seed crop inspections in that province were listed at 305,484 acres last year compared to almost 342,000 acres in 2019.

That represents a year-over-year reduction of more than 36,000 acres in Manitoba, or 10.6 percent.

Just four years earlier, Manitoba seed growers had more than 390,000 acres inspected for pedigreed production.

Since 2017, pedigreed seed production has dropped in the Keystone province by 85,000 acres, or 21.7 percent.

Much of that reduction is tied to a precipitous drop in pedigreed soybean plantings.

While Manitoba's numbers may be viewed as a cause for some concern, the same cannot be said for pedigreed seed production in Canada's other prairie provinces.

Saskatchewan's inspected acreage reached its highest level ever in 2020 and represented the province's third straight year of expanded production.

Pedigreed seed growers in Saskatchewan had more than 340,000 acres inspected last year.

Just seven years earlier, the province's total pedigreed seed acreage was listed at just a hair over 276,000.

Saskatchewan's 2020 acreage represents an increase of more than 23 percent over since 2014.

Alberta's inspected seed acreage was also at its highest level in years.

Alberta seed growers had inspections conducted on nearly 354,000 acres last year, up 27 percent over the past seven years.

Alberta's pedigreed seed acreage has now been increasing every year since 2014.

On a crop-by-crop basis, there were also winners and losers in 2020.

Among the winners, lentils saw a huge year-over-year increase.

Inspected lentil acres were listed at almost 39,000 acres nationally in 2020 with the vast majority of plantings (34,512 acres) located in Saskatchewan.

Pedigreed lentil acreage saw a year-over-year increase of nearly 13,000 acres last year, up 49 percent from 2019.

Pedigreed wheat acreage also rebounded with nearly 369,000 acres inspected in 2020, compared with 358,000 acres a year earlier.

Other notable gainers included canola, which saw 65,654 acres inspected across the country in 2020, compared to 53,917 acres in 2019.

Inspected fababean acres also saw a big year-over year increase, jumping 3,300 acres to 9,820 in 2020. That represents a one-year gain more than 50 percent.

On the other side of the ledger, pedigreed soybean acres continued their downward slide in 2020.

Nationally, inspected soybean acreage was down 41,000 acres in 2020 to 277,142. Just two year earlier, inspected soybean acres across the country surpassed 400,000 acres.

Other notable year-over-

continued on page 12 »

NATIONAL PEDIGREED SEED ACREAGE

CROP KIND	2016	2017	2018	2019	2020
Alfalfa	81,260	81,573	69,650	55,354	42,732
Barley	118,207	93,440	98,298	132,956	129,190
Bean	3,348	4,163	3,436	4,938	4,574
Birdsfoot Trefoil	2,107	2,872	2,337	3,209	2,247
Bromegrass	9,872	10,750	7,425	7,767	7,206
Buckwheat	1,582	1,352	867	958	933
Canarygrass	550	1,624	2,150	230	1,312
Canola	58,801	59,263	72,951	53,917	65,654
Chickpea	2,814	3,207	5,209	2,861	3,070
Clover	6,106	6,243	4,596	4,443	4,330
Faba Bean	8,528	6,331	4,424	6,513	9,820
Fescue	19,398	18,675	13,457	14,193	16,991
Flax	21,081	21,341	21,200	26,398	23,224
Hemp	7,248	13,373	5,193	6,995	4,763
Hybrid Corn	18,487	18,224	15,297	17,787	16,224
Lentil	43,266	35,390	23,776	26,040	38,802
Mustard	4,162	1,443	4,247	2,369	2,049
Oats	51,939	48,919	50,809	74,019	77,306
Peas	92,668	85,565	94,044	105,713	100,925
Rye	7,783	3,581	2,758	4,909	5,518
Ryegrass	25,386	19,204	16,104	24,672	19,418
Soybeans	314,533	402,254	401,033	318,249	277,142
Timothy	42,246	37,177	26,284	25,413	29,816
Triticale	4,136	1,650	3,340	6,848	5,836
Wheat	365,045	366,009	378,429	358,812	368,944
Wheatgrass	6,376	6,387	6,146	6,715	7,135
Minor Crops	9,136	3,221	1,511	1,609	1,386
Total	**1,326,065**	**1,353,231**	**1,334,971**	**1,293,887**	**1,266,547**

More than 34,500 acres of pedigreed lentils were inspected in Saskatchewan last year, compared to fewer than 23,000 acres in 2019. | FILE PHOTO

» continued from page 10

year declines were recorded in alfalfa, down more than 12,600 acres to 42,732 (-22.8 percent) and flax down 12 percent to 23,224 acres.

Pedigreed field pea acreage also declined by nearly 5,000 acres to 101,000 acres nationally, but total pea inspections remained above 100,000 acres for the second year running and were still well above the five-year average of 95,183.

A total of 2,752 plots were inspected in 2020, up marginally from 2,744 a year earlier.

The Canadian Seed Growers Association releases a pedigreed seed acreage and membership report each year.

The 2020 report, dated Nov. 12, showed CSGA's membership at 3,113 members last year, down from 3,224 in 2019.

In 2016, national membership was listed at 3,537 members.

Saskatchewan's CSGA membership was listed at 485 last year, down marginally from 489 members in 2019.

SASKATCHEWAN PEDIGREED SEED ACREAGE

CROP KIND	2016	2017	2018	2019	2020
Alfalfa	18,877	16,401	14,008	13,714	12,513
Barley	41,241	30,047	31,794	47,136	44,640
Beans	250	887	329	54	575
Birdsfoot Trefoil	100	100	100	100	130
Bromegrass	2,720	3,358	2,454	2,497	2,647
Canarygrass	550	1,509	2,115	55	1,312
Canola (Hybrid)	0	240	18	121	20
Chickpeas	1,966	1,388	2,583	1,445	1,985
Clover	3,657	2,018	2,755	2,312	1,878
Fababeans	3,625	4,540	1,884	2,734	4,902
Fescue	626	456	1,155	1,840	2,416
Flax	11,103	12,622	12,630	13,656	13,786
Hemp	2,459	4,051	1,727	2,969	932
Lentils	39,503	29,767	21,389	22,752	34,512
Mustard	382	494	1,595	880	657
Oats	11,882	14,088	10,756	19,605	20,192
Peas	42,032	37,668	42,401	51,659	49,769
Rye	770	440	196	773	589
Ryegrass	2,485	1,065	1,970	2,331	1,957
Soybeans	4,420	17,454	17,138	4,343	2,592
Timothy	4,438	4,355	3,545	4,209	6,427
Triticale	780	335	997	1,269	532
Wheat	128,440	144,338	149,181	131,585	133,313
Wheatgrass	1,675	1,270	1,470	1,349	1,946
Other crops	3,497	1,633	94	680	400
Total	**327,480**	**330,473**	**324,284**	**330,067**	**340,621**

CDC researcher Shuhua Zou works in the Crop Development Centre's Grain Innovation Lab in Saskatoon. Her work supports the CDC's spring wheat and canaryseed breeding programs, led by Pierre Hucl. | PHOTO BY DAVID STOBBE / UNIVERSITY OF SASKATCHEWAN

COVER STORY

CDC CELEBRATES A HALF CENTURY OF CROP INNOVATION

BY KATHY FITZPATRICK | FOR THE UNIVERSITY OF SASKATCHEWAN

A scan across the horizon reveals how much Saskatchewan's agricultural landscape has changed in half a century — millions of acres of ripening lentils, fields of sky-blue flax, and stubble poking through snowy expanses, ready to receive springtime's direct-seeded crop.

Much of the credit for all this goes to the Crop Development Centre (CDC) at the University of Saskatchewan's College of Agriculture and Bioresources. Launched in 1971 to help producers diversify and grow crops more productively and profitably, the CDC celebrates its 50th anniversary this year.

"Over half a century, our renowned CDC research has supported producers and agribusiness, helping to make the province a world leader in agriculture," said the university's vice-president research Karen Chad.

Over the past 50 years, the CDC has released more than 500 new crop varieties — an average of 100 for each decade.

CDC director and plant breeder Curtis Pozniak called the feat "remarkable."

Improvements offered through CDC varieties included earlier maturity, higher yield, and improved disease resistance, to name just a few. CDC research has also helped to substantially reduce the levels of cadmium in durum wheat.

And thanks to the work of pulse breeders such as Al Slinkard, Bert Vandenberg, Tom Warkentin and others, Saskatchewan now leads the world in exporting peas, lentils, and chickpeas—staple foods in fast-growing countries such as India, China, Bangladesh, and northern Africa.

CDC wheat breeder Pierre Hucl has developed numerous new wheat varieties, some with resistance to the orange blossom wheat midge, as well the world's first hairless canary seed — a crop with exports now valued at more than $100 million a year.

More recently, the CDC has spearheaded global efforts to map the wheat genome.

Gordon Rowland, a former CDC director and flax breeder, said the CDC's combination of plant breeding expertise, facilities and land resources is what allowed the CDC to make such a lasting and valuable contribution to Western Canada's agricultural landscape.

"(It's) the greatest plant breeding and crop development organization ever established in Canada," Rowland said.

Over the years, the CDC's financial impact has been "enormous," added former CDC director Bryan Harvey who co-developed a world renowned malting barley variety called Harrington along with former CDC barley breeder Brian Rossnagel.

From 1991 to 2015, producer profitability across the three prairie provinces increased by $3.8 billion "as a result of CDC varieties provided to the marketplace," according to the CDC's 2016 economic impact report.

For every $1 million invested in CDC plant breeding, producers saw a sevenfold return, the report said.

In fact, from 2011 to 2015, CDC crop varieties accounted for 37 percent of the wheat, durum, barley, oats, flax, field peas, lentils, chickpeas, canaryseed, and dry beans acreage grown in the three prairie provinces.

That number includes an incredible 95 percent of Western Canadian lentils, 85 percent of field peas, 83 percent of flax, 75 percent of chickpeas and 73 percent of canaryseed.

The CDC also continues to be involved in leading-edge research with a vision to becoming "a world-class crop improvement centre that delivers crop genetics for society."

CURTIS POZNIAK
DIRECTOR, CROP DEVELOPMENT CENTRE

In 2019-20, CDC researchers carried out 116 research projects worth more than $30 million, including two large Genome Canada projects involving lentils and wheat valued at $7.7 million.

Today, CDC scientists are global leaders in the application of genomic research.

Genome sequencing involves developing a DNA blueprint of the varieties used in breeding.

"This gives scientists and breeders access to powerful DNA testing tools that can be used to improve efficiency in selection," Pozniak said.

For instance, if breeders can identify a gene that confers disease resistance, they can then develop a DNA tag or "fingerprint" that allows them to select for that trait during cross breeding.

In recent years, Pozniak's team along with Andrew Sharpe at the University of Saskatchewan's Global Institute for Food Security have played a key role in two major international projects — one that sequenced the bread wheat genome and another that sequenced the entire genome of durum wheat, the source of semolina for pasta.

And in 2020, Pozniak led an international consortium of 95 scientists that sequenced the genomes of 15 different wheat varieties from around the world. The outcome was the most comprehensive atlas of wheat genome sequences ever reported — a huge achievement that will allow for the more rapid and precise development of improved wheat varieties in the future.

The ongoing importance of genomics as a platform for improving crops like wheat should not be underestimated, said Kofi Agblor, who led the CDC from 2012 to 2019.

"I think the best is yet to come," he said.

Resistance to disease, pests and drought remain important goals at the CDC, especially in the face of global climate change.

But crops must also adapt to changing market demands. As the world's population continues to rise and consumers hold out for choices that are healthier and more ecologically sustainable, crops must also evolve to suit changing production and processing methods.

"As plant breeders, we have a lot of traits to consider and balance when creating new varieties," Pozniak said.

Crisis creates opportunity

It was a changing world that led to the CDC's creation in the first place.

In the late 1960s, a global glut drove down the price of wheat, the crop that Saskatchewan farmers relied upon most heavily.

This Prairies farm crisis provided the rationale for a bigger push in agricultural research, particularly in Saskatchewan, which lacked a major plant breeding centre.

In a 1971 funding application to the National Research Council, the university made the case that with agricultural markets changing rapidly, prairie farmers had to diversify and lessen their dependence on wheat, while at the same time improving traditional crops (wheat and barley in particular) to meet world demands.

At the same time, the College of Agricul-

continued on page 16 »

Lentil breakthrough helped to reshape Prairie agriculture

SPECIAL TO SASKSEED

It's hard to imagine what Saskatchewan's pulse industry would be like today if the University of Saskatchewan's Crop Development Centre (CDC) had never been created.

The CDC has "played a very important role in helping to foster the growth of the sector here in Saskatchewan," said Carl Potts, executive director of Saskatchewan Pulse Growers (SPG).

Lentils, in particular, helped to build the Canadian pulse industry.

An inexpensive and nutritious source of protein, nearly all the Canada's lentil production comes from Saskatchewan, and Canada is the world's top producer and exporter of the crop.

But that wasn't always the case.

When field pea breeder Al Slinkard arrived at the CDC nearly 50 years ago, lentils were almost unheard of as a viable crop for Saskatchewan.

Slinkard arrived in Saskatchewan from the University of Idaho in 1972.

At the time, a global wheat surplus had driven wheat prices down and there was a need to diversify cropping options for Western Canadian farmers.

Slinkard learned of a couple of Saskatchewan farmers who had tried growing lentils, unsuccessfully.

On top of that, lentil prices at the time were "ridiculous", Slinkard recalled. Four cents a pound.

But in 1978, the year CDC released Slinkard's Laird lentil, the Palouse area straddling Washington and Idaho states was dealing with an "unprecedented drought", he said.

Buyers turned to Saskatchewan, and the average lentil price shot up to 35 cents a pound.

Bruce Cheston, a farmer from Grand Coulee, Sask., west of Regina, had grown two fields of lentils with an average yield of 1,800 pounds per acre.

continued on page 17 »

» continued from page 15

ture's crop science department was searching for more money to conduct research, hire staff, and attract graduate students.

Although Saskatchewan has almost half the arable crop land in Canada, there were only four people at the U of S crop science department doing field research.

Harvey said the department was "way understaffed for the responsibility that it had."

More crop research was a tough sell in the midst of a declining wheat market.

But Harvey pointed out the real risk facing prairie agriculture was the 15 or more years that was typically required at that time to develop and launch a new and improved crop variety.

Support for the CDC's creation eventually fell into place.

The NRC approved $455,100 over three years for research into feed barley, field peas and other new crops, as well as spring and winter wheat. The province of Saskatchewan agreed to cover the $300,000 capital cost of the new crop science field laboratory, committed $200,000 annually for the first three years, and agreed to cover the CDC's operating budget after the NRC term grant expired.

> *(It's) the greatest plant breeding and crop development organization ever established in Canada.*
>
> **GORDON ROWLAND** | FORMER CDC DIRECTOR

In 1972, the university announced that an additional $100,000 had been set aside for growth room facilities to be built that summer. Five years later, Fredrick Wesley Kernen's large gift of farmland to the university led to the creation of the Kernen Crop Research Farm, another valuable resource for CDC crop breeders.

The CDC was initially staffed with six scientists working on feed and food barley, peas, winter wheat, and a few other areas. But some early game-changers released in the late 1970s and through the 1980s established the CDC's reputation nationally and internationally.

Skill, good timing and superior crop traits helped to catapult the CDC's Laird lentil to market dominance, along with Harrington two-row malt barley and Vimy flax.

In all three cases, the failures of established varieties helped to create new demand for the new and more resilient CDC varieties.

The CDC's work aimed at developing new crop varieties continues today.

CDC researchers Bunyamin Tar'an and Donna Lindsay have helped increase the genetic diversity of chickpeas through an international project that provides plant breeders with access to thousands of seed progeny from wild plants.

In the mid-2000s, the CDC expanded it programming by taking over a forage breeding program previously managed by Agriculture and Agri-Food Canada. Among other things, CDC forage breeder Bill Biligetu is working on salt-tolerant forage grasses, an important crop as weather extremes become more common and producers deal with high soil salinity.

And in barley, head barley breeder Aaron Beattie continues to develop new and improved malting barley varieties such as CDC Bow and CDC Fraser that offer enhanced agronomics and end-use quality traits.

Addressing crop disease has always been a CDC priority. In 2020, plant pathologist Sabine Banniza was awarded more than $1.3 million in Agricultural Development Fund for projects looking at plant root health in pulse crops.

CDC researcher Randy Kutcher, who developed a quick and accurate method to quantify toxins in fusarium-infected grain, was recently honored with the 2020 North American Colleges and Teachers of Agriculture Teaching Award of Merit.

Looking ahead, crop genetic improvement will remain the centrepiece of the CDC's work. A strategic research program for the period 2018-2023 lays out ambitious goals that focus on "improving the agronomic performance and the food and nutritional quality characteristics of pulse crops, cereals and flax for food, feed and industrial uses."

Linked to this is the goal of further diversification through the development of "new crop kinds, specialty varieties and market classes that add value and provide the basis for value-added processing and marketing to specialty end-users."

Pozniak embraces the challenges that go along with breeding new and improved crops.

Peering into the future and figuring out what will be next in demand is "what makes it so fun," he says.

Field pea breeder Al Slinkard arrived at the CDC in 1972 and worked to diversify cropping options for farmers. In 1978, the CDC released Slinkard's Laird lentil, which found immediate popularity with buyers. | PHOTO COURTESY OF THE UNIVERSITY OF SASKATCHEWAN

» continued from page 15

Cheston's lentils grossed more than $600 an acre. A wheat grower across the road would be lucky to gross $100 and acre, Slinkard recalled.

That winter, Slinkard criss-crossed the province giving talks to farmers three or four times a week. He found an eager audience.

And by the late 1980s, Slinkard was able to report that the CDC's Laird lentil as "the most widely grown lentil variety in the world."

The large-seeded Laird was quickly followed by Eston, a small-seeded green lentil, released in 1980.

Saskatchewan producers quickly threw their support behind the CDC, said Potts.

"Growers at the time recognized that in order to have a successful and growing industry, they needed to make investments in support of breeding," he said.

Since 1997, SPG has invested more than $60 million at the CDC in support of plant breeding and related research including genomics.

Today, not only does Saskatchewan's pulse industry enjoy global reach, but so does the CDC's ongoing research into pulse crops.

An international team led by CDC plant scientist Kirstin Bett has developed a model for predicting which lentil varieties are most likely to thrive in new production environments. It's vital information for producers and breeders as they strive to address climate change and feed the world's growing appetite for inexpensive plant-based protein.

Working with universities and organizations around the world, the team planted 324 varieties in nine production hotspots throughout North America, South Asia, and the Mediterranean. The findings have been published in 2020 in the journal *Plants, People, Planet.*

The CDC's Bett and Bert Vandenberg are also working with the genomic data company NRGene, based in Israel.

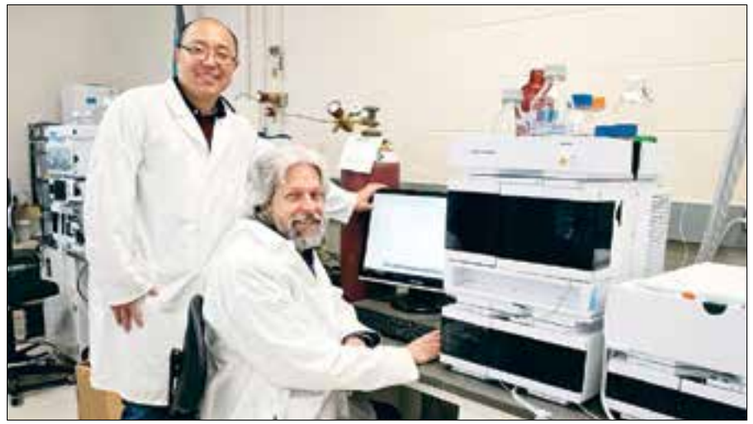
CDC's ongoing involvement in plant breeding and genomics prompted NRGene in 2020 to open a satellite office in Saskatoon, where work is taking place to sequence more of the world's major crops.

In 2017, the research collaborators from around the world reported they have successfully sequenced two wild lentil genomes.

That information that will support breeding efforts aimed enhancing yield and quality. The work is part of a $7.9-million Genome Canada-funded project to apply genomics to "innovation in the lentil economy."

MYCOTOXIN DETECTION SYSTEM WILL ASSIST BREEDERS

SPECIAL TO SASKSEED



U of S researchers Lipu Wang, left, and Randy Kutcher have developed a new system that detects fusarium-related mycotoxins more quickly and more accurately in cereal grain samples. It will allow plant breeders to screen more material at a lower cost. | UNIVERSITY OF SASKATCHEWAN PHOTO

Researchers at the University of Saskatchewan in Saskatoon have developed a process that will significantly reduce the amount of time required to detect harmful grain-based mycotoxins such as deoxynivalenol, or DON.

The process, developed by U of S researchers Lipu Wang and Randy Kutcher, involves a simplified one-step mycotoxin extraction process that uses a chemical solvent called acetonitrile.

"This method is more accurate and more sensitive compared to existing measures that are currently being used," said Wang, a research officer with the university's Crop Development Centre.

"Our system has a very high sensitivity, meaning we can detect very low concentrations of mycotoxins in grain samples, and we can also do more quickly and more efficiently."

The new method is being used exclusively by academics but it could eventually be used by grain companies that are interested in managing the quality for grain that's sold in domestic and export markets. "Our customers want no contaminants — no toxins — in our grain," said Kutcher, a U of S plant pathologist and strategic research chair in cereal and flax pathology at the CDC.

"It may also help in deciding whether grain should be processed as food or animal feed."

In recent years, grain-borne mycotoxins including DON have become a common concern among Western Canadian farmers, grain buyers and processors.

The mycotoxins, which can be harmful to human and animal health, are typically found in fusarium-infected cereal grain crops, particularly in regions where humidity and moisture are abundant during anthesis.

Fusarium head blight, a fungal disease that affects kernel development, causes millions of dollars in annual losses in Canadian cereal crops such as barley, wheat and oats.

In a worst case scenario, grain that contains high levels of mycotoxins such as deoxynivalenol (DON) can reduce the market value of a crop to zero. Livestock animals that consume infected feed can experience reduced growth rates, lower fertility, compromised immune responses, and in severe cases, death.

Because of this, the development of new crop varieties that are more resistant to FHB has emerged as a high priority among plant breeders.

In a recent interview, Wang described his new mycotoxin detection system as being faster, more accurate and less expensive than existing mycotoxin detection methods.

More rapid analysis means increased laboratory throughput and more immediate results for plant breeders, who are often dealing with hundreds or thousands of samples at a time, he said.

Here's how the process works.

Submitted samples of grain are first ground into flour or small particles and then mixed with acetonitrile. The mixture is then allowed to incubate for two hours, allowing the mycotoxins to be extracted.

Extracted mycotoxins are then injected into a mass spectrometer where the toxins are identified and quantified.

The new process can facilitate the processing of more than 350 samples per day, using a single mass spectrometer. Previously, a lab with access to a mass spectrometer might analyze 50 or 60 samples a day.

"The problem has been that crop breeders and researchers have lacked a way to measure DON that is both quick and accurate," said Wang.

"Analysis that previously took 20 minutes per sample can now be done in less than two minutes, which is very important when testing thousands of samples."

The new detection method will offer plant breeders at CDC and other breeding institutions a much more efficient way to select wheat or barley lines that accumulate less DON, he added.

Wang said the system is currently being used in academic settings, although it could be used more widely, perhaps by the commercial grain industry, for example.

However, the new system requires access to a mass spectrometer.

Wang said the university is currently exploring commercial applications for the new system, possibly on a fee-for-service basis.

"When we started the project back in 2017, our goal was to develop a high-throughput method for breeding programs," said Wang.

"Right now we are very confident that this assay is very stable and reproducible."

The new detection system was developed with financial support from Saskatchewan's Agriculture Development Fund and the Saskatchewan Wheat Development Commission.

WHEAT GROWERS WELCOME NEW AAFC CORE FUNDING

SPECIAL TO SASKSEED

BRETT HALSTEAD
CHAIR, SASKATCHEWAN WHEAT DEVELOPMENT COMMISSION

Wheat growers in Saskatchewan, Alberta and Manitoba will continue to provide financial support for wheat breeding and variety development efforts at Agriculture and Agri-Food Canada.

Last October, the Canadian Wheat Research Coalition, which invests producer check-off dollars on behalf of producer-directed wheat commissions in the three prairie provinces, announced that it had reached a new five-year core funding agreement with AAFC.

Under the deal, the Saskatchewan Wheat Development Commission (SaskWheat), the Alberta Wheat Commission and the Manitoba Crop Alliance will invest $22.6 million in AAFC wheat breeding programs over a five year term.

The new agreement runs until March 31, 2025 and will ensure that Western Canadian wheat farmers will continue to have access to new AAFC wheat varieties.

The agreement replaces a previous producer funding agreement that that was facilitated by the Western Grains Research Foundation.

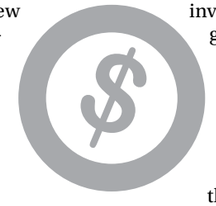
Officials with the CWRC said the money will be used to develop field-ready AAFC wheat varieties in the Canadian Western Red Spring, Canadian Western Amber Durum, Canadian Prairie Spring Red, Canada Western Soft White Spring, and Canada Western Red Winter wheat classes.

The new agreement represents a $2.6 million increase over the previous five-year deal, which expired March 31, 2020.

"The activities being conducted by Canadian research-ers and wheat breeders such as those at AAFC have led to major innovations over the past few decades, including the development of several new wheat varieties with improved genetics and more desirable traits," said Fred Greig, CWRC board chair and director with the Manitoba Crop Alliance.

"This investment will ensure Canadian farmers benefit from new wheat varieties that improve and enhance the competitiveness of their farming operations while maintaining Canada's reputation for providing quality wheat for markets around the globe."

Brett Halstead, a grain farmer from Nokomis, Sask., and chair of SaskWheat, said the research and plant breeding conducted by AAFC over the past few decades has delivered much-needed innovation and economic benefits to Canadian grain farmers.



"Farmer funding committed by SaskWheat and our fellow commissions in Alberta and Manitoba through the core breeding agreement will help support AAFC's ability to bolster their technology and attract and retain top researchers and breeders," Halstead said.

"Public wheat breeding is crucial to Canada's agriculture sector and the wheat varieties AAFC has produced are a tremendous return to the farmer investment in this program."

Provincial contributions under the new $22.6 million agreement are based on the volumes of wheat produced in each of the three Prairie provinces.

Under the cost-sharing formula, Saskatchewan growers will contribute 53 percent, or approximately $12 million, compared to Alberta's 32 percent or $7.25 million and Manitoba's 15 percent, or $3.4 million.

Harvey Brooks, CWRC president and general manager of SaskWheat, said the new agreement provides an assurance that growers will have access to new and improved AAFC wheat varieties.

However, the agreement does not rule out the possibility that yet-to-be commercialized AAFC wheat varieties could have variety use agreements, or VUAs, attached to them.

"It (the agreement) does not have that commitment in there but there is a (provision) for AAFC to discuss that with us and for us to be informed before any commercializer would try to go in that direction," Brooks said in an October 2020 interview.

The issue of attaching VUAs to publicly-developed wheat varieties has been a contentious issue for the prairie wheat commissions and the CWRC.

Brooks said prairie wheat growers already provide a significant amount of up-front funding for AAFC's varietal development work in wheat, not only through core funding agreements, but also through the Canadian National Wheat Cluster and provincial ag funding mechanisms such as Saskatchewan's Agriculture Development Fund and Alberta's Ag Funding Consortium.

"Once you line up all of the levels of producer support that goes in, it's a very impressive amount," Brooks said.

Growers shouldn't be expected to pay additional royalties on those seed varieties or sign royalty-enabling VUAs until more discussions have taken place, he added.

In late 2019, Canadian seed distributor SeCan announced plans to include two AAFC wheat varieties — AAC Starbuck and AAC Wheatland — in a new VUA pilot project.

SeCan reversed its decision in 2020, citing strained relations with the prairie wheat commissions. The company did not rule out the possibility that VUAs would be attached to other SeCan varieties in the future.

Brooks said the CWRC was not supportive of the VUA pilot project and hasn't endorsed any of the so-called "value creation" options that were being considered by the seed industry.

"We understand that private breeders can commercialize in any fashion that they'd like to but for public varieties that are developed with a significant amount of producer funding, we've always said that they should be viewed through a different lens."

VUAs aside, the new $22.6 million deal comes as a relief to prairie wheat growers who feared that AAFC would eventually reduce its work in developing and commercializing field ready wheat varieties.

AAFC wheat varieties account for the majority of wheat produced in Western Canada every year.

"This is an exciting and historic investment by Prairie wheat farmers," said Todd Hames, chair of the Alberta Wheat Commission.

"Investing collaboratively in this core breeding agreement ensures that farmers will continue to have access to wheat varieties with desirable traits, higher yields and strong disease packages, further enhancing our long-term profitability."

"Manitoba Crop Alliance is proud to be a part of this collaborative initiative with our sister organizations in Alberta and Saskatchewan," added Greig.

"This is an investment that will benefit our western Canadian wheat producers by providing them with competitive new varieties."

FARMER FUNDING ENSURES BRIGHT FUTURE FOR CDC BREEDING PROGRAMS

New core funding agreements provide $12.3 million to CDC wheat and barley programs over the next five years

SPECIAL TO SASKSEED

The Canadian Barley Research Coalition has signed a new core breeding agreement with the University of Saskatchewan's Crop Development Centre.

Under the new deal announced in late 2020, the CRBC will invest $2.7 million of producer check-off dollars over five years.

The money will be used to support CDC efforts to develop new barley varieties with improved agronomic, disease resistance and end-use quality characteristics.

CBRC interim chair Jason Skotheim, who also serves as chair of SaskBarley, said the CBRC was formed so that provincial barley commissions could negotiate core breeding agreements collectively and manage producer check-off dollars more efficiently.

The CBRC consists of the Saskatchewan Barley Development Commission (SaskBarley), Alberta Barley and Manitoba Crop Alliance, formerly known as the Manitoba Wheat and Barley Growers Association.

Its primary purpose is to support barley research and breeding initiatives by investing producer check-off dollars on behalf of prairie barley growers.

The collective approach to investing check-offs eliminates the need for the CDC to meet with the three provincial barley commissions individually. It also supports a more collaborative approach to identifying barley breeding and research priorities, Skotheim said.

"When we initially brought forward the CBRC, this was one of the fundamental reasons — to have one organization that looked after the core (barley) breeding agreements with the CDC and Agriculture and Agri-Food Canada," Skotheim said.

"The agreement with the CDC ensures that western Canadian barley farmers can expect new and improved barley varieties from a world-class, multi-million dollar breeding program over the next five years," he added.

"This investment into the CDC breeding program will produce deliverables that will allow our farmers to stay competitive."

Over the past few decades, CDC barley breeders have developed several outstanding barley varieties for the malting, feed and forage sectors.

One of the ongoing challenges for the Canadian barley industry is to ensure the timely adoption of new and more productive malting barley varieties by maltsters and brewers in Canada and around the world.

Promising malt barley varieties developed by the CDC such as CDC Bow and CDC Fraser are gaining traction among brewers domestically and abroad, but large-scale uptake on new varieties is typically a slow process.

"They (the CDC) have been putting out fantastic new varieties and we need to make sure that they don't lose that capacity," said Skotheim.

"As an industry, we're going to continue working on the other end of the supply chain to see if we can get a faster turn on varieties and hopefully get things to the point where the new varieties they are producing have greater adoption."

The last round of core funding provided by producers to the CDC barley breeding program resulted in the registration of two new malting barley varieties, one new feed variety and one new hulless variety.

CBRC funding over next five years is expected to result in the registration of at least three additional varieties that will deliver major benefits to Western Canadian farmers, the organization said.

The CDC was established nearly 50 years ago and is known for developing high-performing crop varieties that are well-suited for western Canadian growing conditions.

Since 1971, the centre has developed more than 500 new varieties of spring wheat, durum, canaryseed, barley, oats, flax, field peas, lentils, chickpeas, fababeans and dry beans.

Aaron Beattie, chair of Saskatchewan's barley and oat breeding research program, welcomes the new funding. | UNIVERSITY OF SASKATCHEWAN PHOTO

CDC barley breeder Aaron Beattie said producer investments in CDC plant breeding activities have helped create new markets and opportunities for barley growers in Saskatchewan and across Western Canada.

"We are very pleased with the long-term funding from the CBRC and appreciate the confidence they have in our program," Beattie said.

"We look forward to continuing to deliver improved varieties to the Canadian barley industry and providing value to all within the value chain."

Beattie said the new funding agreement with the CBRC represents a significant portion of the barley breeding program's overall budget.

"This is long term funding for us, so it gives us some breathing room and some flexibility to make plans going out a little bit further, which is really key to a breeding program," Beattie said.

CBRC's familiarity with the CDC breeding program and its trust in the program's operations has also resulted in a more flexible approach to fund utilization, Beattie added.

"Working with a farm organization like CRBC, they're very used to dealing with adverse conditions or unusual events so it's good to have someone whose on the same page when it comes to trying to work through a challenging year."

The agreement with the CBRC was the second key funding agreement that was finalized with the CDC in 2020.

Earlier in the year, the Canadian Wheat Research Coalition signed a similar agreement with the CDC, committing $9.6 million over five years to support the development of CDC spring wheat cultivars.

That agreement expanded core support for the CDC's wheat breeding programs, and also included a significant increase in contributions to field-based breeding activities, disease nursery and screening, molecular marker assisted breeding, winter nursery capacity, and end-use quality evaluation.

The CDC will be concentrating on the development of Canadian Western Red Spring, Canadian Western Amber Durum, and Canadian Prairie Spring Red wheat cultivars with improved yield potentials, and greater resistance to diseases such as fusarium head blight and stripe rust, and pests such as the orange wheat blossom midge.

Jason Lenz, a CWRC board member and a director with the Alberta Wheat Commission, said the investment in CDC's wheat program will benefit farmers across the Prairies by developing wheat varieties with improved resistance to pests and diseases along with improved yields.

"The CDC is renowned for their excellence in research and for developing some of the most popular and best-performing varieties available," said Lenz, a former CWRC chairman.

"Farmer-funded wheat breeding has been vital to the continued development of programs and farmers will benefit from their investments with the release of new varieties that can help make their farms more profitable."

Pierre Hucl, a CDC wheat breeder, said the Crop Development Centre looks forward to working with the CWRC in developing new wheat genetics for producers in Western Canada.

"Our 25-year relationship with the Western Grains Research Foundation has been very productive and will provide the momentum to deliver on the ambitious objectives we have developed with the CWRC," Hucl said.

The latest core breeding agreement will be key to ensuring the future successes of the wheat breeding programs at the CDC, he added.

The new wheat agreement represents a significant increase over the previous five-year core funding deal, which was valued at $5.4 million over five years.

CSGA 2.0 INITIATIVE AIMED AT IMPROVING FOR THE FUTURE

With amalgamation now in the rearview mirror, CSGA is seeking feedback on future priorities

SPECIAL TO SASKSEED

If you're a pedigreed seed grower in Canada, you've probably heard by now that the Canadian Seed Growers Association will not be amalgamating with other seed organizations to form a new, all-encompassing seed organization known as Seeds Canada.

CSGA members voted against an amalgamation proposal in August of 2020.

What you might not know is that in the wake of the CSGA members' decision not to pursue Seeds Canada, the CSGA is now moving ahead with a plan to review and modernize itself.

The goal? To improve the CSGA and make sure it continues to function as a sustainable world-class seed certification organization.

In the words of CSGA executive director Glyn Chancey, it's time to look at what the CSGA is, what it's priorities are and what improvements the organization can make — to ensure that it continues to meet the needs of its members and contributes to a strong and vibrant Canadian ag sector.

"It's time to focus on being the best version of the CSGA that we can be," he said.

In a recent interview with *SaskSeed,* Chancey took the opportunity to share his views about the outcome of the Seeds Canada vote and the CSGA's future direction.

Although CSGA members rejected the Seeds Canada amalgamation proposal, the CSGA's board and executive don't intend to stand still and maintain the status quo, he said.

Instead, they are attempting to learn more about the factors behind the CSGA vote and translate those lessons into a stronger organization that's well positioned to address future challenges. After all, there are inevitable changes that are on the horizon, and opportunities as well.

Some of those first challenges and opportunities will emerge during the CFIA's Seed Regulatory Modernization process *(see related story on page 28)*.

"Certainly, when you put all of your efforts into something as momentous as an amalgamation and then it doesn't happen, then clearly it is a bit of a let down," said Chancey.

"There's no question that different members are going to feel differently about the outcome of the amalgamation vote," he added.

"Some will be elated and others will be deflated. But in the months following the vote, I think what the CSGA board has been most pre-occupied with is moving ahead and ensuring that whatever our members are feeling — elation or deflation — that there is a level of comfort and confidence among all members in the future direction of the CSGA."

To that end, the CSGA hasn't wasted any time in rolling up its sleeves and getting down to work.

Almost immediately after the results of the vote were tabulated, the CSGA made a decision to survey its members and find out what they didn't like about the amalgamation proposal.

According to Chancey, the national board felt it was important to have a full understanding of why members voted the way they did, what aspects of the proposal they were uncomfortable with, and what they see as top priorities for the organization going forward.

CSGA has contracted an Ontario-based company, Stratus Research, to conduct the member survey.

That survey was rolled out in December and will provide important grassroots feedback that will be used to shape a new and improved organization, CSGA 2.0.

To Chancey's way of thinking, the vote against amalgamation should be interpreted as a vote in favour of the CSGA.

At the same time, however, there is a consensus among CSGA board members that the status quo is not an option.

"There were certainly a large number of members that voted who felt that this organization (the CSGA) has something that they didn't want to see lost," Chancey said.

"And they obviously didn't feel that the amalgamation proposal that was put forward ... provided enough in the way of assurances that what is special in the CSGA would be retained and carried forward."

"The reason the CSGA board was moving in the direction of an amalgamation was that there were changes the board felt the CSGA needed to be making and that the types of changes that the CSGA's board and members had already identified as priorities could be advanced and perhaps achieved through an amalgamation."

Regardless of what improvements are made at CSGA and how the organization might change, there will always be a recognition that CSGA will need to work closely with industry partners at the Seeds Canada, Chancey added.

In November 2020, the Alberta Seed Growers' Association hosted the interprovincial meeting.

The virtual meeting included provincial branches of the CSGA, including the Saskatchewan Seed Growers Association.

During that event, past CSGA president Jonathan Nyborg, made a presentation on CSGA 2.0, outlining steps that will be taken in the coming months and years.

Among other things, the CSGA intends to build on its strengths, address its weaknesses and continue to pursue certain elements of the Seed Canada proposal for which there is clear member support, CSGA officials said.

Already, the organization has established four CSGA task teams to deal with issues in core areas:

- The Seed Policy and Seed Regulatory Modernization task team will be chaired by CSGA national director Scott Horner, a seed grower from Lethbridge, Alta. This team will study trends and developments in the agriculture and agri-food industry, as well as technology, regulatory policy and public-private partnerships in Canada and other countries. It will review and appraise CSGA's Strategic Plan and the Seed Synergy White Paper, identify gaps in the current seed regulatory system and make recommendations for change.
- The CSGA 2.0 Modernization task team will be chaired by CSGA national director Glenn Logan, a seed grower from Lomond, Alta. This team will make recommendations on how CSGA can improve its value proposition to members as well as the seed sector, and Canadian agriculture and agri-food sectors. It will review issues such as seed certification modernization, technology that supports certification, seed grower accreditations, service offerings, and required changes to policy, regulations, and standards.
- The CSGA 2.0 Modernization Advocacy task team will be chaired by CSGA national director and Quebec seed grower André Lussier from St-Hyacinthe, Que. This task team will look at CSGA's advocacy function. It will identify priorities and develop an advocacy strategy that outlines, among other things, how the CSGA's provincial branches will support a robust national advocacy mandate.
- CSGA 2.0 Target Operating Model task team will be chaired by CSGA past president Jonathan Nyborg, a seed grower from New-Denmark, New Brunswick. Nyborg's team will develop a comprehensive business plan for the organization, including outlines for governance, service, membership, and branch models.

continued on page 26 »»

What's next for CSGA?

A message to seed grower members

FROM THE CSGA NATIONAL BOARD

As most everyone is aware, the Canadian Seed Growers' Association membership voted not to amalgamate with the Canadian Seed Trade Association, the Canadian Seed Institute, the Commercial Seed Analysts Association of Canada, and the Canadian Plant Technology Agency to create a national seeds organization to be called Seeds Canada. So, what does the future hold?

The short answer is that we intend to be proactive in fulfilling our regulatory responsibilities and the needs of our membership. To do that, we believe it is necessary to provide an alternative path to the one that was just rejected. That path starts with listening – really listening – to what our members have told us and what they say as we move forward.

Let's start by looking at how we got to this point.

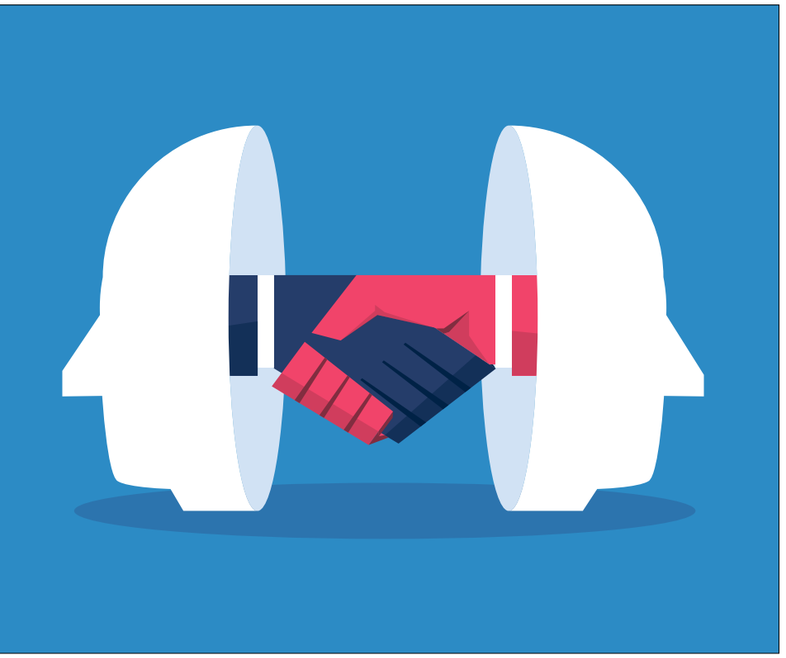
In spring 2020, the Boards of Directors of the five participating associations approved an amalgamation agreement for member ratification. The agreement was the culmination of more than five years of work aimed at strengthening the Canadian seed sector's voice and promoting a common vision and a set of shared policy priorities.

CSGA was the final association to hold its vote, and the results were announced on August 27. By then, each of the four other associations' members had voted in favour of the amalgamation. CSGA's membership voted against amalgamation.

In a letter to members following the vote, CSGA President Joe Rennick noted that the organization faced a fork in the road. It could either "abandon efforts to achieve a consolidation of seed sector organizations and focus on becoming the best version of ourselves possible (CSGA 2.0) or re-engage with our amalgamation partners with a view to reaching a new Seeds Canada agreement with broader member appeal."

In subsequent discussions with the other four associations, the CSTA, CSI, CPTA and CSAAC informed CSGA they would be proceeding with amalgamation, retaining the Seeds Canada name.

continued on page 26



» continued from page 25

It will also identify required changes to by-laws, policies, and procedures.

The task teams will seek participation of the CSGA's national and provincial branch boards, staff, seed grower members and other stakeholders and experts.

By mid-2021, it is expected that the work of these teams will be translated into a comprehensive CSGA vision for the Canadian seed sector and the CSGA's role in it.

A CSGA 2.0 target operating model is expected to be presented for member approval at the organization's next annual general meeting in the summer of 2021.

In recent interview with SaskSeed, CSGA president and Milestone, Sask., grower Joe Rennick described the work on CSGA 2.0 as an effort to improve the current association and to ensure that it's well equipped to deal with the changes and challenges that lie ahead.

"We are trying to make ourselves as good as we possibly can," said Rennick.

"We're a world-class field crop certification body. We're the gold standard that the rest of the world looks at, but there are some areas where we could improve."

Regardless of what happens, CSGA members can be assured that their views have been heard and that the organization will work hard to serve all members, Chancey added.

Member participation has always been a priority at CSGA, and it will continue to be a priority, he said. In fact, CSGA's strong national membership was one of the main factors that attracted Chancey to the organization.

"It's always been about what's best for those folks that put their trust in us," Chancey said.

"They (CSGA members) were given an opportunity to take a position (on the amalgamation proposal) and they sent us a clear message."

"We heard you.... And with CSGA 2.0, I think we've come up with a position that respects the wishes of our members."

Chancey said it's also important to send a signal to CSGA members who stood up in opposition to Seeds Canada.

Members who had the courage to stand in front of the amalgamation freight train should be encouraged and welcomed to participate in the next phase of the CSGA's evolution — the CSGA 2.0 process.

"We felt that the only way we were going to move forward in a constructive way was to send a signal to the people who (opposed amalgamation) ... that their views should be recognized, and not marginalized."

"I think we've listened to both sides. We listened to those who were opposed and we listened to those who were supportive of the amalgamation plan. And we've tried to chart a course that ensures that they can both feel that we will move ahead in a manner that serves everyone."

» continued from page 25

A new Seeds Canada amalgamation agreement has since been ratified by the memberships of the CSTA, CSI, CSAAC and CPTA. The new organization will be up and running in early 2021.

Understanding the reasons behind the CSGA members' "No" vote is vital to the association's strategic direction for 2021 and beyond. Stratus Ag Research has been retained to develop and complete a survey of members' views on the original Seeds Canada proposal.

This will provide the core data required to complete a root cause analysis of the factors that most influenced members' voting decisions and take them into account.

CSGA 2.0 is intended to be our version of the National Seed Organization concept. In our view, it should respond first and foremost to our members' and core stakeholders' clearly stated support for a "single window" pedigreed seed certification service for Canada. It should also identify the path to a stronger voice for seed growers.

How far we can take the single window concept will depend in part on the support we receive from our regulatory and industry partners. The Canadian Food Inspection Agency figures prominently here. They have just initiated the first phase of their long-awaited process to modernize the Seed Regulations, and the CSGA is at the table, but we are not alone. So, effective partnerships and alliances will continue to be key success factors as we advance.

Canada has a world-class pedigreed seed certification system. Enabled by new digital and genetic technologies and supported by a modern regulatory framework designed to serve all Canadian Agriculture, much can be achieved together. CSGA is nimble and has been diligently working on implementing new digital solutions and augmenting security, usability, and accessibility of the system. This work will be accelerated.

The CSGA Board has moved quickly to translate the essence of president Rennick's October, 2020 letter to members into an action plan. It will build on our many strengths and incorporate those elements of the Seed Canada proposal for which there is clear member support. To that end, four CSGA task teams have been established in three core theme areas:

Theme 1: Seed Policy / Seed Regulatory Modernization (Scott Horner, Chair)

Develop an environmental scan of trends and developments in agriculture and agri-food (including technology), regulatory policy and public-private partnerships in Canada and other countries; review and appraise CSGA's Strategic Plan and the Seed Synergy White Paper; and develop an analysis framework of the current seed regulatory system with recommendations for change.

Theme 2A: CSGA 2.0 Modernization (Glenn Logan, Chair)

Recommend how CSGA 2.0 can improve its value proposition to members, the seed industry, and Canadian agriculture and agri-food sectors - today and in the future. Seed certification modernization, technology, seed grower accreditations, service offerings, and required changes to policy, regulations, and standards will be reviewed.

Theme 2B CSGA 2.0 Modernization – Advocacy (Andre Lussier, Chair)

Recommend advocacy priorities and strategy while respecting CSGA's delegated regulatory authority. Define what CSGA advocates for, to whom and how the branches will support a robust advocacy mandate.

Theme 3 CSGA 2.0 Target Operating Model (Jonathan Nyborg, Chair)

Develop a comprehensive CSGA 2.0 Business Plan, including outlines for governance, service, membership, and branch models, along with any required changes to bylaws, policies, and procedures.

The task teams will draw from the CSGA and branch boards, staff members, a diverse cross-section of the CSGA membership, and subject matter experts as required.

In the next six months, the work of these teams will be translated into a comprehensive CSGA vision for the Canadian seed sector and its role in it, and the CSGA 2.0 Target Operating Model for member approval at the next annual general meeting.

We are excited about the possibilities of CSGA 2.0 and the value it can bring to seed growers, seed companies, producers, and Canadian agriculture. Please join us as we move forward together.

CANADA'S SEED REGULATIONS GO UNDER THE MICROSCOPE

SPECIAL TO SASKSEED

Seed regulatory modernization.

If you're a seed grower, you've probably heard about it.

But with a million other chores and priorities to deal with, there's a good chance that you haven't found the time to read about regulatory modernization and figure out what it means to your operation and to the pedigreed seed industry as a whole.

SaskSeed reached out to some of the people involved in the seed regulatory modernization process and asked a few basic questions: What is it? When is it going to happen? What does it hope to accomplish? And why should seed growers and commercial grain growers care?

The seed regulatory modernization process is a federal initiative being led by the Canadian Food Inspection Agency.

The CFIA is responsible for the administration of Canada's Seeds Act as well as the regulations that support the act.

Together, the act and the regulations are aimed at ensuring that seeds sold in Canada — as well as those that are imported into the country and exported out — meet established standards for quality and are clearly labeled so as to ensure proper representation in the marketplace.

The CFIA's seed section is also responsible for registering new varieties in Canada and cancelling variety registrations.

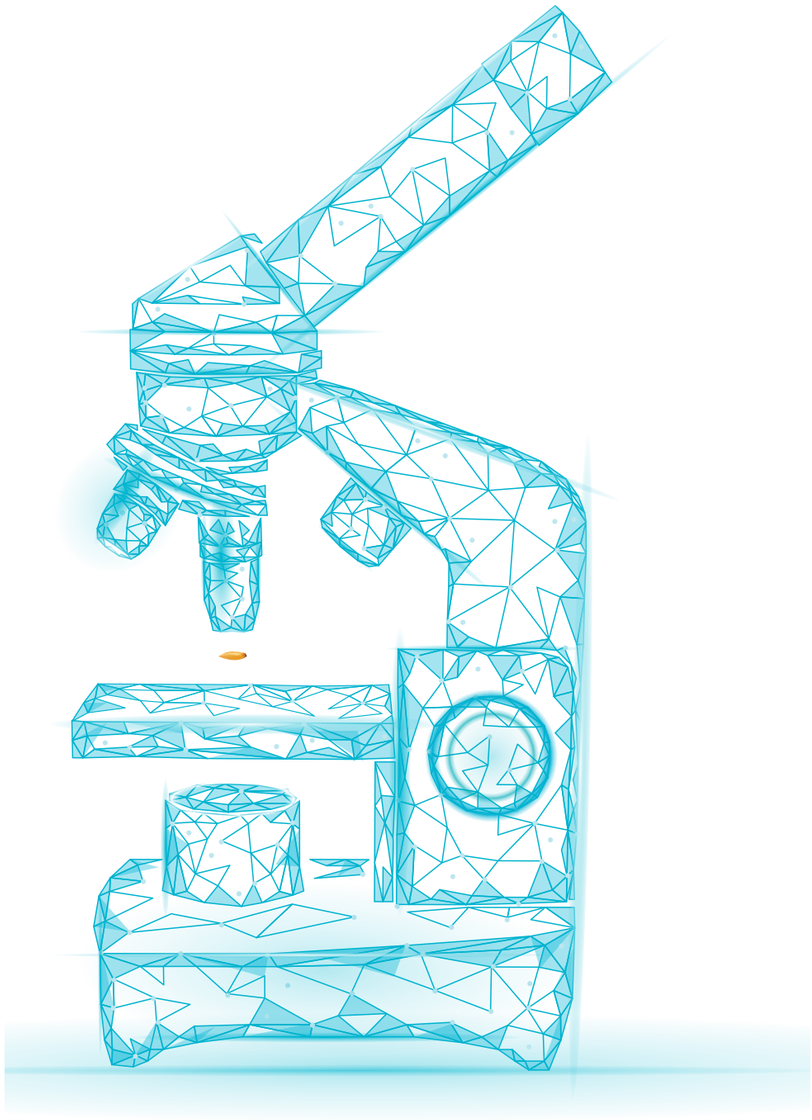
Canada's seed sector has been preparing for the process of reviewing and modernizing the country's seed regulations for some time now.

And in late 2020, the formal modernization process was finally launched.

A Seed Regulatory Modernization working group was formed, brining together a variety of stakeholders in the agriculture industry and the pedigreed seed sector.

The working group will be led by Wendy Jahn, national manager of the CFIA's seed section.

Roy van Wyk, executive director of the Canadian Seed Institute, will serve as the industry co-chair.



In a recent email to *SaskSeed*, Jahn described the seed regulatory modernization process as a multi-year, structured and comprehensive review of Canada's seed regulatory framework.

"The goal for any regulatory modernization process is to improve consistency, reduce complexity and strengthen consumer protection," Jahn said.

"I think with the *Seeds Regulations* we also have an exciting opportunity to give the regulations flexibility to keep pace with advances in the industry as we move forward."

"We will also apply a new authority to the *Seeds Regulations* so that changes can be made more quickly and efficiently, in turn enabling the Seed Program to be more responsive and flexible to meet the needs of stakeholders."

According to Jahn, the ultimate goal of the modernization process is to bolster the *Seeds Regulations* to prevent fraud and ensure the traceability, quality and safety of Canada's seed supply, which is the basis for all agricultural production.

The *Seeds Act and Regulations* have undergone periodic amendments since the first laws were established in 1905. Most changes since then have been in response to specific issues as they have arisen along the way, Jahn said.

"Now it's time to step back and take a holistic look at the regulations to ensure that they meet today's needs," she added.

"We are open to substantive change and support a thorough examination of the role of government in seed regulation. It's an opportune time to look at the seed system and shape it for the future."

"We are currently working with seed stakeholders to co-develop regulatory amendment proposals and recommendations for regulatory change," she continued.

"In September 2020, we began meeting with seed and seed potato stakeholders through the Seed Regulatory Modernization Working Group, which is part of the AAFC value chain round tables. The group includes seed industry, producer associations, full-value chain commodity organizations, public breeders and other interest groups."

According to a recent presentation to the Seed Regulatory Modernization working group, specific task teams will also be established.

The task teams will provide a forum for in-depth discussions on specific topics that are relevant to regulatory modernization and will provide feedback to the SRM working group, which will be ultimately responsible for making regulatory amendment recommendations to the CFIA.

Task teams that report to the SRM working group could deal with issues such as:

- grade tables and seed standards
- common seed
- variety registration and variety certification eligibility
- seed certification and labelling
- oversight of registered seed establishments
- imports and exports of seed
- seed testing laboratories

Van Wyk, the SRM working group's industry co-chair, described the modernization process as a huge opportunity to review Canada's seed regulations, identify areas where changes or improvements could occur, and recommend changes that meet the industry's needs.

"Frankly, I think there is a huge opportunity for industry

continued on page 30 »

» continued from page 29

to take a step back and look at things from a (different perspective," van Wyk said.

With ever-changing priorities at the CFIA and the emergence of new responsibilities, there may be an opportunity for the industry to take on additional responsibilities in areas such as seed certification and variety registration, for example.

Some in the industry believe that the process will result in a greater level of industry self-regulation, a move that would allow the CFIA to direct resources into other priority areas.

Van Wyk said the notion of creating a regulatory system that allows for a greater level of industry self-regulation is already gaining traction in some circles, but he cautioned that the modernization process has only just begun.

"I think that conversation has started in some circles within the industry and there's some thought for sure that that might be an opportunity," he said.

Unlike individuals that are already familiar with seed regulations, others in the value chain such as commercial grain producers and food processors have yet to express their views on self-regulation and perhaps haven't even contemplated the possibilities.

It's also important to remember that the modernization process is committed to transparent and active engagement of all stakeholder groups.

Regardless of individual views or perspectives, there seems to be a consensus that some changes would be beneficial.

"The seed regulations are probably a little bit dated," van Wyk said.

"There's been a lot of changes over the last (few decades) … and I think it's really time to take a look at the seed regulations, to look at CFIA priorities, and to look at the industry and see what can be done to … streamline the processes, simplify things and set up a system so it's a lot easier to deliver services."

"We've got a huge job ahead of us and there's a lot of ground to cover in a short time."

Jahn also acknowledged the desire to seek input and feedback from as many groups as possible.

"There will be several opportunities for engagement, including a needs assessment survey this winter that (SaskSeed) readers are encouraged to participate in," she said.

"And we'll have more opportunities for people to have their say later as well. As we modernize the regulations, it's important to hear from everyone with a stake in them — including farmers, developers, seed dealers, associations, and others."

Regulatory amendment proposals are expected to be published in *Canada Gazette Part I* in fall of 2022. However, that timeframe is subject to change.

> *As we modernize the regulations, it's important to hear from everyone with a stake in them — including farmers, developers, seed dealers, associations and others.*
>
> **WENDY JAHN** | NATIONAL MANAGER — CFIA SEED SECTION

When asked how the modernization process and regulatory amendments are likely to impact a typical pedigreed seed grower or commercial grain farmer, Jahn said ensuring consumer protection is at the heart of the modernization initiative.

"Canada's seed laws help to protect producers from using seed of low quality and from producer / consumer fraud by maintaining or even improving the overall quality and reliability of seed in the marketplace," she said.

"That's why it is so important that we are able to engage producers. Sometimes it's challenging to engage producer organizations. I understand this because I used to work for a producer organization. There are many important issues to deal with (and) because there is no specific seed 'crisis' it's hard for them to direct their limited time and resources towards these regulatory changes."

"However, producers bear the risk of using seed. The *Seeds Regulations* provide them protection from some of the risks associated with that, and therefore producers should have a strong voice in how they are modified.

"The regulatory modernization process is just beginning. This is our collective opportunity to make positive change for the entire system and seed growers are a fundamental part of that system.

"We hope that modernized regulations will reduce unnecessary regulatory burden, provide clarity and flexibility in regulations, and support innovation and changes in science and technology."

"As previously mentioned, it's time to update Canada's seed system so that it supports Canadian agriculture for decades to come."

VUA PLATFORM EXPECTS NEW VARIETAL ENTRIES IN 2021

Value use agreements may become more common as the seed industry looks to generate additional revenues

SPECIAL TO SASKSEED

Canada's federal government is no longer involved in facilitating public discussions about value creation in the pedigreed seed sector. But that doesn't mean that the issue of value creation has been set aside and forgotten.

Work is still continuing to establish a seed royalty collection platform that uses Variety Use Agreements to collect additional royalties on new PBR-protected seed varieties that are purchased by commercial grain growers, planted, harvested and saved for use as seed in subsequent production years.

The VUA pilot project, initially launched in the spring of 2020, is undergoing further development, said Lorne Hadley, executive director of the Canadian Plant Technology Agency.

Additional seed varieties are expected to be entered into the program in the near future.

"The VUA program continues," Hadley told SaskSeed in a recent interview.

"We are continuing to develop the platform and we will be having some new varieties entering the system (in the near future) … along with those that have been in the program since last spring."

"We hope to move to a fully digital platform in the next few weeks."

Variety use agreements are the Canadian seed industry's preferred method of collecting royalties on farm-saved PBR-91 protected seed varieties that are used for replanting.

In essence, the VUA is a legal contract that's signed between a commercial grain farmer who buys a PBR-protected seed variety and the companies involved in developing and commercializing that variety.

The terms of individual VUA contracts may differ from one variety to the next but the purpose of all VUA contracts is essentially the same — to ensure that seed developers have a fair opportunity to collect royalties on farm saved seed and get a fair return on their plant breeding investments.

In Canada, the vast majority of farmers are already accustomed to signing agreements when they purchase new and improved seed products that contain enhanced genetics or proprietary technologies.

Prairie farmers are already accustomed to signing contractual agreements when they purchase new seed. Variety use agreements will enable growers to continue using farm-saved seed through contract terms that have been discussed and agreed upon. | FILE PHOTO

The technical use agreements that are employed by canola seed companies are just one example. Midge tolerant stewardship agreements for varietal wheat blends that contain the Sm1 gene are another.

Supporters of the VUA concept say the collection of royalties on farm-saved seed is critically important to ensuring healthy, productive and properly funded seed development programs.

Additional royalties will allow seed developers to generate a greater return on their investments in plant breeding, variety development and commercialization.

continued on page 34 »

» continued from page 32

It will also allow them to make greater reinvestments in their operations, ensuring that Canadian farmers continue to have access to competitive new crop varieties that contribute to greater on-farm profits.

Hadley has been involved in value creation discussions and the development of a Canadian VUA platform for several years.

He said the VUA platform that's being designed for the Canadian market is intended to make it easier for seed retailers and producers to manage the contracts.

So far, there are five seed varieties entered in the VUA program.

These include:

- **CS Daybreak**, a new CWRS wheat variety developed by Limagrain Cereals Research Canada and distributed in Canada through Canterra Seeds.
- **CS Accelerate**, a new CPSR wheat variety developed by Limagrain Cereals Research Canada and distributed in Canada through Canterra Seeds.
- **DL Delicious,** a new forage field pea variety developed by DL Seeds and distributed by FP Genetics.
- **DL Goldeye**, a new forage field pea variety developed by DL Seeds and distributed by Riddell Seed Company.
- ND17009GT, a glyphosate tolerant soybean variety developed by North Dakota State University and distributed by SeCan.

Companies that enter their varieties into the voluntary VUA program are free to establish their own royalty rates, typically on a per-pound or a per-seeded-acre basis.

Details of the VUA pilot project and the varieties currently entered into the program can be viewed online at https://seedvaluecreation.ca.

In 2020, the VUA pilot project was close to welcoming two additional wheat CWRS varieties to the program.

Publicly developed wheat varieties AAC Wheatland and AAC Starbuck — both distributed through SeCan — were on track to be entered into the program in late 2020 but the varieties were withdrawn after provincial wheat commissions objected to their entry into the system.

Both AAC Wheatland VB and AAC Starbuck VB are high-yielding short-strawed, midge tolerant CWRS varieties that are expected to generate significant farmer interest in Western Canada.

Their entry into the VUA system would have provided a significant boost to the program's establishment.

Todd Hyra, SeCan's business manager for Western Canada, said SeCan remains committed to the program despite the withdrawal of Wheatland and Starbuck.

SeCan will be entering a new malting barley variety into the VUA program in the near future and will consider entering additional products as they become available, Hyra added.

"As new products come along, we'll be continuing to add more," he said.

"We just need to make sure that the breeders are on side and we need to make sure that the VUA platform is going to work. As we continue to learn more, we hope to continue to add more varieties that provide value to farmers (and) accommodate additional investments in plant breeding in Canada."

Meanwhile, seed industry groups are also communicating with producers and producer groups with the goal of increasing awareness and sharing information about the goals and benefits of the VUA program.

Hadley said the Canadian Seed Trade Association will be leading a working group tasked with sharing information, answering questions and dispelling myths that surround the seed industry and VUA agreements in general.

"The CSTA will be leading a discussion group, a working group, with a broad range of industry partners — everyone from farmers to producer groups to other seed sector players. They'll be talking about the issues around VUAs and also trying to put to bed some of the myths about how things operate in the seed sector," said Hadley.

"Those discussion will probably continue in our present schedule for another eight or nine months (until July or August of 2021)."

Discussions will address a variety of issues connected to the use of VUAs and the development of new varieties.

For example, what does variety cancellation mean and how is it accomplished? What percentage of funding do producer groups currently contribute to the creation of publicly developed crop varieties? How will royalty rates be determined for varieties entered into the VUA program? And how does the industry intend to address the issue of royalty slippage?

For example, how can Farmer X, who is paying VUA royalties on a protected variety, be assured that Farmer Y in the next municipality is also playing by the rules?

Hadley said the VUA platform is committed to providing transparent information about royalty rates and ensuring that all farmers who sign VUAs are treated fairly and equally.

Upon signing a value use agreement, a producer is legally obligated to provide information about the amount of farm saved seed that's used for planting, to pay royal-

continued on page 36 »

» continued from page 35

ties that are invoiced through the VUA platform, and, when deemed necessary, to submit to on-farm audits that ensure system compliance.

Compliance audits will only be conducted when there is evidence to suggest that growers are not honouring their contractual obligations.

"These are not going to be random audits but if we see something that suggests we should do an audit, then we're going to audit a producer," Hadley said.

"We don't expect these audits to happen very often but when they do, we expect to conduct them with the highest level of professionalism and respect to the farmer."

VUA auditors will be trained by the CPTA, in consultation with the Canadian Seed Institute.

Hadley said the VUA system is well-suited to Canadian crop production, where the use of contracts is already established and the vast majority of producers have proven their desire to meet their contractual obligations.

"The VUA was developed based on what we know farmers are prepared to do," Hadley said.

"Commercial farmers in Canada are prepared to sign contracts, to make commitments and to abide by them.

"We know through CPTA's experience that more than 90 percent of producers who sign contracts are prepared to abide by them. As long as they know the rules, they're willing to live up to them."

The VUA royalty collection method is also a system that best matches what farmers are doing in their present practices, he said.

For open pollinated crops, most farmer's purchase certified seed, grow it on their farm, and if the variety produces well and meets their expectation, they save seed for future production.

"This is a farmer-choice system," Hadley said. "All we're saying to those farmers now is: 'we respect that you made that choice to plant farm-saved seed, but we want to be paid for the software, for the genetics in that new seed variety'."

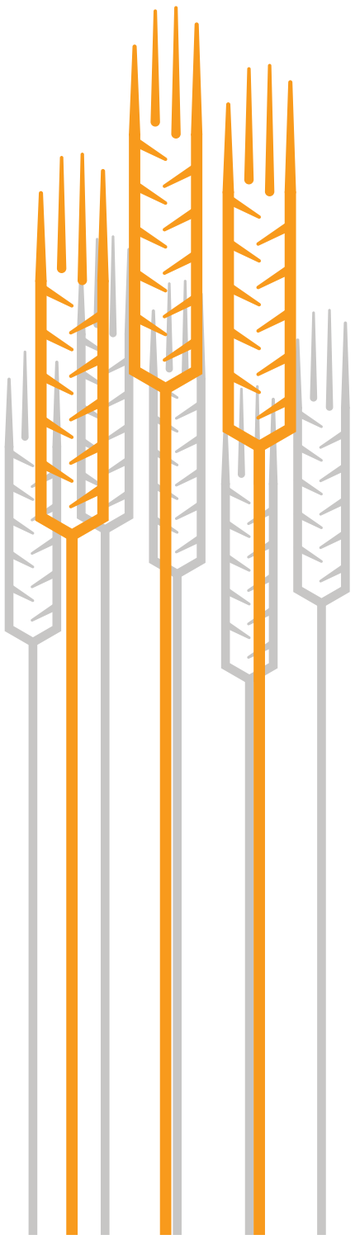
"It's a system that's being used in other parts of the world successfully ... with high rates of compliance."

When asked about the potential entry of publicly developed seed varieties that have been created with up-front financial support from producers, Hadley said the decision on whether publicly funded varieties should be entered into the VUA program rests with the seed developers, not with the CPTA.

"The platform is developed to handle any type of plant breeding — public or private," Hadley said.

"We welcome them. But we don't make the decision which varieties will be entered. The breeders and distributors make those decisions."

WHEAT VARIETIES PULLED FROM VUA PROGRAM



SPECIAL TO SASKSEED

Seed distribution company SeCan has withdrawn two of its most promising new wheat varieties from a seed variety use agreement pilot project but it hasn't closed the door on entering other publicly developed seed varieties in the future.

SeCan officials announced last October that CWRS wheat varieties AAC Wheatland and AAC Starbuck will not be included in the VUA pilot project, which would require commercial grain farmers to pay royalties each time harvested seed is saved for replanting.

SeCan decided to withdraw Wheatland and Starbuck from the pilot project following discussions with the Canadian Wheat Research Coalition, which comprises provincial wheat commissions in Manitoba, Saskatchewan and Alberta.

The CWRC, on behalf of provincial wheat commissions, invests farmer check-off dollars in wheat breeding and wheat research programs. The provincial wheat commissions are opposed to having public seed varieties included in the SVUA pilot.

AAC Wheatland and AAC Starbuck are both publicly funded varieties that were developed by wheat breeders at Agriculture Canada. Both are high-yielding, semi-dwarf, midge tolerant Canadian western red spring wheat varieties that are expected to become popular over the next few years.

"Both Starbuck and Wheatland are very strong products that offered an ideal fit in the (VUA pilot) program. There would have been good grower uptake and they would have been a great fit for the pilot," said SeCan's Western Canadian business manager Todd Hyra.

"But as we neared the launch… the relationship with the commissions was strained. We've had a long-standing, good working relationship with them and it (the decision to include Wheatland and Starbuck in the pilot) was straining that relationship and our ability to move forward in a productive fashion."

Hyra said SeCan and the CWRC have signed a memorandum of understanding in which SeCan will withdraw the two wheat varieties from the VUA pilot project.

The MOU also includes a co-funding agreement that will offset some of the revenue that would have been generated through royalties on farm-saved seed.

Additional details of the MOU were not disclosed.

"What we ended up doing was developing an MOU with the commissions — through the Canadian Wheat Research Coalition — to fund some of the needs that would have been funded through the (VUA) revenue," Hyra said.

The removal of Wheatland and Starbuck from the SVUA pilot is the latest chapter in an ongoing seed-industry discussion about how to generate more revenue from new crop varieties developed in Canada.

A consultation process on "value creation" in the Canadian seed sector ended in disarray in 2019 with producers voicing strong opposition to the collection of any additional seed royalties and seed industry stakeholders insisting that additional revenues are needed to ensure that Canadian wheat breeding programs are properly funded.

When Ottawa signaled in 2019 that it had no intention of continuing the federal "value creation" consultations, stakeholders in the Canadian seed trade pressed forward with a value creation solution of their own.

The VUA pilot project was launched in early 2020 by the Canadian Seed Trade Association and the Canadian Plant Technology Agency.

It was presented as a potential blueprint for a new "value creation" model in which farm-saved seed — seed that's saved by a grower and used for replanting — would be subject to royalties through a value use agreement, or VUA.

Royalties on farm-saved seed would be collected by seed developers or plant breeding institutions and would be available for reinvestment in plant breeding programs.

The investment of additional revenue would ensure that Canadian farmers continue to have access to new and more productive plant varieties with leading genetics, VUA supporters said.

In February 2020, after the VUA pilot project was announced, provincial wheat and barley commissions in Manitoba, Saskatchewan and Alberta issued a strongly worded news release expressing "significant concerns about the Seed Variety Use Agreement pilot project and its future impact on western Canadian wheat and barley producers."

"The five wheat and barley commissions (in Manitoba, Saskatchewan and Alberta) are not a party to, nor supportive of this pilot SVUA program," the joint news release stated.

"The pilot is separate from the federal government's consultation process on a new seed royalty structure and signals the seed industry's commitment to the SVUA model despite the on-going consultation."

The VUA pilot project is still proceeding but the inclusion of so-called public varieties such as AAC Wheatland and AAC Starbuck remains a point of contention.

The pilot project now applies to five new PBR protected seed varieties, including two wheat varieties, two pea varieties and one glyphosate tolerant soybean variety.

The wheat varieties include two Limagrain products — a CWRS variety named CS Daybreak and a Canadian Prairie Spring variety called CS Accelerate. Both wheat varieties will be distributed through the Canterra network.

Officials from CPTA told SaskSeed in late November that additional new varieties will be added to the VUA pilot in the near future.

Another SeCan product, a strong-strawed two-row barley variety registered as Esma, is among the new products that are likely to be entered into the program.

Esma offers high yields and outstanding lodging resistance and is well-suited to growing conditions in Parkland regions that often receive high amounts of rain.

In a 2020 interview, Tom Steve, general manager of the Alberta Wheat Commission, told the Western Producer that the MOU between the CWRC and SeCan was the result of some "good dialogue" between the two parties.

Steve said the commissions believe that publicly developed wheat varieties that have received front-end funding from producers should be viewed through a different lens than privately developed varieties.

"We've stated publicly that we have concerns about treating publicly developed varieties the same (as private varieties) in an SVUA because farmers have already invested a significant amount of money on the front-end," through core breeding agreements, Steve said.

"In the end, we were able to come up with an MOU with SeCan that ensures there will be a continuous flow of funding to new variety development and they (SeCan) have agreed to set aside those two varieties in the pilot while we have a more fulsome discussion on what the future of royalties would look like on public varieties …(from) Ag Canada or the universities for that matter."

EDITOR'S NOTE: A version of this story was published previously in The Western Producer.

SASKATCHEWAN-LED RESEARCH PROJECT PROPELS GLOBAL WHEAT BREEDING EFFORTS

SPECIAL TO SASKSEED

Wheat breeding programs around the world have gained access to a powerful new genomic tool that will allow for the more rapid and accurate development of improved, high-yielding wheat varieties.

In a landmark research project led by the University of Saskatchewan in Saskatoon, an international team of scientists has successfully sequenced the genomes for 15 individual wheat varieties originating from cereal breeding programs around the world.

The new genome maps will enable scientists and breeders to compare genetic resources within the varieties and much more quickly identify influential genes associated with wheat yield, pest resistance and other important crop traits.

The so-called 10+ Genome Project involved nearly 100 international scientists from universities and plant breeding institutes in Canada, Switzerland, Germany, Japan, the United Kingdom, Saudi Arabia, Mexico, Israel, Australia, and the United States.

Research results, which were published recently in the academic journal *Nature*, provide the most comprehensive atlas of wheat genome sequences ever reported.

"This is huge," said project co-leader Curtis Pozniak, a wheat breeder at the University of Saskatchewan's Crop Development Centre.

"Just two years ago, we only had a single wheat genome available. And while that was useful because it was the first blueprint we had, we've now generated and compared multiple wheat genome sequences to help us understand the differences between them."

According to Pozniak, who was recently appointed CDC director, every wheat variety that's been developed contains subtle genetic differences related to important traits such as yield, disease resistance, pest resistance and drought tolerance.

The new study will allow plant scientists to examine these differences in greater detail and select desired genetic traits more quickly and accurately for incorporation into new, more productive and more resilient wheat varieties.

"This resource enables us to more precisely control breeding to increase the rate of wheat improvement for the benefit of farmers and consumers, and meet future food demands," Pozniak said.

The decision on which international wheat varieties would be included in the project was made based on a variety of factors with input from breeders and plant scientists around the world.

Canadian entries included two CDC wheat varieties — CDC Landmark and CDC Stanley, both developed by esteemed CDC wheat breeder Pierre Hucl.

Among other reasons, CDC Landmark was selected because it contains genes associated with stem solidness as well as a valuable gene known as Sm1 which confers tolerance to the orange blossom wheat midge, a potentially costly wheat pest.

The Sm1 gene has already been incorporated successfully into several midge-tolerant wheat varieties in Canada.

Characterizing the gene and mapping its location in the CDC Landmark genome will allow it to be accessed more easily by plant breeders in Canada and elsewhere.

Similarly, valuable genetic resources contained in other international wheat varieties have now been mapped and can be studied and accessed with much greater precision.

The second Canadian variety — CDC Stanley — was selected because it contains unique genetic material derived from a foreign plant species.

"We selected Stanley because it has an alien introgression in it, so it has foreign DNA from a species called A. ventricosa. We were interested in sequencing that variety because to my knowledge, it's the only Canadian wheat variety that carries that introgression," Pozniak said.

"It provides us with an opportunity to look at that DNA and how it was introgressed into modern spring wheat varieties here in Canada."

The genetic introgression in CDC Stanley is known to express improved resistance to wheat diseases, including wheat rusts and other leaf diseases.

In certain environments, it has also been associated with yield bumps in the range of four to 10 percent.

"There's something about that particular introgression that has good disease resistance genes and, at least in some environments, is contributing to a yield benefit," Pozniak said.

All told, the international research project was able to track the presence of unique genetic material derived from a number of foreign plant species described as "undomesticated relatives" of wheat.

DNA from the undomesticated species has been incorporated into domesticated wheat varieties over the past century conferring improved disease and stress resistance in wheat.

Learning more about where these genetic resources are located in individual wheat genomes and how they were incorporated is a significant step forward in efforts to develop new varieties with desired traits.

There are well over 500,000 accessions of wild relatives of wheat that have been collected from around the world.

If the DNA can be stabilized and incorporated, wheat breeders believe they have significant potential to enhance the productive potential of cultivated wheat varieties.

"Genetic diversity is the lifeblood of any breeding program," said Pozniak, when asked about the importance of utilizing DNA from wild wheat relatives.

"We know there are interesting traits (in wild relatives) but it does take time to introgress these traits into cultivated material."

In recent years, there have been rapid advancements in the ability of plant scientists and genomics experts to map the genomes of individual plant varieties.

In 2018, as part of another international consortium, University of Saskatchewan researchers played a key role in decoding the genome for a bread wheat variety known as Chinese Spring.

The Chinese Spring project resulted in the world's first complete wheat genome reference and was hailed at the time as a significant technical milestone.

Shortly after that project was completed, the University of Saskatchewan began sequencing wheat varieties that were developed in Canada and scientists elsewhere began similar work decoding the genomes of varieties that were being grown around the world.

The 10+ Genome project was an effort to coordinate those efforts and ensure a greater levels of collaboration and consistency.

The completed study represents the start of a larger effort to eventually generate unique genome sequences for a larger number of individual wheat varieties and add a new level of precision and efficiency to wheat breeding efforts around the world.

"Given the significant impact of the Chinese Spring reference genome on research and application, it is a major achievement that just two years later, we are providing additional sequence resources that are relevant to wheat improvement programs in many different parts of the world," said project co-leader Nils Stein of the Leibniz Institute of Plant Genetics and Crop Plant Research in Germany.

The 10+ Genome Project was identified as a top research priority by the Wheat Initiative, a co-ordinating body of international wheat researchers.

"This project is an excellent example of co-ordination across leading research groups around the globe," said Peter Langridge, scientific co-ordinator for the Wheat Initiative.

"Essentially every group working in wheat gene discovery, gene analysis and deployment of molecular breeding technologies will use the resource."

Pozniak equated the project's results to finding a missing piece to a complex jigsaw puzzle that plant breeders have been working on for decades.

"Now we have increased the number of wheat genome sequences more than tenfold, enabling us to identify genetic differences between wheat lines that are important for breeding," he said.

"We can now compare and contrast the full complement of the genetic differences that make each variety unique."

"By having many complete gene assemblies available, we can now help solve the huge puzzle that is the massive wheat pan-genome and usher in a new era for wheat discovery and breeding."

Wheat is widely considered one of the world's most important and valuable cultivated cereal crops. The crop provides about 20 percent of total human caloric intake globally.

It's estimated wheat production must increase by more than 50 percent by 2050 to meet increasing global demand.

The University of Saskatchewan team involved in the project also included the paper's first author Sean Walkowiak with the Canadian Grain Commission, computer scientist Carl Gutwin, who developed visualization software and a user-friendly database to compare the genome sequences, and Andrew Sharpe, director of genomics and bioinformatics at the university's Global Institute for Food Security.

Sharpe performed sequencing work through the Omics and Precision Agriculture Laboratory, a state-of-the-art laboratory that provides genomics, phenomics and bioinformatics services.

By 2050, world wheat production must increase by at least

50%

to meet increasing global demand.

AAC SYNERGY BREAKTHROUGH SIGNALS HOPE FOR NEW MALT BARLEY VARIETIES

SPECIAL TO SASKSEED

There may be a light at the end of the tunnel for some of Canada's most promising new malting barley varieties — varieties that are trying to gain market share against long-time industry standbys AC Metcalfe and CDC Copeland.

According to statistics from the Canadian Grain Commission and provincial crop insurance programs in Manitoba, Alberta and Saskatchewan, commercial plantings of malt barley varieties other than Metcalfe and Copeland continued to expand in 2020, albeit at a less-than-optimal pace.

For the first time in decades, a malt barley variety other than Copeland or Metcalfe was listed in 2020 as one of the two most widely grown varieties on the Canadian Prairies.

AAC Synergy, distributed through the Syngenta network, has been gaining Western Canadian acreage for several years now.

In 2020, it became the second most popular malting variety grown in Western Canada, displacing long-time incumbent AAC Metcalfe.

AAC Synergy was planted on more than 565,000 insured malting barley acres last year (23 percent), surpassing AC Metcalfe's 443,000 acres (18 percent).

Once again, CDC Copeland commanded the largest insured prairie acres, with almost 1.1 million acres planted (43 percent).

AAC Synergy's slow but steady climb into the second spot is a cause for celebration among Western Canadian growers and the malting barley industry in general.

AAC Synergy two-row malt barley yields about 120 percent more than industry standard AC Metcalfe and has an improved disease package. The variety has medium maturity and good standability. | MIKE RAINE PHOTO

Those groups have been patiently waiting for signals that the malting and brewing industries are transitioning away from old-school favourites and toward newer barley varieties that offer higher on-farm yields and improved agronomics.

In addition to AAC Synergy, other newer varieties such as AAC Connect (Canterra) and CDC Bow (SeCan) are also gaining ground, providing hope that new malting options are gaining traction among maltsters and brewers, at home and abroad.

Peter Watts, executive director of the Canadian Malting Barley Technical Centre in Winnipeg said the acceptance of new and agronomically improved malt barley varieties was recently identified by the Canadian barley industry as a top priority.

"We've been relying very heavily in the malting barley world on two particular malt barley varieties for the better part of 15 years now — Metcalfe and Copeland," said Watts.

"We've been a little bit of a victim of our own success with those two varieties. We're having difficulty getting end users to accept newer varieties."

"To be fair, AC Metcalfe was one of those remarkable varieties that was able to contribute positively to the malt profiles of many end users, which is one of the things that drove its success."

On the surface, the decision by malt barley producers to grow newer barley varieties that offer higher yields, better standability and improved disease resistance packages would seem like a no-brainer.

continued on page 44 »

SASKATCHEWAN'S TOP INSURED BARLEY VARIETIES

MALTING VARIETIES	2016	2017	2018	2019	2020
CDC Copeland	462,446	436,896	501,344	601,317	555,671
AC Metcalfe	515,744	442,188	453,494	417,271	276,043
AAC Synergy	52,774	53,067	84,721	212,275	266,647
AAC Connect	0	0	3,507	20,304	40,309
Legacy	66,325	54,398	59,894	48,341	37,343
CDC Bow	0	970	3,614	18,967	22,952
CDC Fraser	0	0	0	3,905	12,133
Newdale	20,809	16,391	20,464	16,312	11,556
CDC Platinum Star	0	7,478	14,946	18,327	11,393
Celebration	4,654	3,893	4,970	6,637	3,845

NON-MALTING VARIETIES	2016	2017	2018	2019	2020
CDC Austenson	87,434	68,456	146,971	247,521	266,763
CDC Maverick	4,623	7,995	22,615	32,969	40,352
Claymore	0	0	14,874	26,618	39,259
Champion	43,242	18,166	32,135	31,286	18,264
CDC Cowboy	22,459	9,462	20,675	19,806	13,749
Oreana	0	0	0	6,867	9,846
Ac Rosser	1,757	3,050	4,076	5,568	4,535
CDC Coalition	1,760	780	2,395	4,316	3,943
Xena	11,928	4,108	5,428	6,145	3,684
CDC Mcgwire (Hulless)	5,512	3,840	5,047	2,151	2,714

Source: Canadian Grain Commission / Saskatchewan Crop Insurance Corp.

» continued from page 42

However, growing new and improved varieties is one thing. Finding a reliable market for the grain is quite another.

Recently, industry participants launched an initiative aimed at ensuring a more rapid adoption of new barley varieties by the malting and brewing industries.

Watts is spearheading that effort along with Gina Feist, executive director at the Brewing and Malting Barley Research Institute.

"We've been working to try to develop a plan and to try to bring together a group of end-users to work in this area of new variety acceptance," Watts said.

"It's a complicated process because you're talking with people in the brewing industry who are competitors and there's potentially commercially sensitive information that you're broaching when you start talking about who's using what variety."

Watts said the approach to promoting new variety acceptance has been to start slowly and build momentum.

He and Feist first convened a meeting of Canada's four largest malting companies.

The purpose of the meeting, among other things, was to kickstart a discussion about the importance of new barley variety acceptance and to share information about some of the newer malting varieties that are available in Canada.

"We discussed the new varieties, their merits and tried to get a sense for which varieties were starting to rise to the top among the domestic malting companies," Watts explained.

The next step is to broaden to discussion and bring in additional stakeholders.

The group's next meeting will include industry stakeholders, domestic malting companies, grain companies and some brewers.

"We're bringing in a broader part of the value chain and really, it's to try and have as open a conversation as possible about which varieties are looking promising and which varieties we should be focusing on," Watts said.

In addition to offering higher yield potential and improved agronomics for producers, there is another important reason why the acceptance of new varieties is important to the industry.

Canada's barley breeding capacity may also be at stake.

If Canadian barley breeders continue to churn out promising new barley varieties that fail to gain market traction among end-users, then the economic benefits of developing and commercializing new varieties become muted.

> *It only takes a quick calculation to see that if a new variety has a 10 or 15 percent yield benefit, it's going to make a big difference in terms of farm profitability.*
>
> **PETER WATTS** | EXECUTIVE DIRECTOR, CMBTC

If the seed products developed by Canada's most accomplished barley breeders have limited market uptake, then the return on breeding investments never reaches its full potential.

Watts said maintaining Canada's barley breeding capacity is a critical issue that needs to be considered.

"That's been the challenge," Watts said.

"We're not getting the return on our investments in Canada for these varieties if we're not getting them adopted into the marketplace."

"That's why this is a priority identified by the industry — not only to make sure we're getting the value out of our breeding programs but also to make sure we're getting the most out of the improved varieties."

"If you have these varieties that offer better yields and better disease packages, at the end of the day, that makes you more competitive as an industry. But if we're still using 20-year-old genetics that have lower yields and are susceptible to certain diseases, then you're not getting the benefit out of these new varieties."

"It only takes a quick calculation to see that if a new variety has a 10 or 15 percent yield benefit, it's going to make a big difference in terms of farm profitability."

According to Watts, efforts to speed the rate of varietal turnover in the malting and brewing industry will pay dividends.

But the effort will take time.

Encouraging maltsters and brewers to share commercially sensitive technical information about desired end-use characteristics and technical specifications is an important part of the puzzle.

Improving communication between the various stakeholders in the industry is another key element.

And of course, testing and evaluating the brewing characteristics of Canada's new varieties to make sure they are meeting end-user specifications is also critically important.

CMBTC has been involved in this work since it was established more than 20 years ago.

"The strategy is really about making sure that each of the new varieties that is registered in Canada is evaluated and tested and that the results of those tests are communicated to the end-user," Watts said.

"We also have to encourage (brewers) to test promising new varieties in their own facilities, as much as possible."

In addition to the continued success of AAC Synergy, there are other encouraging signs that some of Canada's best and most productive new malting barley varieties are gaining traction in the domestic and international marketplace.

In 2020, AAC Connect was planted on more than five percent of the commercial barley acres insured in Western Canada, while CDC Bow commanded close to three percent of inured acres.

"CDC Fraser was also planted on more than one and half percent of seeded acres," said Watts.

"So you can see that these varieties are growing in production and we're also starting to see greater acceptance of these varieties, not just by domestic maltsters but also by domestic and international brewers and customers in China."

"We're making progress. It may not be as fast as we'd like to see, but I think we're on the right track."

As always, the CMBTC recommends that malt barley growers talk with their grain company representatives, local elevator operators, malting companies, or seed retailers about malt barley marketing opportunities in their area.

Grower should also refer to the CMBTC's Recommended Malting Barley Varieties table, located in the yellow section of this seed guide.

Growers should also use certified seed to ensure varietal purity, reduce disease incidence and increase the likelihood of selection for malt.

NEW LIST HIGHLIGHTS RECOMMENDED MALTING BARLEY VARIETIES

SPECIAL TO SASKSEED

The Canadian Malting Barley Technical Centre has issued its list of recommended malting barley varieties for the 2021-22 marketing year.

The CMBTC issues an updated version of the list every year.

It identifies Canadian malt barley varieties that hold the most promise for producers in terms of selection and marketability based on current acceptance in the marketplace.

All of the varieties on the list have been pilot tested at the CMBTC and each exhibitst very good malting and brewing characteristics, the centre said.

This year's list of recommended varieties contains not only established varieties such as CDC Copeland, AC Metcalfe and AAC Synergy, but promising newcomers as well, says Peter Watts, managing director of the CMBTC.

"Canada has a suite of new varieties under market development with excellent malting and brewing properties as well as improved agronomics and disease resistance," Watts says.

"Up-and-coming varieties such as AAC Connect, CDC Bow and CDC Fraser are among the next generation of high-quality performers that malting barley producers should consider for seeding in 2021."

The domestic malting industry in Canada has been testing these new varieties over the past several years with positive results.

To gain international acceptance of the new varieties and facilitate uptake, the CMBTC has been working with international customers who are conducting production trials in their brewing facilities.

The list suggests there is growing demand AAC Connect, CDC Bow and CDC Fraser. Recently developed varieties that are undergoing seed propagation and commercial market development include CDC Churchill, CDC Copper and AB BrewNet.

Limited contracting opportunities may also available for barley varieties Bentley, Celebration, CDC Platinum Star, Legacy, Newdale, Tradition, Cerveza and Lowe.

Watts says promising new varieties are gaining traction among commercial brewers.

"AC Metcalfe has been a remarkably successful variety worldwide for over 15 years that helped solidify Canada as a supplier of premium quality malting barley," Watts says. "However improved field performance of new varieties including significantly higher yields, better lodging resistance and improved disease packages, will help Canadian malting barley stay competitive in the global market, while offering excellent malting and brewing attributes for both mainstream and all malt brewers."

Watts says Canadian malt barley producers should speak with their local malting barley buyers to discuss which varieties are best suited for production and selection in their region.

The CMBTC recommends farmers have a production contract, particularly when growing new malting barley varieties.

The centre also recommends that malt barley growers use certified seed to ensure varietal purity and grain quality.

The CMBTC Recommended Malting Barley varieties List for 2020-21 can be viewed in yellow section of this magazine or on-line at bit.ly/3m0vYuP.

The CMBTC is a national, independent, non-profit organization with funding provided by producers, government and members of the malting barley, malt and brewing industries.

The centre conducts applied malting and brewing research, providing technical support to members and customers.

Alberta barley breeding program moving to Olds College

SPECIAL TO SASKSEED

Alberta's Field Crop Development Centre is moving to Olds College in Olds, Alta., a move that will maximize research capacity and create new teaching opportunities the next generation of agriculture industry workers and researchers.

Alberta Agriculture and Forestry will provide a $10.5-million grant over three years to help fund the program's plant breeding efforts at Olds College.

In exchange, the college will take ownership of the program and will provide capacity to support more world-leading research.

Over the years, the FCDC has developed numerous new field crop varieties that were grown by producers in Alberta and throughout Western Canada.

Devin Dreeshen, Alberta's minister for agriculture and forestry, announced the move last October.

"From practical on-farm applications to advanced technical training, the college has helped build modern agriculture in Alberta. Tremendous barley varieties have been developed under Alberta's barley breeding program and a more farmer-focused research program under Olds College, will just make a good thing better."

Barley varieties AB Advantage, AB Wrangler and AB Tofield are among the program's more recent and well known feed barley varieties.

Its malting varieties include AB Lowe and AB Brewnet, which are now used for the growing craft brewing market.

In an October news release, the province described the move as part of the Alberta government's commitment to ensuring that farmers and ranchers — not government — lead agriculture research priorities - not government.

Olds College president Stuart Cullum welcomed the move, saying the college is committed to working with stakeholders to expand capacity in barley and triticale research.

The college is focused on delivering research programming that is centred on the needs of producers and industry partners and we are committed to collaborating with key stakeholders throughout the sector in order to sustainably position and grow barley/triticale research here in Alberta, he said.

Dave Bishop, chair of the Alberta Barley Commission, said the province's barley growers are pleased that Alberta's barley breeding program will be continued.

"Barley is an important crop in Alberta for both the livestock sector and the brewing industry," Bishop said.

The Alberta barley and triticale research program comprises breeding, pathology and biotechnology activities.

PHENOTYPE VERIFICATION:

Retaining the competitive advantage of Canada's pedigreed seed system

SPECIAL TO SASKSEED

Last year, the Canadian government launched its long-awaited Seed Regulatory Modernization, or SRM, initiative.

Referred to by some as a "once in a generation" opportunity, SRM proposes a holistic review of the seed regulatory framework, including seed varietal certification.

In Canada, seed varietal certification assures varietal identity and varietal purity with ancestry traceability, ultimately ensuring that unique plant genetics are properly represented in the marketplace.

In addition to varietal identity and purity, Canadian Certified seed provides officially recognized assurances of minimum germination levels, maximum limits on mechanical impurities like weed seeds, other crop seeds, ergot and sclerotia bodies and crop-specific seedborne diseases such as true loose smut in barley.

Retail surveys consistently confirm the number one reason farmers buy Certified seed is for the genetics — a new 'variety' with improved performance characteristics for their farm.

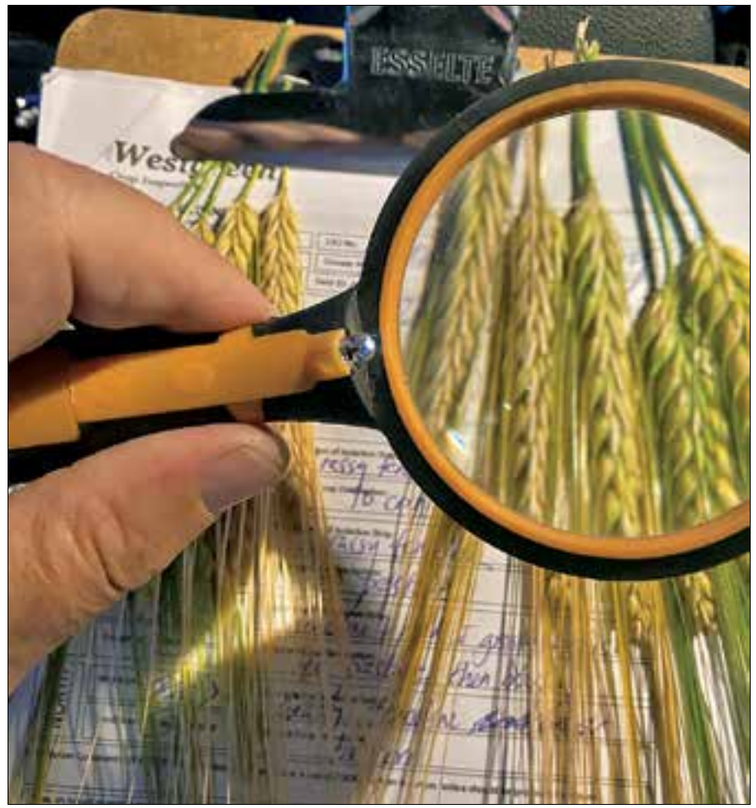
The Canadian Food Inspection Agency is responsible for the overall administration and enforcement of most seed regulatory requirements.

However, the Seeds Act and the Seeds Regulations recognize the CSGA as responsible for seed crop varietal purity standards and certification – the current system's core components.

The CSGA's Canadian Regulations and Procedures for Pedigreed Seed Crop Production, known as Circular 6, establishes the varietal purity standards and production requirements for certification of seed crops in Canada.

Globally, seed certification delivery systems vary from country to country.

Still, the purpose of all such systems is the same: To take a limited amount of Breeder seed and multiply it through several generations while maintaining strict varietal purity standards. In other words, to provide the large quantities of high-quality commercial seed needed for crop production without compromising varietal purity.



While lab-based molecular testing is playing an increasingly beneficial role in Canada's seed certification system, in-field assessments for varietal purity are unlikely to be replaced any time soon. | FILE PHOTO

The principal role of a licensed seed crop inspector or LSCI is to identify and describe varietal off-types that are present in a seed crop.

Off-types are plants that do not conform to the norm of the variety, or, in other words, plants that differ in some way from the majority of the plants in the field.

Circular 6 defines varietal purity standards in terms of the maximum number of off-types permitted in 10,000 plants. The standards for seed crops for Certified status range from five off-types in 10,000 plants (99.95 percent purity) for pulses, to eight off-types in 10,000 plants (99.92 percent purity) for cereals and 30 off-types in 10,000 plants (99.7 percent purity) for soybeans.

In Canada, an officially-recognized seed crop inspector typically performs six "counts" of 10,000 plants.

Each count is taken in a different area of the field so as to ensure that varietal purity is adequately assessed throughout the seed crop.

continued on page 50 »

» continued from page 48

The plants in each count are examined for the presence of off-types and off-types are reported on the seed crop inspection report.

This system provides a robust, statistically sound estimate of the seed crop's overall average varietal purity.

This methodology has been scientifically proven to be robust and reliable across a wide range of field sizes.

A seed variety is defined by its distinguishing characteristics or phenotype.

A phenotype is the expression or interaction of a genotype with its environment.

It includes valuable characteristics like maturity, drought tolerance, disease resistance and insect tolerance that impact yield and field performance.

Consequently, a system that provides reliable assurances of varietal purity and phenotype is valuable to farmers and is one of the main reasons Canada's seed varietal certification system exists.

The advent of increasingly sophisticated and cheaper DNA-based testing techniques has led to increased efforts to explore how molecular testing can be used in seed varietal certification systems.

Work in this area has been ongoing for several decades.

To date, DNA-based testing techniques have been used as a supplement to traditional methods for assuring varietal identity – the examination of the phenotype during crop inspection or in plots for variety verification testing.

However, if molecular testing is ever to become a mainstream component of seed certification systems, a concerted and sustained international effort will be needed to re-engineer the current system.

Monitoring varietal identity and varietal purity is an integral component of Canada's current seed certification system.

However, examining the phenotype can be laborious and time-consuming.

Plants must be grown to a maturity stage when the distinguishing characteristics of the variety can be confirmed. This alone can take months.

If there are doubts about the varietal identity of a seed lot (for example, if a bin has been potentially mislabelled), then a quick determination of varietal identity is critically important.

The Canadian Grain Commission and the CFIA have been collaborating for many years to develop and validate DNA-based molecular techniques to identify varieties of Canada's most important grain crops, starting with wheat.

Today, both organizations and private seed testing laboratories can distinguish the wheat varieties in commercial production in Canada using these methods.

Recent announcements out of Argentina indicated that officially recognized molecular techniques would be used to identify soybean varieties.

There was speculation laboratory-based product testing (genotype verification) could be on the verge of replacing field inspections (phenotype verification).

However, further investigation revealed that these test methods, rather than verifying varietal purity, were intended to verify the genetic identity of grain deliveries for the purposes of collecting seed royalties.

They were also developing a reference collection of soybeans genotypes for variety registration and plant breeders' rights purposes – not for seed varietal certification.

Furthermore, testing a dozen or so seeds to confirm that they all have a similar "DNA fingerprint" matching that of a known variety is one thing.

But, analyzing 100 seeds to be reasonably confident that you have at least 95 percent varietal purity or 400 seeds to have confidence around a 99 percent varietal purity value is a completely different matter.

In other words, it is no replacement for in-field crop examinations.

An examination of 60,000 plants in the field by an experienced seed crop inspector provides a level of confidence and accuracy that discerning Canadian producers and markets expect.

Midge tolerant wheat varietal blends that contain the Sm1 gene are a good example of integrating the traditional seed crop certification process – with its built-in critical control points – and final product testing to confirm the process has been successful.

Before a crop certificate can be issued, the seed grower must submit a seed sample of the harvested crop to a recognized lab for testing.

The lab tests the requisite number of seeds and the results are forwarded to the CSGA.

A direct molecular test for the Sm1 gene that confers tolerance to the orange blossom wheat midge is not yet in widespread use.

For the past 15 years, labs have been able to determine the ratio of the tolerant variety to the refuge (susceptible) variety using well known molecular markers that can distinguish Canadian wheat varieties.

Provided the ratio of varieties is in the acceptable range, the CSGA issues a crop certificate.

It appears that while DNA-based varietal identity testing techniques are useful in seed varietal certification systems, they are not a magic bullet.

Unless producers and markets are comfortable with much lower varietal purity standards, the time-tested process of visual varietal purity inspections for crop inspection and variety verification purposes will likely be with us for some time.

However, as more plant breeders use biochemical and molecular techniques to develop varieties and describe and distinguish their varieties from others, BMTs are likely to play an ever-growing role in seed varietal certification.

*EDITOR'S NOTE: This article was written by Mike Scheffel, CSGA Managing Director, Policy & Standards. It was originally published in **SeedtoSucceed**, the official publication of the Canadian Seed Growers' Association.*

HYBRID MUSTARD HAILED AS INDUSTRY BREAKTHROUGH

SPECIAL TO SASKSEED

The commercial release of Canada's first hybrid mustard variety is being heralded as a ground-breaking development by prairie mustard growers.

The variety, AAC Hybrid Brown 18, was developed by AAFC mustard breeder Bifang Cheng at AAFC's Saskatoon's Research and Development Centre.

It was expected to be planted on nearly 30,000 prairie acres in 2020, roughly 15 to 20 percent of total brown mustard in Western Canada.

"This is a huge opportunity for our growers and our industry," said Rick Mitzel, executive director of the Saskatchewan Mustard Development Commission (SaskMustard) and Mustard21, which represents mustard growers across Canada.

"AAC Hybrid Brown 18 has a 20 percent yield increase compared to open pollinated mustard varieties."

That yield bump will allow Prairie mustard growers to increase per acre returns and capture a larger share of world markets versus competing growers in Europe and other mustard exporting countries, Mitzel said.

As an added bonus, AAC Hybrid Brown 18 has nearly half as much erucic acid as open pollinated brown mustard varieties that are currently grown in Western Canada.

Brown mustards with lower erucic acid are preferred by diners in Europe, where the majority of the world's processed brown mustard is consumed.

Seed size from AAC Hybrid Brown 18 is also larger and more consistent than existing open pollinated varieties, which will make it more appealing to processors.

In Saskatoon, Cheng is also working to develop hybrid lines of yellow and Oriental mustard, which are expected to offer similar yield increases over existing open-pollinated varieties.

In a 2020 interview, Mitzel said the first hybrid Oriental from Cheng's program is just around the corner, while the first hybrid yellow is still a few years away from commercialization.

AAC Hybrid Brown 18 is the first hybrid variety to be commercially available in Canada.

It was grown in limited quantities in 2019 and produced impressive results in Saskatchewan, even under less-than-ideal growing conditions, said Mitzel.

In 2020, seed supplies were more abundant, allowing hybrid brown acreage to increase significantly.

Seed was distributed through Nutrien, Sundwall Seeds in Govan, Sask., and Mercer Seeds in Lethbridge.

Mitzel said the introduction of hybrid mustard varieties in Canada is a ground-breaking development for the industry.

"It's a step up for farmers for sure," he said. "We're seeing some nice yield increases from it — in the range of 20 percent — using the same treatments that growers have been using in the past with the open-pollinated mustards."

continued on page 54 »

» continued from page 52

"What growers are finding too is that it's coming out of the ground faster, they're getting more leaf matter quicker and more root matter quicker. So, it's kind of the same evolution that the industry went through on the canola side, where there was such a big difference between the hybrids and the open pollinated varieties."

"We're expecting that same kind of process to happen in mustard," he continued.

"I think farmers are going to see... a significant enough yield difference that it will certainly take over a big chunk of the market."

Trials are also being conducted in conjunction with Saskatchewan Agriculture to determine if more intensive fertility programs can be used to produce even higher yields.

The 20 percent yield bump associated with AAC Hybrid Brown 18 is based on standard fertility programs that are typically used on open pollinated varieties.

"We want to see what happens if you use even higher fertility levels. Can you push that yield increase even higher than 20 percent?" Mitzel said.

"Our guess is that you can. We started running these trials last year, but you know what the spring was like last year. We didn't end up with really good plots at the end of the day, so there wasn't enough data there to say anything. But we should have a better idea in 2020 if we have better conditions. And we certainly should because at this time last year, guys in that south country were seeding into dry dirt."

Across Western Canada, total mustard plantings typically run in the range of 450,000 to 500,000 acres per year.

Of that, roughly 250,000 acres is sown to yellow varieties, approximately 180,000 acres is sown to brown and roughly 30,000 acres each year is sown to Oriental.

PROTECTING AGAINST ANOTHER WHEAT MIDGE OUTBREAK

Results of annual wheat midge survey due out soon

SPECIAL TO SASKSEED

With the many challenges the world faced in 2020, it's no surprise that orange blossom wheat midge picked last year to show up in full force in fields across the Prairies.

"We actually had the biggest outbreak of wheat midge that I've seen in my short career," said Tyler Wist, research scientist of field crop entomology with Agriculture and Agri-Food Canada in Saskatoon.

"Results of the annual wheat midge survey that comes out in January 2021 will include the data that we need to show a population increase, but the spring rains were perfect for midge development."

Wist said the overall midge population had been decreasing over the past decade in Western Canada, in part, due to dry growing conditions.

Larvae overwinter in the soil in larval cocoons and require adequate moisture in May and June to bring them to the soil surface. Above-average rainfall last spring in some parts of the Prairies made conditions ideal for the pest to thrive.

The Prairie Pest Monitoring Network (www.prairiepest.ca) ran models in mid-August to determine potential numbers of overwintering wheat midge larvae.

Results predicted higher densities of wheat midge compared to 2019. Alberta was also forecast to have greater populations than Saskatchewan and Manitoba.

Though the actual impact will be confirmed once survey data is compiled and analyzed during winter 2020, it's certain some growers will see the effects of wheat midge this harvest.

Orange wheat blossom midge can seriously damage yield and quality of susceptible wheat varieties.

Environmental conditions across much of Western Canada last spring were ideally suited to orange blossom wheat midge development. | FILE PHOTO

In late September, the Canadian Grain Commission confirmed that midge damage was present in the 2020 durum and wheat crops.

In order to assess damage, growers are encouraged to look for rupture of the bran on the back or side of kernels, a white line or mark on the back or side, or a distorted kernel.

As Wist explains, wheat midge larvae damage the wheat kernels by feeding directly upon them as they are developing.

"Typically, four or more larvae per kernel, which is often the number of eggs laid by a female on one floret, will cause a complete shrivelling of the kernel and it will blow out the back of the combine and be lost as 'phantom-yield loss,'" he said.

"Fewer larvae inside a floret, can cause distortion of the kernel, splitting of the bran or simply a white line," he added.

"Too many of these kernels in your sample can cause downgrading because midge-damaged kernels negatively affect the milling performance."

Growers who planted a midge tolerant wheat variety in the spring are less inclined to worry about downgrading at the elevator.

For more than a decade, midge tolerant wheat varieties have been the first line of defence against the pest.

Midge tolerant wheat growers report significant yield and grade benefits valued at approximately $36 per acre. There are now more than 35 MTW varieties available in seven different wheat classes.

Midge tolerance in all varieties originates from a single gene called Sm1, which increases the level of phenolic acids in the wheat kernel and discourages feeding by the pest. As a result, the midge starve and die.

All MTW varieties are sold as a blend of midge tolerant and midge susceptible wheat, providing an "interspersed refuge system" that disrupts the midge's ability to produce resistant offspring and prevents a build-up of a resistant midge population.

As Sm1 is the one and only midge tolerant gene currently available to the industry, growers must do their part to protect the technology.

All growers who grow a midge tolerant variety must first sign a stewardship agreement and commit to maintaining the refuge by limiting the use of farm-saved seed to one generation past certified.

Given the right conditions, such as consecutive wet springs, midge populations can build quickly.

"This year (2020) could be a building year for the midge population…with trouble coming next year (in 2021)," said Wist.

"We'll know better once the midge survey is complete."

In the meantime, as growers plan for the 2021 season, they should carefully assess their risk and consider the benefits of midge tolerant whet varieties.

Purchasing certified midge tolerant wheat and ensuring that stewardship protocols are being followed are solid steps aimed at preventing midge outbreaks and protecting future yields and quality.

A CHAT WITH THE CSGA PRESIDENT

Over the years, pedigreed seed grower Joe Rennick from Milestone, Sask., has held a variety of elected positions at the Saskatchewan Seed Growers Association and the Canadian Seed Growers Association. In 2001 he was elected as an SSGA board member for the first time. In 2007, he served as SSGA president and in 2020 he was named president of the CSGA.

In November 2020, Rennick spoke to *SaskSeed*, answered a few questions and shared some thoughts on the CSGA's future.

JOE RENNICK
CSGA PRESIDENT

Congratulations on being named CSGA president, Joe. And thanks for agreeing to speak with *SaskSeed*.

JR: It's my pleasure.

Tell us about your farming operation.

JR: Our farm is southwest of Milestone, Sask. In our old age we've cut way back but we still seed about 2,200 acres. It's usually a mix of durum, lentils and canola.... This year we tried some yellow mustard ... and in the past we've also grown fenugreek and carinata.

Who long have you been a seed grower and how did your family get started in the pedigreed seed business?

JR: I think we got started in seed growing in the early 1980s. I mean, we'd always used good seed, even before we became seed growers. I remember as a kid going way over to Fillmore, (Sask.,) to see a Select grower we knew, although back then they were called Elite growers. The old boy gave us a bag of some new, new seed ... He said take that home, grow it on a one-acre field ... and then I'll phone you or send you a letter and tell you the name of the variety. It'll be one of the newest varieties out there. So, we always kind of had our hands in the seed industry. We acted like pedigreed seed growers all along, even before were became CSGA members. Everything was clean, clean, clean ... and it was kind of engrained in us document everything and pay attention to keeping things clean and ensuring purity.

Because of that, the transition to becoming a seed grower was pretty smooth. Dad had his own seed cleaning plant and then, when we took over the farm in the late 1970s, we just kind of carried on. We had an old friend of Dad's from Lang, (Sask.,) who was a Select grower and he kept encouraging us. He said: 'You're doing all the right things. Just take it the next step. Apply for field inspection and become a CSGA member.' So that's what we did. He supplied us with some Foundation seed and we made sure we followed all the Circular 6 and field requirements. We were also upgrading the seed plant at the time so we had the CFIA out to audit the seed plant. It seemed like we had all the right stuff in place and we were doing everything correctly so we got a license as a registered seed establishment.

What was your first inspected seed crop?

JR: I think it was Ellis barley. It was supposed to be the one to replace Harrington. It was supposed to be a newer better version of Harrington with a better disease package. We sold a little bit of it but not much.

It was just the wrong time, I guess. If it had come out a few years later, it might have pushed Harrington aside, but at the time Harrington was still pretty popular. Those were interesting times to be a seed grower. You had to phone CFIA to tell them that you had a sale. They'd come out and inspect the customer's truck and seal it.

That was old school. They weren't fussy about bulk sales back then either. That was all new to them. They wanted everything in bags.

When did you start to get involved in the politics of the seed industry? How did you become involved as a board member at SSGA and the CSGA?

JR: This is dating myself but I was sitting in the smoking section of the restaurant at the Saskatoon Inn at the beginning of Crop Production Week and the late Bill Farley and Rick McCarthy waved at me as they walked by.

Later, they sat down, ordered breakfast, and Bill looked me right in the eye and said: 'Rennick, you've been coming to our SSGA meetings long enough, eating our food and drinking our whiskey up in the hospitality suite. It's time you stepped up to the plate and ran as a director for the SSGA." That was 2001 in January and I've been involved ever since.

I served as SSGA president in 2007 and 2008 and then I served as SSGA past president in 2009 and 2010. Later, I sat for six months on the national board as a temporary member (filling a vacancy left when Gerald Girodat became national president). In January 2011, I was finished serving as SSGA past president so I let my name stand for the national board.

What are some of the more beneficial seed products that you've seen come to market — products that have benefited your farm?

JR: Some of the newer durum varieties have done really well for us. The yields are a lot better. Even this year, with the drought conditions we had in this area ... our durum averaged out more than 50 bushels per acre on our farm. And I know there were guys not far from us ... that averaged 80 bushels per acre. With the older varieties, say 20 years ago, we would have only expected a 25 or 30 bushel per acre crop in a year like that. With the disease packages that are available now, and the higher yield potential, the new durum varieties have made a big difference.

How would you describe the direction that the seed industry has gone over the past 40 years?

JR: You can't stop progress (laughing)... Government for years now has been slowly unloading responsibilities. First they didn't want to handle breeder seed because of seed liabilities. Then they didn't want to do the audits because of a lack of inspectors to come out and check the registered seed establishments (RSEs) and take samples.

Now, with Seed Regulatory Modernization ... they are going to unload some more duties. It's just a matter of who they're going to unload it to. We (the CSGA) are trying to make ourselves as good as we possibly can so we can potentially take on some of those additional responsibilities. I mean, we've got 116 years of history being the seed crop certification agency in Canada.

What are your thoughts on CSGA's decision to forego amalgamation with other Seeds Canada?

JR: Even before the negative vote on the amalgamation of the five ... we decided that we should have a Plan B, just in case things went sideways.... We concentrated on Option 1, as we called it, which was the merger of the five, but behind the scenes, we were quietly working on Option 2, which was — in case of a negative vote — a plan on how to move forward by ourselves.

We call it CSGA 2.0 — How to identify our strengths and weaknesses and how to move forward as an organization. There's a survey coming out soon to our growers, to see why our members voted against amalgamation. It's just to get a better understanding from our members.

We know our organization has a lot of strengths and we also know we have a few weaknesses. We're going to try to fix those.

We'll probably take a look at everything from our governance model to our bylaws, to how big our board should be, and what we can by with ... We'll be looking at everything. We're a world-class field crop certification body. We're the gold standard that the rest of the world looks at, but there are some areas where we could improve.

Does the negative vote in the Seeds Canada amalgamation proposal suggest a disconnect between the national association and the priorities of its grassroots members?

JR: We actually flipped that around. We're looking at the vote as a positive thing. The CSGA is the voice of seed growers and with CSGA 2.0, we're trying to make the organization even better and make sure it serves its members even better. So yes, it was a negative vote. The members didn't like the amalgamation proposal. But it also means that they like the CSGA the way it is, or they see ways that it can be improved upon without amalgamating.

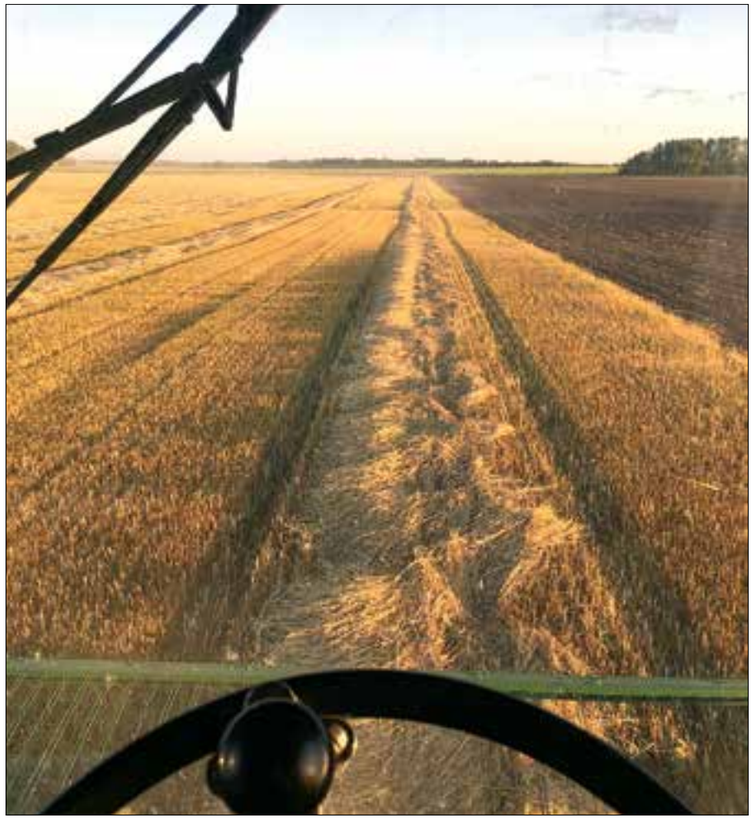
What would you like to accomplish in your term as CSGA president?

JR: I'm not going to solve all the world's problems, or find a cure for COVID on five minutes. I'm just the president. But as far as a goal is concerned, I'd like to see the CSGA 2.0 initiative be remembered as a success story. Same as the modernization of Circular 6 that capped my first vice-presidency. It was a long process but we got it done a year and half ahead of time, thanks to an awesome staff. It (Circular 6 modernization) was a lot of work but we got it done.

Hopefully, the CSGA modernization process will be a similar success story.

PROPER TIMING CRITICAL FOR PRE-HARVEST TREATMENTS

SPECIAL TO SASKSEED



Keep it Clean is reminding Canadian canola, cereal and pulse growers that careful management of pre-harvest glyphosate applications can help to ensure crops meet the needs of our domestic and export customers.

Applying pre-harvest glyphosate too early can result in unacceptable product residues in the grain which can create market risk.

Where allowed, pre-harvest glyphosate should only be applied for weed control once grain moisture is less than 30 percent in the least mature part of the field. Growers are encouraged to consult the Keep it Clean visual staging guides to see examples of various crops at less than 30 percent grain moisture.

Be advised that glyphosate may pose a marketing risk for cereal and pulse crops. Growers should be aware of these considerations for the 2021 growing season:

Wheat and barley

Some customers have contract limitations on pre-harvest application of glyphosate. Growers are advised to talk to their grain buyer to confirm that an application of pre-harvest glyphosate will not cause concern for domestic or export customers.

Oats

Oats may not be accepted if treated with pre-harvest glyphosate – growers must always check with their grain buyer before applying.

Malt barley

Malt barley will not be accepted if treated with pre-harvest glyphosate.

Pulses

Growers are advised to consult with their grain buyer before using pre-harvest glyphosate on pulse crops. Some grain buyers may not accept pulse crops treated with pre-harvest glyphosate due to scrutiny in the global marketplace and low maximum residue limits for some pulse crops in certain major markets.

There are currently no products of concern for canola; however, producers are reminded to follow the guidelines to avoid unacceptable residues.

Keep it Clean recommends the following practices to manage the pre-harvest application of glyphosate for canola, pulses and cereals, with the noted exceptions:

- Glyphosate is registered for pre-harvest weed control and is not to be used as a desiccant.
- Pre-harvest glyphosate should only be applied for weed control once grain moisture is less than 30 percent in the least mature part of the field.
- To avoid unacceptable residue levels, always follow the product's label for application rate, timing and pre-harvest interval.
- Never harvest earlier than recommended. This can increase the risk of excess glyphosate residues in harvested grain.
- When using glyphosate for pre-harvest weed control in a tank mix with other products, such as saflufenacil (e.g. Kixor, Heat), the products must be applied when grain moisture content is less than 30 percent in the least mature part of the field and must also follow the PHI of the most restrictive product label.

On-farm practices make a difference in protecting Canada's reputation as a trusted supplier of high quality canola, cereals and pulses.

For more information on how managing pre-harvest glyphosate applications can help reduce market risk, visit https://keepingitclean.ca/glyphosate.

Cereals-specific staging guides that illustrate the correct stage to receive pre-harvest glyphosate application are available at keepingitclean.ca/cereals/staging-guide.

NRGene opens new Sask. office

SPECIAL TO SASKSEED

NRGene, a leading genomics company based in Israel, is planning to open up a new office in Saskatoon.

The office will serve as NRGene's North American headquarters and will support efforts to expand the company's operations in Canada and the United States.

Kirk Westgard, the assistant deputy minister at the Saskatchewan ministry of trade and export development described NRGene as an advanced genomics and data analytics company capable of reducing the time and cost involved in developing new crop varieties.

The company's presence will help to boost the productivity of farmers and the province's agriculture sector, he said.

"This is one more company that is going to be adding to the great list of companies that we have in Saskatchewan for crop science," Westgard said.

NRGene is already well known among crop scientists in Saskatchewan and throughout the world.

In the past few years, it has worked with North American groups on a number of large genomics projects and has developed relationships with several Canadian organizations including the Crop Development Centre and the Global Institute for Food Security (GIFS) at the University of Saskatchewan, and Agriculture and Agri-Food Canada.

Saskatchewan's Trade and Export Development Minister Jeremy Harrison called the announcement good news for Saskatchewan and said it is a positive sign that the province's investment climate remains strong, despite the challenges posed by the global COVID-19 pandemic.

"NRGene will be a great fit for Saskatchewan's agricultural sciences cluster, bringing good jobs and capacity that will enhance our innovative ag tech and increasing productivity in the agri-food sector," Harrison said in a recent interview.

NRGene provides ready-to-use technologies that support agricultural research in the areas plant breeding and animal husbandry.

The company uses a proprietary genomic database and AI-based platforms to provide some of the world's largest agricultural research organizations with the computational tools they require to improve breeding techniques for agricultural crops and livestock.

Not long ago, the company was involved in an ambitious international project that produced a high-quality genomic sequence for bread wheat.

That project, co-ordinated through the International Wheat Genome Sequencing Consortium, took more than 13 years to complete and involved, more than 200 scientists from 73 research institutions located in 20 countries globally.

The Government of Saskatchewan has been working with NRGene since 2015, when Innovation Saskatchewan first met with NRGene researchers at a workshop and began working on a wheat genomics project aimed at improving the quality and yield of Canadian bread wheat.

Since then, NRGene has collaborated with a number of organizations in the province and has worked on projects involving a wide-range of crops including bread wheat, durum wheat, canola, legumes, mustard, flax and cannabis, among others.

CERTIFIED SEED: IT'S ALL ABOUT QUALITY ASSURANCE

SPECIAL TO SASKSEED

What is the Canadian Seed Growers' Association and what does it do?

For many farmers in Canada, the answers to those two questions are clear.

But to others, familiarity with the CSGA is limited. Perhaps they've heard of the association. But they may not fully understand the organization's critically important role in supporting the production of high quality pedigreed seed across the country.

The CSGA represents 4,500 seed growers across Canada.

Its key role is to provide standards for crop certification, according to Canada's Seeds Act and Regulations.

When farmers buy certified seed, they aren't just buying seed, they are buying an assurance of quality and purity.

It takes several generations for new pedigreed seed varieties to become available for commercial production.

The process begins with registered plant breeders at public breeding institutions and private research companies, where the breeder selects desirable traits for new variety development.

It typically takes several years for the plant breeder to assemble enough breeder seed to begin seed multiplication.

The seed is increased over a regulated number of years, depending on whether the crop is self pollinated or open-pollinated.

Open-pollinated crops are available after fewer years to reduce cross-pollination with nearby off-type varieties.

Certified seed is the last generation, and is available to producers for commercial grain production.

All classes of pedigreed seed are strictly regulated to ensure seed purity is maintained, until it reaches commercial growers.

Seed purity is critically important to the pedigreed seed industry and is maintained with the help of a quality assurance system that is administered and upheld by CSGA, in collaboration with the Canadian Food Inspection Agency and other groups.

Seed purity refers to sample quality with respect to weed seeds, inert material (gravel, chaff, fungal bodies, etc.) and the number of off-type seeds, as defined by the Canada Food Inspection Agency.

Varietal purity of 99 percent must be maintained to be classified as pedigreed seed.

To comply with this stringent quality requirement, there are three stages of pedigreed seed crop production that a successful certified grower must follow.

The first stage is crop production.

During production of pedigreed seed, the land used by pedigreed seed growers must be free from off-type varieties and similar crop types.

As well, pre-determined isolation distances must be maintained.

Minimum isolation distances vary from crop to crop and are in place to reduce the chances of varietal contamination through cross-pollination or other means.

The pedigreed seed crop must be free of prohibited noxious weeds, as outlined in the Weed Seeds Order of the Seeds Act.

The crop must also be free of disease and must be inspected by a licensed seed crop inspector before harvest begins.

If the crop passes inspection, the grower will be issued a crop certificate from CSGA.

To ensure varietal purity and eliminate potential contaminants, seed growers often spend much of their time roguing pedigreed seed crops.

This usually involves walking through the crop, row by row, and manually removing contaminants and off-types by hand.

The second stage in the process is seed storage.

Pedigreed seed growers must carefully harvest, handle, condition, and store the grain to ensure that seed purity and quality is maintained.

Equipment and storage facilities must be thoroughly cleaned, and seed from each field should be stored separately to avoid commingling.

The third stage is grading and inspection.

Grading involves germination testing and overall evaluation of seed lot quality and an assessment of the number of weed seeds and off-type varieties in the harvested seed.

Producers who buy certified seed for planting on their commercial grain farms often ask whether the certified seed they are buying contains seed-borne diseases.

The only diseases specified in The Seeds Act are true loose smut in barley and the presence of ergot or sclerotial bodies.

Common seed-borne diseases such as ascochyta in pulses, anthracnose in lentils, fusarium in cereals, and blackleg in canola are not regulated by the Act, and thus it is buyer-beware for these diseases.

Farmers who buy certified seed are therefore encouraged to ask the seed grower whether a seed disease analysis was conducted by a commercial seed testing laboratory.

If a seed disease analysis was conducted, seed buyers can request a copy of the lab report.

Disease-free seed is always recommended for planting.

The presence of weed seeds is another area of potential concern for pedigreed seed growers and seed buyers.

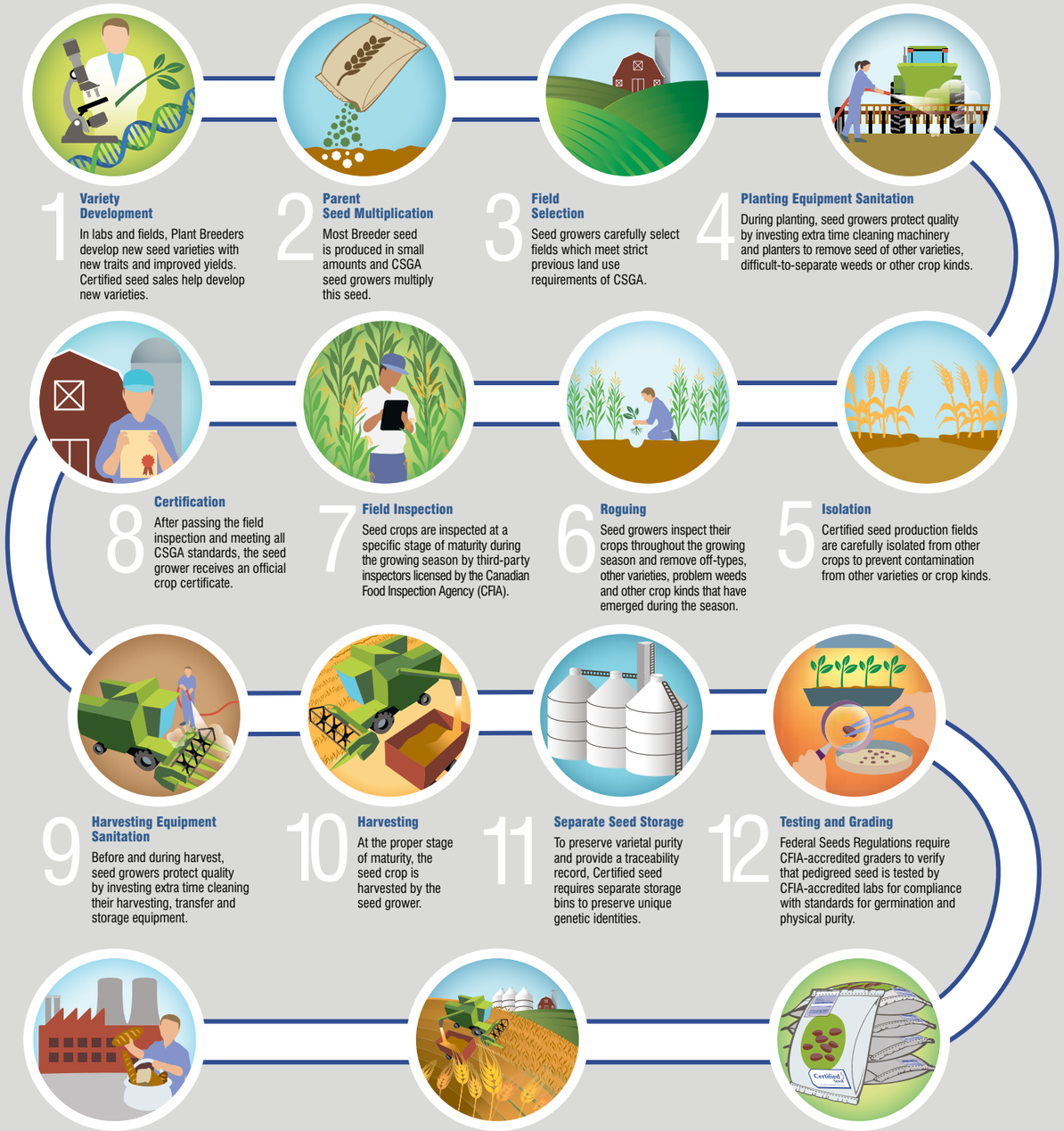
Certified seed is not guaranteed to be free of weed seeds although reputable seed growers will make every effort to ensure the seed they are selling is clean and weed-free.

continued on page 64 »

CSGA Canadian Seed Growers' Association

How is **Certified Seed** Produced?

www.seedgrowers.ca



The Canadian Seed Growers' Association (CSGA) represents seed growers and provides leadership as the organization that certifies the pedigreed seed crop of all agricultural crops in Canada except potatoes.

Certified Seed YOU'RE PLANTING SUCCESS

» continued from page 62

Upon request, seed dealers must provide buyers with a certificate of analysis outlining the species and number of weed seeds present.

At the Breeder, Select and Foundation levels of pedigreed production, there is almost zero tolerance for any weed seed content.

Tolerance levels are slightly higher in the Registered and Certified seed classes.

There are also varying tolerances for the presence of different crop types.

Large seeded crops such as corn, beans and cereals typically have lower tolerances than small seeded crops such as forages, turfgrass or vegetables.

For all crop types, there is zero tolerance for the presence of prohibited noxious weed seeds as outlined in Weed Seeds Order, regardless of the seed's class or pedigree.

In some cases, there may be confusion about noxious weeds that are covered by the Seeds Act (Canada) and noxious weeds that are covered under the Noxious Weeds Act (Saskatchewan).

The weeds covered under these two acts are not the same.

The Seeds Act is administered federally and needs to reflect the needs of the entire country, whereas the Noxious Weeds Act applies to Saskatchewan only.

While many weeds are named as noxious in both Acts, there are some weeds that are found in one Act and not the other.

When buying certified seed, be sure to request a certificate of analysis from suppliers of certified seed to check for noxious weeds that are important to Saskatchewan under the category of other weeds, so that new noxious weeds are not being introduced to land that is clean and free of noxious weed species.

Growers who buy certified seed should always look for the recognizable blue tag when buying certified seed.

The blue tag is an assurance of quality and purity.

When a pedigreed seed crop has successfully passed crop inspection, a CSGA crop certificate is issued, and the resultant certified seed is labeled with an official blue certified tag.

When a producer buys certified seed, it should have an official blue tag, pedigreed documentation (provided from the seller), and a copy of the mechanical purity.

Germination analysis should also be provided.

The widespread usage of genetically modified crops in Canada has caused some export markets to implement a zero tolerance policy for GM seed.

However, it is difficult to maintain varietal purity in open pollinated crops like canola.

The current varietal purity standard for certified canola seed is 99.75 per cent.

This means that in a seeding rate of 100 plants per square metre, one GM canola plant may be found.

How is **Certified Seed** Produced?

1 Variety Development

In laboratories and fields, Plant Breeders work diligently for many years to develop new seed varieties with improved genetics. For farmers, this means improved yields due to better lodging resistance, drought tolerance or insect and disease resistance. For food processors, this relates to innovative characteristics. A portion of the Certified seed sales is reinvested in research to develop new and innovative seed varieties.

2 Parent Seed Multiplication

Breeder seed is usually produced in small amounts, so CSGA seed growers multiply the seed. Accredited CSGA plot growers choose a seed variety to produce in their elite parent seed plots. They reproduce this small amount of seed in accordance with rigorous production certification standards that ensure varietal purity and freedom from impurities. Their Select or Foundation class seed provides the parent seed for other seed growers to produce Registered and Certified class seed crops.

Breeder & Select Plots > Foundation & Registered Seed > Certified Seed > Commercial Grains & Oilseeds

The investment in additional production time means Certified seed growers are committed to producing a proven, quality product.

3 Field Selection

Seed growers carefully select the field in which to produce their crop. Seed growers are required to follow stringent CSGA regulations for previous land use to prevent contamination from other varieties and difficult-to-separate weeds or other crop kinds in their Certified seed crops.

4 Planting Equipment Sanitation

During planting, seed growers protect quality by investing extra time cleaning machinery to ensure no seed of other varieties, difficult-to-separate weeds or other crop kinds are mixed with the seed. When growers change varieties, the entire planter is cleaned to remove all seed of the previous variety.

5 Isolation

Certified seed production fields are carefully isolated from other crops to prevent contamination from other varieties or difficult-to-separate other crop kinds. Seed crop kinds with different types of pollination risks have different isolation requirements. The isolation distance required by CSGA also varies depending on the crop kind in the neighboring field.

6 Roguing

To preserve the purity of Certified seed crops, seed growers inspect their crops throughout the growing season and remove other varieties, off-types, weeds and other crop kinds that have emerged during the season.

7 Field Inspection

Seed crops are inspected at a specific stage of maturity during the growing season by third-party inspectors licensed by the Canadian Food Inspection Agency (CFIA). Inspectors verify isolation distances, previous land use history and parent seed identity. They also complete representative counts throughout the seed field to report impurities such as off-types and other varieties and difficult-to-separate weeds and other crop kinds.

8 Certification

After crop inspection, the inspection report is appraised by the Canadian Seed Growers' Association (CSGA). The CSGA assures the crop has been produced in compliance with its standards. After passing field inspection and meeting CSGA standards, the seed grower receives the official crop certificate that is required for CFIA-Registered Seed Establishments to label seed with official blue Certified tags.

9 Harvesting Equipment Sanitation

Before and during harvest, seed growers protect quality by investing extra time cleaning their harvesting equipment. This prevents common seed, weed or other crop seeds getting mixed with the Certified seed at harvest. When seed growers change fields to harvest a different variety, the entire combine is cleaned to remove all seed of the previous variety harvested.

10 Harvesting

At the proper stage of maturity, the Certified seed crop is harvested by the seed grower.

11 Separate Seed Storage

To preserve varietal purity and provide a traceability record from where the seed was grown all the way to the consumer's table, Certified seed is the first link of an identity preserved (IP) system chain which requires a separate storage bin and records for each variety to preserve its unique genetic identity.

12 Testing and Grading

Federal Seeds Regulations require pedigreed seed sold in Canada to be tested for compliance with official grade standards for germination and physical purity by CFIA-accredited labs and graders and labeled by CFIA-registered seed establishments. The federal standards for germination and physical purity of Certified seed are much higher than common grade seed, which assures a higher quality product. Federal Seeds Regulations prohibit common grade seed from being sold by variety name. Common grade seed is from a crop which has not been certified by the CSGA.

13 Bagging and Tagging

After receiving the official CSGA crop certificate and a certificate of analysis from a CFIA-accredited lab, which verifies compliance with seed germination and physical purity standards in federal Seeds Regulations, Certified seed is packaged and labeled by variety name with an official blue Certified seed tag by a CFIA-registered seed establishment. Only then is the seed designated as Certified seed; only then can agricultural field crop seed be sold by variety name.

14 Commercial Farmer

Certified seed is sold to commercial farmers to plant their large commercial crops of grain and oilseeds. Commercial farmers are choosing Certified seed of a specific variety to get the latest innovation, increased yields, improved disease and lodging resistance. Many commercial farmers work closely with food processors to deliver specific varieties of grains and oilseeds under an identity preservation programs.

15 Food Processor

Food processors who demand grains and oilseeds grown from Certified seed get the assurance of starting with identity-verified ingredient characteristics to ensure consistent, high quality, premium products. They also get documented traceability of their food products right back to the field where the Certified seed was produced. Certified seed is the foundation of quality foods and a promise they can market specific varietal characteristics to today's health conscious and food savvy consumers. Ask for grains and oilseeds grown from Certified seed from your grain handler, miller, crusher, ingredient supplier or food manufacturer.

Plant Breeders' Rights
Fast Facts

Understanding the changes **and your obligations**

As of **February 27, 2015**, all new PBR-protected varieties will be protected under the new legislation that conforms to the UPOV 1991 convention, bringing Canada in line with the rest of the world, and opening opportunities for increased investment to make new varieties available to Canadian farmers. It brings opportunity, but it also brings new obligations for the value chain.

	91	PBR – Progress through Research
Are all varieties protected under the same *Plant Breeders' Rights (PBR) Act*?	As of February 27, 2015, all new varieties submitted for PBR are protected under the new legislation. These varieties carry the PBR 91 symbol.	All varieties granted protection under the PBR prior to February 27, 2015 continue under the original *Act*. These varieties carry the original PBR symbol.
Breeders' rights		
What are **breeders'** rights?	Breeders' rights are now expanded under the new PBR *Act*. Authorization from the breeder is required to produce, reproduce, sell, clean/condition, stock, import or export seed of PBR-protected varieties.	Authorization from the breeder is required to sell, or produce for sale, seed of PBR-protected varieties.
Can **breeders** be compensated on harvested grain?	Yes, if seed was obtained and used illegally or without the authorization of the breeder, the breeder can choose to seek compensation, including for lost royalty revenue; lost markets; and for court costs; on delivered grain produced from that seed.	No

Plant Breeders' Rights
Fast Facts

	91	PBR – Progress through Research
Farmers' privilege		
Can **farmers** save seed?	Yes, the "Farmers' Privilege" is entrenched in the legislation. It allows farmers to produce PBR 91-protected varieties for use as seed on their farms.	It is not spelled out in the legislation, but it is not prohibited.
Can **farmers** clean grain from PBR-protected varieties for use as seed on their farm?	Yes	Yes
Can **farmers** sell or advertise for sale seed they have produced from grain of PBR-protected varieties?	No	No
Can **farmers** exchange seed they have produced from grain of PBR-protected varieties?	No	No
Seed conditioners' and Grain buyers' responsibilities		
Can **seed conditioners** clean seed of a PBR-protected variety for purposes of propagation?	Yes, if the seed was obtained legally (i.e. certified seed was purchased) and if farm-saved seed will only be used on the farmer's own land.	Yes
Do **seed conditioners** have certain responsibilities when cleaning farm-saved seed of a PBR-protected variety?	Yes, expanded breeders' rights mean that cleaners may be liable for breaches of the breeder's right. They should take precautions to ensure the seed they are cleaning was obtained legally, and that farm-saved seed that they clean will only be used on the farm of the farmer who has brought it in for cleaning.	No
Do **grain buyers** have certain responsibilities when handling PBR-protected varieties?	Yes, the harvested material provisions mean that grain buyers may be liable for breaches of the breeder's right. They should be aware of the varieties that are protected under the new legislation and be satisfied that the seed used to produce that grain was legally obtained.	No

Want to learn more about Plant Breeders' Rights?
Visit **pbrfacts.ca**

Prairie Grain Development Committee

The Prairie Grain Development Committee facilitates the exchange of information relevant to the development and commercialization of improved cultivars of grain crops for the Canadian prairies.
In 2020, the committee recommended the following lines for registration:

BARLEY

FB209 — This two-row, hulled forage barley line was developed by breeder A.D. Beattie at the Crop Development Centre, U of S, Saskatoon. Supported for registration by the Prairie Recommending Committee for Oats and Barley (PRCOB).

SR18524 — This six-row, hulled feed and forage barley line was developed by breeder Y.A. Kabeta at the Field Crop Development Centre, Alberta Agriculture and Food. Supported for registration by the PRCOB.

TR14617 — This two-row, hulled, non-glycosidic nitrile (non-GN) malting barley line was developed by P.E. Juskiw at Alberta Agriculture and Food's Field Crop Development Centre. It was granted support for an extension of registration by the PGDC.

TR16929 — This two-row, hulled malting barley line was developed by B.J. Ulmer at Syngenta Canada, Inc. Supported for registration by the PRCOB.

TR17255 — This two-row, hulled malting barley line was developed by A. Badea at Agriculture and Agri-Food Canada's Brandon Research and Development Centre at Brandon, Man. Supported for registration by the PRCOB.

TR17409 'Bill Coors 100' — This is a two-row, hulled malting barley line developed by B. Brunick at the Malting Barley Variety Development Center, Molson Coors. Supported for registration by the PRCOB.

TR18262 — This two-row, hulled general purpose barley line was developed by A. Badea at Agriculture and Agri-Food Canada's Brandon Research and Development Centre at Brandon, Man. Supported for registration by the PRCOB.

TR18645 — This is a two-row, hulled, general purpose barley line developed by P.E. Juskiw at Alberta Agriculture and Food's Field Crop Development Centre. Supported for registration by the PRCOB.

TR18647 (FB494) — This is a two-row, hulled, general purpose / forage barley line developed by P.E. Juskiw at Alberta Agriculture and Food's Field Crop Development Centre. Supported for registration by the PRCOB.

TR18747 — This two-row, hulled, general purpose barley line was proposed by J. Anderson and M. McKay of Nutrien Ag Solutions and Highland Specialty Grains. Supported for registration by the PRCOB.

TR18748 — This two-row, hulled, general purpose barley line was proposed by J. Anderson and M. McKay of Nutrien Ag Solutions and Highland Specialty Grains. Supported for registration by the PRCOB.

TR18749 — This two-row, hulled, general purpose barley line was proposed by J. Anderson and M. McKay of Nutrien Ag Solutions and Highland Specialty Grains. Supported for registration by the PRCOB.

BEANS

4910CBB-2 — This is a navy bean line. It was developed/proposed by Kirstin Bett, at the U of S Crop Development Centre at Saskatoon. Supported for registration by the Prairie Recommending Committee for Pulses & Special Crops (PRCPSC).

4910CBB-6-2 — This is black bean line. It was developed/proposed by Kirstin Bett at the U of S Crop Development Centre at Saskatoon. Supported for registration by the PRCPSC.

CR10875 — This is a cranberry type bean. This line was developed/proposed by Anfu Hou, Agriculture and Agri-Food Canada at Morden, Man. Supported for registration by the PRCPSC.

L15NA044 — This navy bean line was developed by Parthiba Balasubramanian, Agriculture and Agri-Food Canada at the Lethbridge Research and Development Centre at Lethbridge, Alta. Supported for registration by the PRCPSC.

RED DAWN — This is a light kidney bean. It was proposed by Jim Whalen, Treasure Valley Seed Co., of Denver, Colorado. Supported for registration by the PRCPSC.

S09-27C — This navy bean line was developed by Anfu Hou, Agriculture and Agri-Food Canada at Morden, Man. Supported for registration by the PRCPSC.

FABABEANS

951-1-11 — A low tannin fababean line developed by Bert Vandenberg at the U of S Crop Development Centre in Saskatoon. Supported for registration by the PRCPSC.

A01155 — A low tannin fababean line proposed by Bert Vandenberg and KGB Farms, Portland, Oregon. Supported for registration by the PRCPSC.

NPZ 16.7601 — This is a low-tannin fababean line developed / proposed by Glen Hawkins at DL Seeds in Nisku, Alta. Supported for registration by the PRCPSC.

NPZ 16.7610 — This is a low-tannin fababean line developed / proposed by Glen Hawkins at DL Seeds in Nisku, Alta. Supported for registration by the PRCPSC.

NPZ 16.7230 — This is a tannin fababean line developed / proposed by Glen Hawkins at DL Seeds in Nisku, Alta. Supported for registration by the PRCPSC.

RLS57301 (VICTUS) — This is a tannin fababean line developed / proposed by Glen Hawkins at DL Seeds in Nisku, Alta. Supported for registration by the PRCPSC.

LENTILS

5929-1 — This small red lentil line was developed by Bert Vandenberg at the U of S Crop Development Centre in Saskatoon. Supported for registration by the PRCPSC.

IBC 1199 — This large green lentil line was developed by Bert Vandenberg at the U of S Crop Development Centre in Saskatoon. Supported for registration by the PRCPSC.

IBC 1306 — This large red lentil line was developed by Bert Vandenberg at the U of S Crop Development Centre in Saskatoon. Supported for registration by the PRCPSC.

MUSTARD

Y3786 — This yellow mustard line was developed by Agriculture and Agri-Food Canada, Saskatoon. Supported for registration by the Prairie Recommending Committee for Oilseeds (PRCO). The line was granted national registration on Sept. 11, 2020 and will be commercialized as AAC Yellow 80.

PEA

CDC 5151-46 — This green pea line was developed by Tom Warkentin at the U of S Crop Development Centre in Saskatoon. Supported for registration by the PRCPSC.

CDC 5296-2 — This yellow pea line was developed by Tom Warkentin at the U of S Crop Development Centre in Saskatoon. Supported for registration by the PRCPSC.

CDC 5360-4 — This green pea line was developed by Tom Warkentin at the U of S Crop Development Centre in Saskatoon. Supported for registration by the PRCPSC.

P0937-4006 — This yellow pea line was developed by D.J. Bing, Agriculture & Agri-Food Canada, Lacombe, Alta. Supported for registration by the PRCPSC.

P038-4055 — This yellow pea line was developed by D.J. Bing, Agriculture & Agri-Food Canada, Lacombe, Alta. Supported for registration by the PRCPSC.

RYE

RT239 — This hybrid fall rye line, also known by the variety name KWS Serafino, was developed by KWS Lochow in Bergen, Germany. Supported for registration by the Prairie Recommending Committee for Wheat, Rye and Triticale (PRCWRT).

continued on next page »

PGDC VARIETY REGISTRATION RECOMMENDATIONS (CON'T)

RT240 — This hybrid fall rye line, also known by the variety name KWS Trebiano, was developed by KWS Lochow in Bergen, Germany. Supported for registration by the PRCWRT.

TRITICALE

T272 — This is a spring triticale line developed by Alberta Agriculture's Field Crop Development Centre (FCDC). Supported for registration by the PRCWRT.

WT0006 — This is a winter triticale line developed by Alberta Agriculture's FCDC. Supported for registration by the PRCWRT.

WHEAT

BW1069 — A midge tolerant Canada Western Red Spring wheat line containing the Sm1 gene. This cultivar was developed by Agriculture and Agri-Food Canada at the Brandon Research and Development Centre at Brandon, Man. Supported for registration by the PRCWRT.

BW1093, NH032 — A CWRS wheat line developed by Syngenta. Supported for registration by the PRCWRT.

BW5044 — This CWRS wheat line was developed by Agriculture and Agri-Food Canada at the Swift Current Research and Development Centre at Swift Current, Saskatchewan. Supported for registration by the PRCWRT.

BW5045 — This CWRS wheat line was developed by the Crop Development Centre at the University of Saskatchewan in Saskatoon. Supported for registration by the PRCWRT.

BW5047 — A midge tolerant CWRS wheat line containing the Sm1 gene. It was developed by the Crop Development Centre at the University of Saskatchewan in Saskatoon. BW5047 was supported for registration by the PRCWRT.

BW5055 — This CWRS wheat line was developed by Syngenta. Supported for registration by the PRCWRT.

BW5072 — This CWRS wheat line was developed by Limagrain Cereal Research Canada. Supported for registration by the PRCWRT.

CS12200109-14 — This CWRS wheat line was developed by Syngenta. Supported for registration by the PRCWRT.

CSW-15-1273 — This Canada Prairie Spring Red (CPSR) line was developed by Limagrain Cereal Research Canada. Supported for registration by the PRCWRT.

DT897 — This is a Canada Western Amber Durum (CWAD) wheat line developed by Agriculture and Agri-Food Canada at the Swift Current Research and Development Centre at Swift Current, Saskatchewan. It has a solid stem as well as the Sm1 gene, providing resistance to the wheat stem sawfly and the orange blossom wheat midge. Supported for registration by the PRCWRT.

DT1010 — This is a midge resistant CWAD wheat line developed by the Crop Development Centre at the University of Saskatchewan in Saskatoon. This line contains the midge resistant Sm1 gene. Supported for registration by the PRCWRT.

DT1011 — A CWAD wheat line developed by the Crop Development Centre at the University of Saskatchewan in Saskatoon. This line was supported for registration by the PRCWRT.

HW506 — This is a midge tolerant Canada Western Hard White Spring (CWHWS) line developed by Agriculture and Agri-Food Canada at the Lethbridge Research and Development Centre in Lethbridge, Alta. This line contains the Sm1 gene that confers tolerance to the orange blossom wheat midge. Supported for registration by the PRCWRT.

HY2074 — This is a Canada Prairie Spring Red (CPSR) line was developed by Agriculture and Agri-Food Canada at the AAFC Research and Development Centres in Lethbridge and Winnipeg. HY2074 is a semi-dwarf cultivar with an awned spike and a hollow stem. Supported for registration by the PRCWRT.

HY2082 — This CPSR line was developed by the University of Alberta in Edmonton. Supported for registration by the PRCWRT.

PT492 — A midge tolerant CWRS wheat line containing the Sm1 gene. This cultivar was developed by Agriculture and Agri-Food Canada at the Brandon Research and Development Centre at Brandon, Man. Supported for registration by the PRCWRT.

PT5002 — This CWRS wheat line was developed by the Crop Development Centre at the University of Saskatchewan in Saskatoon. It is a midge tolerant line containing the Sm1 gene. Supported for registration by the PRCWRT.

W583 — This CWRW wheat variety was developed by Agriculture and Agri-Food Canada at the Lethbridge Research and Development Centre in Lethbridge, Alta. It is a high yielding line with moderate resistance to fusarium headblight and is considered a suitable replacement for Emerson in the eastern prairie region. Supported for registration by the PRCWRT.

CANADIAN FOOD INSPECTION AGENCY

VARIETY REGISTRATION REPORT

These are the new crop varieties registered by the Canadian Food Inspection Agency between Nov. 1, 2019 and Nov. 15, 2020. The listing also contains the names of varieties that had interim or restricted registrations renewed or extended by the CFIA. Commercial seed for the following varieties may not be available in 2021. This list does not include the names of all newer varieties that were previously registered and will be available to commercial producers for the first time in 2021.

CROP	VARIETY	CANADIAN REPRESENTATIVE	TYPE OF REGISTRATION	REGIONS	NOVEL TRAITS	TRANS-GENE	DERIVED FROM
Alfalfa	54HVX42	Pioneer Hi-Bred	Nat'l		Yes	Yes	J101, KK179
Alfalfa	54Q29	Pioneer Hi-Bred	Nat'l		No		
Alfalfa	54VQ52	Pioneer Hi-Bred	Nat'l		No		
Alfalfa	Ace	BrettYoung Seeds	Nat'l		No		
Alfalfa	Barricade II	BrettYoung Seeds	Nat'l		No		
Alfalfa	Eclipse	Gold Medal Seeds (Forage Genetics Int'l)	Nat'l		No		MON87708, MON89788
Alfalfa	Magnum 8-Wet	La Coop Federée	Nat'l		No		
Alfalfa	Rebound 6Xt	Gold Medal Seeds (Forage Genetics Int'l)	Nat'l		No		
Alfalfa	Reload	BrettYoung Seeds	Nat'l		No		
Alfalfa	Revolver	BrettYoung Seeds	Nat'l		No		
Alfalfa	Supra	Quality Seeds	Nat'l		No		
Alfalfa	Valid II	Quality Seeds	Nat'l		No		
Alfalfa	WL 344HQ	Gold Medal Seeds (Forage Genetics Int'l)	Nat'l		No		MON87708, MON89788
Barley, six-row, spring	AB Tofield	Field Crop Dev. Centre, Alta. Ag	Nat'l		No		
Barley, six-row, spring	Doriane	La Coop Federée	Nat'l		No		
Barley, six-row, spring	Tsunami	Cerela Inc.	Nat'l		No		
Barley, six-row, spring	Waterloo	Cerela Inc.	Nat'l		No		
Barley, two-row, spring	AB BrewNet	Field Crop Dev. Centre, Alta. Ag	Nat'l		No		
Barley, two-row, spring	AB Wrangler	Field Crop Dev. Centre, Alta. Ag	Nat'l		No		
Barley, two-row, spring	CDC Valdres	Crop Dev. Centre, UofS	Nat'l		No		
Barley, two-row, spring	Esma	SeCan Association	Nat'l		No		
Barley, two-row, spring	KWS Kellie	SeCan Association	Nat'l		No		
Barley, two-row, spring	TR16742	Nutrien Ag Solutions Inc.	Nat'l		No		
Bean, cranberry	OAC Firestripe	University Of Guelph	Nat'l		No		
Bean, cranberry	OAC Navabi	University Of Guelph	Nat'l		No		
Bean, navy	Armada	Adm-Seedwest (Paul Paget)	Nat'l		No		
Bean, navy	Rogue	University Of Guelph	Nat'l		No		
Bean, pinto	CDC WM-3	Crop Dev. Centre, UofS	Nat'l		No		
Bean, red kidney	Gallantry	University Of Guelph	Nat'l		No		
Bean, red kidney	OAC Jasper	University Of Guelph	Nat'l		No		
Bean, white kidney	OAC Snowshoe	University Of Guelph	Nat'l		No		
Bean, yellow	CDC Sunburst	Crop Dev. Centre, UofS	Nat'l		No		
Canola, spring, brassica napus, hybrid	17GG0185R	Pioneer Hi-Bred	Nat'l		Yes	Yes	GT73
Canola, spring, brassica napus, hybrid	18GG0448R	Pioneer Hi-Bred	Nat'l		Yes	Yes	GT73
Canola, spring, brassica napus, hybrid	18GG0459R	Pioneer Hi-Bred	Nat'l		Yes	Yes	GT73
Canola, spring, brassica napus, hybrid	18GG0462L	Pioneer Hi-Bred	Nat'l		Yes	Yes	RF3
Canola, spring, brassica napus, hybrid	18GG0489L	Pioneer Hi-Bred	Nat'l		Yes	Yes	RF3
Canola, spring, brassica napus, hybrid	18SG0467L	Pioneer Hi-Bred	Nat'l		Yes	Yes	RF3
Canola, spring, brassica napus, hybrid	18UU2794I	Pioneer Hi-Bred	Nat'l		Yes	Yes	PM1/PM2
Canola, spring, brassica napus, hybrid	45CM44	Pioneer Hi-Bred	Nat'l		Yes	Yes	GT73
Canola, spring, brassica napus, hybrid	9CN0099	BASF Canada, Inc.	Interim		Yes	Yes	RF3, MS8
Canola, spring, brassica napus, hybrid	B1030N	Pioneer Hi-Bred	Nat'l		Yes	Yes	RT273
Canola, spring, brassica napus, hybrid	B2030MN	Pioneer Hi-Bred	Nat'l		Yes	Yes	PM1/PM2
Canola, spring, brassica napus, hybrid	BY 5125CL	DL Seeds Inc.	Nat'l		Yes	Yes	NS1474, IMI tolerant canola
Canola, spring, brassica napus, hybrid	CP21T3P	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON 88302 , PMON52052
Canola, spring, brassica napus, hybrid	CS2700 CL	DL Seeds Inc.	Interim		Yes	Yes	NS1472, IMI tol. Canola
Canola, spring, brassica napus, hybrid	D3158CM	Pioneer Hi-Bred	Nat'l		Yes	Yes	GT73
Canola, spring, brassica napus, hybrid	DKTF 97 CRSC	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON 88302 , PMON 52051
Canola, spring, brassica napus, hybrid	DKTF 99 SC	Monsanto Canada (Bayer CropScience)	Interim		Yes	Yes	MON88302 , PMON52051
Canola, spring, brassica napus, hybrid	H2318	Cargill Limited	Interim		Yes	Yes	MON88302
Canola, spring, brassica napus, hybrid	L340PC	BASF Canada, Inc.	Interim		Yes	Yes	RF3, MS8
Canola, spring, brassica napus, hybrid	L357P	BASF Canada, Inc.	Nat'l		Yes	Yes	RF3, MS8
Canola, spring, brassica napus, hybrid	LR344PC	BASF Canada, Inc.	Nat'l		Yes		MS8/RF3, MON88302
Canola, spring, brassica napus, hybrid	NC355TF	NuSeed (Formerly Seeds 2000)	Interim		Yes	Yes	MON88302
Canola, spring, brassica napus, hybrid	NC401TF	DL Seeds Inc.	Nat'l		Yes	Yes	MON88302
Canola, spring, brassica napus, hybrid	NC471TF	NuSeed (Formerly Seeds 2000)	Interim		Yes	Yes	MON88302
Canola, spring, brassica napus, hybrid	P505MSL	Pioneer Hi-Bred	Nat'l		Yes		MS8/RF3
Canola, spring, brassica napus, hybrid	P506ML	Pioneer Hi-Bred	Nat'l		Yes	Yes	RF3
Canola, spring, brassica napus, hybrid	P508MCL	Pioneer Hi-Bred	Nat'l		Yes		NS1471, NS1473
Canola, spring, brassica napus, hybrid	P607CL	Pioneer Hi-Bred	Nat'l		Yes		NS1471, NS1473
Canola, spring, brassica napus, hybrid	PV 660 LCM	Pioneer Hi-Bred	Nat'l		Yes	Yes	RF3
Canola, spring, brassica napus, hybrid	PV 761 TM	Nutrien Ag Solutions Inc.	Nat'l		Yes	Yes	MON88302 (canola)
Canola, spring, brassica napus, hybrid	V25-3T	Cargill Limited	Interim		Yes	Yes	MON88302
Canola, spring, brassica napus, hybrid	V25-5T	Cargill Limited	Interim		Yes	Yes	MON88302
Canola, winter, brassica napus, hybrid	Mercedes	DL Seeds Inc.	Regional	ON	No		
Clover, red, double cut	AberClaret	BrettYoung Seeds	Nat'l		No		
Fescue, meadow	Raskila	Imperial Seed (1979)	Nat'l		No		
Fescue, meadow	Tenero	DL Seeds Inc.	Nat'l		No		
Fescue, meadow	Tetrax	DL Seeds Inc.	Nat'l		No		
Fescue, tall	Aprilia	BrettYoung Seeds	Nat'l		No		
Fescue, tall	Elodie	Imperial Seed (1979)	Nat'l		No		
Lentil	CDC Grimm	Saskatchewan Pulse Growers	Nat'l		Yes		RH44
Lentil	CDC Imerald	Saskatchewan Pulse Growers	Nat'l		No		
Lentil	CDC Jimini	Saskatchewan Pulse Growers	Nat'l		No		
Lentil	CDC Karim	Saskatchewan Pulse Growers	Nat'l		No		
Lentil	CDC Pilgrim	Saskatchewan Pulse Growers	Nat'l		No		
Lentil	CDC Simmie	Saskatchewan Pulse Growers	Nat'l		No		
Lentil	CDC Sublime	Saskatchewan Pulse Growers	Nat'l		No		
Mustard,sinapis alba l., white	AAC Yellow 80	AAFC	Nat'l		No		
Oat, spring	AAC Douglas	AAFC	Nat'l		No		
Oat, spring, hulless	Alka	La Coop Federée	Nat'l		No		
Oat, spring, hulless	ORE Level48	Oat Advantage	Nat'l		No		
Oat, spring, hulless	ORE Level50	Oat Advantage	Nat'l		No		
Orchardgrass	Beluga	Imperial Seed (1979)	Nat'l		No		
Potato	AAC Intrepid Russet	AAFC	Nat'l		No		
Potato	AAC Mimosa	AAFC	Nat'l		No		
Potato	Alegria	Global Agri Services Inc.	Nat'l		No		
Potato	Allora	Global Agri Services Inc.	Nat'l		No		
Potato	Althea	HZPC Americas Corp.	Nat'l		No		
Potato	Apache	Real Potatoes	Nat'l		No		
Potato	Autumn Rose	Solanum Int'l Inc.	Nat'l		No		
Potato	Ballerina	Parkland Seed Potatoes	Nat'l		No		
Potato	Carminelle	HZPC Americas Corp.	Nat'l		No		
Potato	Castle Russet	Global Agri Services Inc.	Nat'l		No		
Potato	Dakota Trailblazer	McCain Produce Inc	Nat'l		No		
Potato	Echo Russet	Global Agri Services Inc.	Nat'l		No		
Potato	Eileen	HZPC Americas Corp.	Nat'l		No		

VARIETY REGISTRATION REPORT (CONTINUED)

CROP	VARIETY	CANADIAN REPRESENTATIVE	TYPE OF REGISTRATION	REGIONS	NOVEL TRAITS	TRANS-GENE	DERIVED FROM
Potato	Fioretta	Global Agri Services Inc.	Nat'l		No		
Potato	FL2512	PepsiCo Foods Canada	Nat'l		No		
Potato	Fraser Russet	Pacific Potato Corp.	Nat'l		No		
Potato	Gala	Global Agri Services Inc.	Nat'l		No		
Potato	Golden Globe	Global Agri Services Inc.	Nat'l		No		
Potato	Imagine	Global Agri Services Inc.	Nat'l		No		
Potato	La Belle Russet	Global Agri Services Inc.	Nat'l		No		
Potato	Libero	Parkland Seed Potatoes	Nat'l		No		
Potato	Lilly	Global Agri Services Inc.	Nat'l		No		
Potato	Maggie	HZPC Americas Corp.	Nat'l		No		
Potato	Monica Russet	HZPC Americas Corp.	Nat'l		No		
Potato	Moonlight	Real Potatoes	Nat'l		No		
Potato	Norland RP	Real Potatoes	Nat'l		No		
Potato	Noya	Solanum Int'l Inc.	Nat'l		No		
Potato	Paroli	Global Agri Services Inc.	Nat'l		No		
Potato	Pee Wee Russet	HZPC Americas Corp.	Nat'l		No		
Potato	Picobello	Real Potatoes	Nat'l		No		
Potato	Reveille Russet	Global Agri Services Inc.	Nat'l		No		
Potato	River Russet	Solanum Int'l Inc.	Nat'l		No		
Potato	Rosi	HZPC Americas Corp.	Nat'l		No		
Potato	Sally	HZPC Americas Corp.	Nat'l		No		
Potato	Silverado	HZPC Americas Corp.	Nat'l		No		
Potato	Silverton Russet	Canadian Eastern Growers Inc	Nat'l		No		
Potato	Snow Finger	Solanum Int'l Inc.	Nat'l		No		
Potato	Soraya	Global Agri Services Inc.	Nat'l		No		
Potato	SP327	Sunrise Potato Storage Ltd	Nat'l		No		
Potato	Tessa	Global Agri Services Inc.	Nat'l		No		
Potato	Tyson	HZPC Americas Corp.	Nat'l		No		
Potato	Waterloo	HZPC Americas Corp.	Nat'l		No		
Potato	Wendy	Global Agri Services Inc.	Nat'l		No		
Rye, winter	KWS Trebiano	FP Genetics Inc.	Interim		No		
Rye, winter, hybrid	KWS Serafino	Seednet Inc.	Nat'l		No		
Ryegrass, perennial (forage type)	Tribal	BrettYoung Seeds	Nat'l		No		
Soybean, oilseed	70391206	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	84380724	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	86052115	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	86160724	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	87161800	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	87230016	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	5PLER67	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	5PLYD55	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	AAC Kovik	AAFC	Nat'l		No		
Soybean, oilseed	Albenga	C & M Seeds	Nat'l		No		
Soybean, oilseed	Arabella	C & M Seeds	Nat'l		No		
Soybean, oilseed	Asahi	Synagri Company	Nat'l		No		
Soybean, oilseed	Asana	Semences Prograin Inc.	Nat'l		No		
Soybean, oilseed	Aurelina	C & M Seeds	Nat'l		No		
Soybean, oilseed	B063UX	Pioneer Hi-Bred	Nat'l		Yes	Yes	MON 87708 , MON89788
Soybean, oilseed	Bronco R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Compass E3	Horizon Seeds	Nat'l		Yes	Yes	DAS 44406-6

CROP	VARIETY	CANADIAN REPRESENTATIVE	TYPE OF REGISTRATION	REGIONS	NOVEL TRAITS	TRANS-GENE	DERIVED FROM
Soybean, oilseed	CP000620RX	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	CP00120RX	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	CP00929E	Land O'Lakes	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	CP0520RX	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	CP0620RX	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	CP1220RX	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	CP1620E	Winfield Solution LLC (Land O'Lakes)	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	CP2220E	Winfield Solution LLC (Land O'Lakes)	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	CP2320RX	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	CP2521E	Winfield Solution LLC (Land O'Lakes)	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Curve E3	Horizon Seeds	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	DKB00-20	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB0003-24	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB0008-87	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB003-95	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB008-48	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB008-72	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB04-04	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB06-39	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB08-98	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	DKB11-51	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	DKB19-80	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	DKB23-40	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	DKB26-18	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	Enyo E3	Semences Prograin Inc.	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	EXP00520XR	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	EXP0420XRN	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	EXP1520XRN	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	EXP2120ERN	Pride Seeds/Agreliant Genetics Inc.	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	EXP2720ERN	Pride Seeds/Agreliant Genetics Inc.	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Francis E3	SeCan Association	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Halo R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Harrier E3	La Coop Federée	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Hart R2X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	Inferno R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Kagawa	Synagri Company	Nat'l		No		
Soybean, oilseed	Kites E3	La Coop Federée	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Liska	Semences Prograin Inc.	Nat'l		No		
Soybean, oilseed	LS 10E125N	Legend Seeds	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Major R2X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	MAO R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Maya	Semences Prograin Inc.	Nat'l		No		
Soybean, oilseed	Mikado R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON 87988 , MON87708
Soybean, oilseed	Mirabel	Sevita Int'l	Nat'l		No		
Soybean, oilseed	Mynarski R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON 87708 , MON 89788
Soybean, oilseed	MZEXP20-07	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	MZEXP20-17	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	MZEXP20-18	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	NANO R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Nara	Semences Prograin Inc.	Nat'l		No		
Soybean, oilseed	ND17009GT	SeCan Association	Nat'l		Yes	Yes	GTS40-3-2 glyphosate tol. soy
Soybean, oilseed	NEO R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	NSC EXP0004X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788
Soybean, oilseed	NSC EXP0007X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708, MON89788

VARIETY REGISTRATION REPORT (CONTINUED)

CROP	VARIETY	CANADIAN REPRESENTATIVE	TYPE OF REGISTRATION	REGIONS	NOVEL TRAITS	TRANS-GENE	DERIVED FROM
Soybean, oilseed	NSC EXP002E	Northstar Genetics Canada	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	NSC EXP004X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	OAC Candy	University Of Guelph	Nat'l		No		
Soybean, oilseed	OAC Dunkel	University Of Guelph	Nat'l		No		
Soybean, oilseed	OAC Glaze	University Of Guelph	Nat'l		No		
Soybean, oilseed	Osprey E3	La Coop Federée	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	OT34673116	Pioneer Hi-Bred	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	P07A18X	Pioneer Hi-Bred	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	P16A84X	Pioneer Hi-Bred	Nat'l		Yes	Yes	MON87708 , MON89788
Soybean, oilseed	PV 20s0006 R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	PV 21s0008 R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON 87708 , MON89788
Soybean, oilseed	PV 22s002 R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	PV 23s004 R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	S0009-F2X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S001-D8X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S005-C9X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S007-A2XS	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S007-Z1X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S04-J6X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S04-K9	Syngenta Canada Inc.	Nat'l		No		
Soybean, oilseed	S12-M5X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S16-K2X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	S20-E3	Syngenta Canada Inc.	Nat'l		Yes		
Soybean, oilseed	S21-C6	Syngenta Canada Inc.	Nat'l		No		
Soybean, oilseed	S25-P2	Syngenta Canada Inc.	Nat'l		No		
Soybean, oilseed	S26-E3	Syngenta Canada Inc.	Nat'l		Yes		
Soybean, oilseed	S28-2E3	Syngenta Canada Inc.	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Savard E3	SeCan Association	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	Shikra E3	La Coop Federée	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	SI 000919XT	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	SI 000920XT	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON 89788 , MON87708
Soybean, oilseed	SI 00820XTN	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	SI 0120XTN	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	SI 0220XT	Semences Prograin Inc.	Nat'l		Yes	Yes	MON 87708 , MON89788
Soybean, oilseed	SI 0320XTN	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	SI 0520E3	Sevita Int'l	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	SI 0620XTN	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	SI 0720E3N	Sevita Int'l	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	SI 1120E3N	Sevita Int'l	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	SI 1520E3N	Sevita Int'l	Nat'l		Yes	Yes	DAS 44406-6
Soybean, oilseed	SI 1820XTN	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Stingray R2X	Syngenta Canada Inc.	Nat'l		Yes	Yes	MON89788, MON87708
Soybean, oilseed	Suwa	Synagri Company	Nat'l		No		
Soybean, oilseed	Taku	Ceresco	Nat'l		No		
Soybean, oilseed	TH71001E	Thunder Seed Canada Inc.	Nat'l		Yes	Yes	DAS 4406-6
Soybean, oilseed	TH81007 R2XN	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Triquet R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87707, MON89788
Soybean, oilseed	XB003H19X	Pioneer Hi-Bred	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	XB004L19X	Pioneer Hi-Bred	Nat'l		Yes	Yes	MON87708 / MON89788
Soybean, oilseed	Young R2X	Monsanto Canada (Bayer CropScience)	Nat'l		Yes	Yes	MON87708 / MON89788
Sunflower, hybrid, non-oilseed	N4H302 E	Hildebrand, Philip	Nat'l		Yes	Yes	ExpressSun
Timothy	Barfleo	Union Forage	Nat'l		No		
Triticale, spring	AB Stampeder	Field Crop Dev. Centre, Alta. Ag	Nat'l		No		
Wheat, durum	CDC Flare	Crop Dev. Centre, UofS	Regional	BC, AB, SK, MB	Yes		DW012 - DD2007 - 64
Wheat, spring	AAC Hodge	AAFC	Regional	BC, AB, SK, MB	No		
Wheat, spring	AAC Redstar	AAFC	Regional	BC, AB, SK, MB	No		
Wheat, spring	AAC Volta	AAFC	Regional	QB	No		
Wheat, spring	Atys	Cerela Inc.	Regional	QC	No		
Wheat, spring	CDC SKRush	Crop Dev. Centre, UofS	Regional	BC, AB, SK, MB	No		
Wheat, spring	Coralia	La Coop Federée	Regional	QB, NB, NS, PE, NL	No		MON87708 / MON89788
Wheat, spring	Noor	UofA, Faculty of Ag	Regional	BC, AB, SK, MB	No		
Wheat, spring	Shelly	Seed Depot Corp.	Regional	BC, AB, SK, MB	No		
Wheat, spring	Sibia	La Coop Federée	Regional		No		MON87708 / MON89788
Wheat, spring	SY Brawn	Syngenta Canada Inc.	Regional	BC, AB, SK, MB	No		
Wheat, spring	SY Cast	Syngenta Canada Inc.	Regional	BC, AB, SK, MB	No		
Wheat, spring	SY Crossite	Syngenta Canada Inc.	Regional	BC, AB, SK, MB	No		
Wheat, spring	SY Natron	Syngenta Canada Inc.	Regional	BC, AB, SK, MB	No		
Wheat, spring	SY Rorke	Syngenta Canada Inc.	Regional	BC, AB, SK, MB	No		
Wheat, winter	AAC Network	AAFC	Regional	BC, AB, SK, MB	No		
Wheat, winter	OAC Constellation	University Of Guelph	Regional		No		

AGRICULTURE CANADA 2020 VARIETY REQUEST FOR PROPOSALS

Agriculture and Agri-Food Canada would like to thank the companies that submitted proposals to commercialize pedigreed seed of AAFC varieties under the 2020 Request for Proposal.

Based upon marketing and production strategies, marketing experience, and financial offer our evaluation committee has selected the following proposals:

Variety	Company (Awarded License Rights)
BW1069 Canada Western Red Spring Wheat	FP Genetics Inc.
BW5044 Canada Western Red Spring Wheat	FP Genetics Inc.
DT897 Canada Western Amber Durum Wheat	Alliance Seed Corp.
HW402 Canada Western Hard White Spring Wheat	FP Genetics Inc.
HW506 Canada Western Hard White Spring Wheat	FP Genetics Inc.
HY2074 Canada Prairie Spring Wheat	Alliance Seed Corp.
OT16-06 Soybean	CanGro Genetics Inc.
OT18-16 Soybean	Agri Magic
P0938-4055 Yellow Pea	Canterra Seeds
TR17255 Two-Row Malting Barley	Canterra Seeds
W583 Canada Western Red Winter Wheat	Alliance Seed Corp.

No proposals were received/accepted for the following lines:

Varieties marked with an asterisk will be offered again through the 2021 Results of Request for Proposals process.

- AW780 Eastern Hard Red Spring Wheat
- CH2720-1 Two-Row Feed Spring Barley
- *CH2730-60 Six-Row Spring Barley
- *CH2909N-162-95 Two-Row Hulless Spring Barley
- *CR10875-6-2 Cranberry Bean
- *EC0410.1.7 Eastern Hard Red Spring Wheat
- NH018 Canada Northern Hard Red Spring Wheat
- OB2717-60-2 Two-Row Feed Spring Barley
- *OT15-05 Natto Soybean
- OT16-01 Soybean
- *OT18-01 Conventional Soybean
- OT7090 Oat
- OX-182 Tofu Soybean
- *OX-192 Tofu Soybean
- *PT492 Canada Western Red Spring Wheat
- *S09-27C Navy Bean
- *TR18262 Two-Row Feed Barley

APPENDIX OF VARIETIES

AW780 Eastern Hard Red Spring Wheat

AW780 Eastern Hard Red Spring wheat was developed at the Charlottetown Research and Development Centre at Charlottetown, Prince Edward Island. AW780 is a high yielding cultivar that exhibited yields 116 percent over that of check cultivars in the Maritime Registration Trials ranking it second in terms of yield in the trial. In the 2015-2018 Maritime Spring Wheat Registration Test — Four Year Summary, AW780 demonstrated lower DON scores over the majority of check cultivars and superior mildew resistance over AC Walton and Nass. In the same registration test summary, AW 780 outperformed check cultivars with regard to leaf rust resistance and demonstrated improved septoria resistance over AAC Scotia and AC Walton. AW780 exhibits height and test weight characteristics similar to AAC Scotia and a mean test weight higher than AAC Scotia and Nass. AW780 was supported for registration by the Atlantic Recommending Committee for Cereal Crops in 2017.

BW1069 Canada Western Red Spring Wheat (FP Genetics)

BW1069 is a Canada Western Red Spring wheat, developed at the Brandon Research and Development Centre, Brandon, Man. This variety was developed under the AAFC/WGRF Agreement and also has wheat midge resistance. BW1069 is an awned, hollow stemmed, spring wheat line derived from the cross of BW430/BW897. Three years (2017-2019) of testing on 31 site years, BW1069 was 17 percent, 11 percent, and six percent higher yielding higher than Carberry, Unity, and AAC Viewfield respectively. BW1069 had similar maturity as AAC Viewfield and was one day earlier than Carberry. BW1069 had similar to Glenn and better lodging resistance Carberry. BW1069 had better test weight compared to Carberry and Unity. The kernel weight was similar to Carberry. BW1069 had protein content similar to AAC Viewfield. BW1069 expressed moderately resistant to resistant reaction to Fusarium head blight. Over three years of testing (2017-2019), BW1069 expressed resistant to moderately resistant reactions to FHB at Carman and Morden. BW1069 was resistant to the prevalent races of leaf, stem and stripe rusts. BW1069 had moderately resistant to resistant reaction to common bunt. BW1069 is also resistant to wheat midge. BW1069 was deemed acceptable for the CWRS class based on end-use quality data over two years (2017-2018).

BW5044 Canada Western Red Spring Wheat (FP Genetics)

BW5044 is a Canada Western Red Spring (CWRS) wheat, developed at the Swift Current Research and Development Centre, Swift Current, Saskatchewan. This variety was developed under the AAFC/WGRF Agreement. BW5044 is a very strong strawed, awned, semi-dwarf wheat line with high grain yield and high grain protein concentration as well as a comprehensive disease resistance package. BW5044 is targeted to the Canada Western Red Spring market class and does not carry the Sm1 gene. Grain yield of BW5044 averaged over 37 site years in the Western Bread Wheat C Registration Test was nine percent higher than Carberry with comparable protein and five percent higher than the mean of the checks. The FHB response of BW5044 has been excellent with ratings of resistant to moderately resistant. BW5044 expresses resistance to prevalent races of stripe rust, leaf rust, stem rust, loose smut and common bunt. Based on the data generated for BW5044, it would be a major benefit to farmers in western Canada, especially, in the high productivity areas of the prairies where FHB and rusts are a concern.

CH2720-1 Two-Row Feed Spring Barley

CH2720-1 two-row feed spring barley was developed at the Ottawa Research and Development Centre at Ottawa, Ontario. It is a two-row feed spring barley derived from a cross between Leader and Pasadena. It was selected with the modified bulk method. CH2720-1 yielded three percent higher than the two checks (Selena and Island) in the Quebec Two-Row Barley Registration and Recommendation Test from 2015 and 2017. In these tests, CH2720-1 had higher yield, high kernel weight and better lodging resistance than checks. In 2018, the Quebec Recommending Committee for Cereals supported this cultivar for registration. CH2720-1 was adapted to eastern Canada.

CH2730-60 Six-Row Spring Barley (Rights available in 2021 RFP)

CH2730-60 is a six-row, spring feed barley, developed at the Ottawa Research and Development Centre, Ottawa, Ont. Its parentage includes Encore, Chevron and Peatland. Chevron and Peatland are a source of FHB tolerance. Encore was a high yielding and well-adapted cultivar in eastern Canada. CH2730-60 was selected with the modified bulk breeding method. CH2730-60 had similar grain yield as checks in the Quebec Two-Row Barley Registration and Recommendation Test from 2017 to2019. CH2730-60 had higher test weight than all checks. CH2730-60 was moderately susceptible to fusarium head blight and DON accumulation across two locations over two years in artificial fusarium inoculation nursery.

CH2909n-162-95 Two-Row Hulless Spring Barley (Rights available in 2021 RFP)

CH2902n-162-95 is a two-row hulless spring barley, developed at the Ottawa Research and Development Centre, Ottawa, Ont.

The variety was derived from a cross between CDC Rattan and CDC Fibar. It was selected with the modified bulk breeding method. CH2909n-162-95 yielded similar to check cultivar AAC Starbuck in the Maritime Two-Row Barley Registration and Recommendation Test from 2017 to 2019. It had 24 percent higher beta-glucan content and 117 percent higher protein content than CDC Rattan. It had similar test weight as check, AAC Starbuck. CH2909n-162-95 was shorter in height and matured two days earlier than AAC Starbuck. CH-2909n-162-95 was adapted to eastern Canada.

CR10875-6-2 Cranberry Bean (Rights available in 2021 RFP)

CR10875-6-2 is a cranberry bean variety, developed at the Morden Research and Development Centre in Morden, Man. It is a high yielding cranberry bean line with an upright, determinate bush growth habit, good lodging resistance, good seed quality and disease resistance. In the Long Season Wide Row Dry Bean Cooperative Registration Trials over 16 station-years, the average yield of CR10875-6-2 was 152 percent of Etna. The seed size of CR10875-6-2 was similar to Etna. The average maturity of CR10875-6-2 was two days later than Etna. The variety was resistant to anthracnose race 73, while Etna was susceptible. CR10875-6-2 and Etna had similar resistance to white mould. CR10875-6-2 was susceptible to common bacterial blight, similar to Etna. The canning and cooking quality of CR10875-6-2 was acceptable, which was similar to Etna.

DT897 Canada Western Amber Durum Wheat (Alliance Seed)

DT897 is a Canada Western Amber Durum (CWAD) wheat, developed at the Swift Current Research and Development Centre in Swift Current, Sask. This variety was developed under the AAFC/WGRF Agreement and also has wheat midge resistance. DT897 has the Sm1 gene and a solid stem providing resistance to both orange wheat blossom midge and wheat stem sawfly coupled with high grain yield, high falling number related with good pre-harvest sprouting resistance and low grain cadmium content. In three years of registration testing, grain yield of DT897 was significantly higher than the mean of the checks. Averaged over 28 station years across two soil zones, DT897 yielded 7.2 percent more than Strongfield, 5.2 percent more than AAC Cabri and equal to Brigade, the highest yielding check. Grain protein concentration of DT897 was slightly lower than AC Navigator. Straw strength of DT897 was the same as Brigade. Time to maturity of DT897 was the same as Brigade. Plant height was shorter than Strongfield and within the range of the checks. Test weight was higher than all checks. DT897 kernel size was the same as Strongfield and within the range of the checks. DT897 expressed resistance to leaf rust, stripe rust and common bunt while expressing moderate resistance to stem rust, and moderately susceptible to resistance to loose smut. DT897 expressed an intermediate resistance to moderately susceptible response to FHB. Averaged over testing years, the FHB disease index of DT897 was better than AAC Cabri. The DON of DT897 was similar to the lowest check. DT897 had low grain cadmium concentration similar to AAC Cabri, and its quality profile met the requirements of the CWAD class with high falling number.

EC0410.1.7 Eastern Hard Red Spring Wheat (Rights available in 2021 RFP)

EC0410.1.7 is an Eastern Hard Red Spring wheat, developed at the Ottawa Research and Development Centre in Ottawa, Ont. EC0410.1.7 is an awned, hollow-strawed, hard red spring wheat line that over two years of testing in Ontario has yielded on average four percent more than Norwell,

continued on page 80 »

APPENDIX OF VARIETIES (continued)

» continued from page 79

and 20 percent greater to Norwell in Area III. EC0410.1.7 averages about five centimetres taller than Norwell with no increase in lodging scores, similar or slightly lower grain protein, and typical eastern Hard Red Spring end use quality. EC0410.1.7 has good fusarium headblight resistance, with an FHB index score slightly higher AAC Scotia, and DON accumulation similar to AAC Scotia. EC0410.1.7 has powdery mildew, stripe rust, root rot, leaf septoria, and leaf rust scores lower than both AC Carberry and Norwell over two years of testing.

HW402 Canada Western Hard White Spring Wheat (FP Genetics)

HW402 Canada Western Hard White Spring (CWHWS) wheat was developed at the Swift Current Research and Development Centre at Swift Current, Sask.

The variety was developed under the AAFC/WGRF Agreement. HW402 is a white seeded high-yielding, strong-strawed, semi-dwarf doubled haploid (DH) wheat line derived from the cross AAC Iceberg/Carberry. HW402 is targeted for the Canada Western Hard White Spring (CWHWS) market class.

Over 35 site years in the Hard White Wheat C (HWWC) Registration Test (2016 to 2018), grain yield of HW402 was higher than Whitehawk by 5.6 percent. Grain protein concentration was significantly higher than Whitehawk, AAC Iceberg and Snowstar. Kernel size is significantly larger than the HWWC check varieties. Plant height of HW402 is significantly shorter than Whitehawk and similar to AAC Cirrus. The FHB response has been moderately resistant, which is better than the hard white wheat varieties currently available to producers. The level of resistance to priority diseases has met or exceeded guidelines. HW402 has desirable end-use quality properties including improved gluten extensibility and higher wheat and flour protein concentrations.

HW506 Canada Western Hard White Spring Wheat (FP Genetics)

HW506 is a CWHWS wheat, developed at the Lethbridge Research and Development Centre in Lethbridge, Alta. This variety was developed under the AAFC/WGRF Agreement and also has wheat midge resistance. HW506 is a semi-dwarf variety with an awned spike and a hollow stem.

Based on three years of evaluation in the Hard White Wheat Registration Trial (2017-2019), HW506 yielded about 21 percent more grain than Snowstar. Relative to Snowstar over 34 test sites, HW506 was higher yielding in all zones.

On average, HW506 yielded 5,557 kilograms per rhectare, compared to 4,581 kg/ha for Snowstar, 4,778 kg/ha for AAC Cirrus and 4,468 kg/ha for Whitehawk. Over the three years of evaluation, HW506 matured in 97.6 days making it similar to AAC Cirrus. HW506 was 81 centimetres tall, making it shorter than all of the checks cultivars. HW506 had excellent straw strength, similar to AAC Cirrus with a lodging score of 2.1. The protein content was within the range of checks. Test weight of HW506 (79.4 kg/hL) was slightly lower than all the checks. Kernel size of HW506 (39.0 mg) was larger than the checks. HW506 exhibited excellent levels of resistance to leaf rust, stripe rust, and common bunt, and was moderately resistant to intermediate in reaction to FHB. HW506 is also resistant to orange blossom wheat midge.

HY2074 Canada Prairie Spring Red Wheat (Alliance Seed)

HY2074 is a Canada Prairie Spring Red (CPSR) wheat, developed at the Lethbridge Research and Development Centre in Lethbridge, Alta. The variety was developed under the AAFC/WGRF Agreement. HY2074 is a semi-dwarf variety with an awned spike and a hollow stem. Based on three years of evaluation in the High Yield Wheat Registration Trial (2017-2019), HY2074 yielded significantly higher than all the checks cultivar producing six percent more grain the highest yielding check, AAC Foray, 12 percent over AAC Penhold, and 22 percent over Carberry.

Relative to the highest yielding check over 42 test sites, HY2074 was higher yielding in all zones. On average, HY2074 yielded 5,981 kilograms per hectare, as compared to 5,650 kg/ha for AAC Foray. Over the three years of evaluation, HY2074 matured in 102 days making it two days later then AAC Foray. HY2074 is likely similar in maturity to 5700PR, as AAC Foray was two days earlier maturing than 5700PR when it was proposed for registration in 2013. HY2074 (82 cm) was four centimetres shorter than AAC Foray and had straw strength similar to AAC Foray and AAC Penhold, with a lodging score of 1.6. The protein content of HY2074 was slightly lower than AAC Foray and the test weight of HY2074 (79.2 kg/hL) was higher than AAC Foray. The thousand kernel weight of HY2074 was 38.8 milligrams making it smaller in size than the CPS checks. HY2074 exhibited good levels of resistance to leaf rust, stripe rust, and stem rust but intermediate level of resistance to common bunt and fusarium head blight. HY2074 is a non-Sm1 carrier and is thus midge susceptible.

NH018 Canada Northern Hard Red Spring Wheat

NH018 is a Canada Northern Hard Red (CNHR) spring wheat, developed at the Lethbridge Research and Development Centre at Lethbridge, Alta. This variety was developed under the AAFC/WGRF Agreement. NH018 is a candidate cultivar for the CNHR wheat class. It is of semi-dwarf stature, with an awned spike and a hollow stem.

Based on three years of evaluation in the Canada Northern Hard Red Spring Wheat Cooperative Registration Trial (2016-2018), NH018 yielded about four percent more grain than the highest yielding check cultivar (Faller) and 21 percent over Carberry. Relative to the highest yielding check (Faller) over 32 test sites, NH018 was higher yielding in zones 1, 2 and 4 but was equal in zone 3. On average, NH018 yielded 5,963 kilograms per hectare, as compared to 5,717 kg/ha for Faller, 4,947 kg/ha for Carberry and 4,892 kg/ha for 5700PR.

OB2717-60-2 Six-Row Feed Spring Barley

OB2717-60-2 six-row feed spring barley was developed at the Ottawa Research and Development Centre at Ottawa, Ont. It is derived from a cross between Synasolis and AC Klinck. It was selected with the modified bulk breeding method. OB2717-60-2 yielded seven percent higher than the two checks (Cyane and Hy621-6R) in the Ontario Barley Orthogonal Test in 2016 and 2017. Overall, OB2717-60-2 had higher yield, low DON accumulation and better standability. OB2717-60-2 was adapted to Ont.

OT15-05 Natto Soybean (Rights available in 2021 RFP)

OT15-05 Natto Soybean was, developed at the Ottawa Research and Development Centre in Ottawa, Ont. It is an early MG 0 variety adapted to short-season areas of Ontario and Quebec. OT15-05 has grey pubescence, yellow hilum and small seed size making it suitable for natto production. OT15-05 was grown in Ontario provincial trials in 2016 and in multiple location trials from 2014 to 2016 in Ontario, Quebec and Prince Edward Island.

OT16-01 Soybean

OT16-01 Soybean was developed at the Ottawa Research and Development Centre, Ottawa, Ont. It is a tawny pubescence, imperfect yellow hilum cultivar for the non-GMO food soybean market. OT016-01 is an early maturity group 00 adapted to specific regions of Manitoba, Ontario and Quebec.

OT16-06 Soybean (CanGro Genetics)

OT16-06 Soybean was developed at the Ottawa Research and Development Centre at Ottawa, Ont. It is a grey pubescence, yellow hilum cultivar for the non-GMO food soybean market. OT016-06 is a late maturity group 00 adapted to specific regions of Manitoba, Ontario and Quebec.

OT18-01 Conventional Soybean (Rights available in 2021 RFP)

OT18-01 Conventional Soybean was developed at the Ottawa Research and Development Centre, Ottawa, Ont. It is a grey pubescence, yellow hilum cultivar for the non-GMO food soybean market. OT018-01 is a late maturity group 00 adapted to specific regions of Manitoba, Ontario and Quebec.

OT18-16 Conventional Soybean (Agri-Magic)

OT18-16 Conventional Soybean, developed at the Ottawa Research and Development Centre, Ottawa, Ontario

OT18-16 is a brown pubescence, imperfect yellow hilum cultivar with moderately higher seed protein for the non-GMO food soybean market. OT018-16 is an early maturity group 0 adapted to these regions of Ontario and Quebec.

OT7090 Oat

OT7090 Oat was developed at the Brandon Research and Development Centre at Brandon, Man. OT7090 combines good yield capacity with reasonable maturity. It has excellent lodging resistance, even better than AC Morgan. Its test weight and thousand kernel weights are high, with good percent plump seed. Percent groat is slightly better than average with very good protein content, lower than average oil content and good beta glucan content. OT7090 has similar disease reactions to CDC Dancer.

continued on page 82 »

APPENDIX OF VARIETIES (continued)

» continued from page 81

OX-182 Tofu Soybean

OX-182 Tofu Soybean was developed at the Harrow Research and Development Centre, Harrow, Ont. OX-182 is a high-yielding, food grade soybean cultivar with a yellow hilum, good field resistance to soybean cyst nematode and excellent field resistance to soybean sudden death syndrome. Its parentage includes RCAT0601SCN, X888-2 and S20-F8. RCAT0601SCN is an SCN resistant soybean cultivar developed by the University of Guelph, Ridgetown Campus. X888-2 is a food grade soybean line developed by AAFC at Harrow-RDC. S20-F8 is a SCN resistant soybean cultivar developed by Syngenta.

OX-192 Tofu Soybean (Rights available in 2021 RFP)

OX-192 Tofu Soybean was developed at the Harrow Research and Development Centre at Harrow, Ont. It is a high-yielding, food grade soybean cultivar with a yellow hilum and good field resistance to soybean cyst nematode (SCN). Its parentage includes IA1008, OX752, X696-32-2 and S26-F9 with the last cross made in 2012. IA1008 is a SCN resistant soybean cultivar developed by the Iowa State University. OX752 and X696-32-2 are food grade soybean lines developed by AAFC Harrow-RDC. S26-F9 is a SCN resistant soybean cultivar developed by Syngenta Canada.

P0938-4055 Field Pea (Canterra Seeds)

P0938-4055 Field Pea was developed at the Lacombe Research and Development Centre at Lacombe, Alta.. P0938-4055 is a semi-leafless, high-yielding and powdery mildew resistant yellow pea line. In the 2018-2019 Field Pea Cooperative Registration Test over 26 location-years across western Canada, P0938-4055 yielded five percent higher than the check cultivars CDC Amarillo and AAC Lacombe. P0938-4055 had a higher lodging score (4.1) than CDC Amarillo (3.0) and AAC Lacombe (3.2). The thousand-seed-weight (TSW) of P0938-4055 was 215 grams, significantly smaller than the TSW of the CDC Amarillo (226 g) and AAC Lacombe (255 g). P0938-4055 matured at approximately 100 days. The seed protein content of P0938-4055 was 24.9 percent, whereas CDC Amarillo and AAC Lacombe have a protein content of 24.4 percent and 23.4 percent, respectively. P0938-4055 was moderately susceptible to mycosphaerella blight and fusarium root rot, similar to CDC Amarillo and AAC Lacombe.

PT492 Canada Western Red Spring Wheat (Rights available in 2021 RFP)

PT492 is a Canada Western Red Spring wheat, developed at the Brandon Research and Development Centre at Brandon, Man. This variety was developed under the AAFC/WGRF Agreement and has wheat midge resistance. PT492 is an awnless hollow stemmed spring wheat derived from the cross of CDC Plentiful (PT580)//PT451/CDC Utmost (BW883). During three years (2017-2019) of testing at 34 site years, PT492 was four percent higher yielding than Carberry and five percent higher yielding than Parata. PT492 had 0.1 percent lower protein than Carberry. It matured two days earlier than Carberry. PT492 is semi-dwarf and is five centimetres shorter in height compared to Parata with better lodging resistance compared to Parata. PT492 has test weight similar to Carberry. PT492 has been rated intermediate to moderately resistant to FHB over three years of testing at Morden and Carmen FHB inoculated testing nurseries. PT492 reactions to other diseases are leaf rust (R), stem rust (R-MR), stripe rust (R), loose smut (R-MR), and common bunt (MR-I). Quality suitable for CWRS class based on three years of data collected from 2017 to 2019.

S09-27C Navy Bean (Rights available in 2021 RFP)

S09-27C Navy Bean was developed at the Morden Research and Development Centre at Morden, Man. It is a high yielding navy bean line with an upright, indeterminate bush growth habit (2a), good lodging resistance, good seed quality, intermediate maturity, and adaptation to southern Man. In the Long Season Wide Row Dry Bean Cooperative Registration Trials over 13 station-years, the average yield of S09-27C was 145 percent of Envoy and 84 percent of T9905. The average maturity of S09-27C (97) was two days later than Envoy, but three days earlier than T9905. The average seed size of S09-27C 185 grams per 1000 seeds, greater than Envoy (168), but similar to T9905 (187). S09-27C had better resistance to common bacterial blight than the checks. S09-27C is resistant to anthracnose race 73, which is the same as Envoy, while T9905 is susceptible.

TR17255 Two-Row Malting Barley (Canterra Seeds)

TR17255 two-row malting barley was developed at the Brandon Research and Development Centre at Brandon, Man. This variety was developed under the AAFC/WGRF Agreement. TR17255 is a promising two-row hulled barley with very attractive malting profile. It has good adaptability across western Canada and combines good agronomic performance (five percent higher yield than AC Metcalfe, two percent higher than CDC Copeland and three percent lower than AAC Synergy) and physical grain quality (good plumpness, test weight and kernel weight) with moderate resistance to surface-borne smuts, stem rust (carries the Rpg1 gene) and net-form net blotch, and intermediate resistance to fusarium head blight (FHB) and spot blotch. It has a desirable malting quality profile with higher fine extract and alpha amylase, and lower peeled and broken grains, beta-glucan and viscosity than all three malting checks. Soluble protein and FAN levels are similar to AC Metcalfe while friability is higher than AC Metcalfe and AAC Synergy. Overall TR17255 has a good combination of agronomic traits, disease resistance and promising malting quality.

TR18262 Two-Row Feed Barley (Rights available in 2021 RFP)

TR18262 two-row feed barley was developed at the Brandon Research and Development Centre at Brandon, Man.This variety was developed under the AAFC/WGRF Agreement. TR18262 is a promising two-row, hulled feed barley widely adapted to western Canada.

It combines good yield potential, similar to Champion and CDC Austenson, with kernel weight similar to Champion and grain protein similar to both feed checks. TR18262 has an average to above average combination of disease resistance including resistance to the stem rust and surface smuts, moderate resistance to spot blotch and FHB, intermediate to moderate resistance to spot-form net blotch, and intermediate resistance to net-form net blotch.

Overall DON levels are lower than all the checks, including the feed checks. With its good yield, low DON levels, and stem rust resistance, TR18262 will offer a good production choice for feed growers across the Prairies.

W583 Canada Western Red Winter Wheat (Alliance Seed)

W583 is a Canada Western Red Winter wheat variety, developed at the Lethbridge Research and Development Centre at Lethbridge, Alta. It was developed under the AAFC/WGRF Agreement. W583 is a broadly adapted hard red winter wheat line, proposed for the CWRW wheat class, that combines high grain yield with high protein concentration, excellent cold tolerance, short stature, strong straw, medium maturity, and excellent disease resistance. Test weight and seed weight are within the range of the checks.

Overall, W583 was higher yielding than all of the CWRW checks, and showed excellent adaption to the Parkland region where it yielded seven percent more than Moats, the highest yielding check. Combined with its disease resistance, W583 could be considered a sound alternative to Emerson in the eastern Prairies, where it was higher yielding than Emerson in Saskatchewan (+10%) and Manitoba (+4%), the region where it has been very popular with winter wheat producers. W583 expresses excellent resistance to stem, leaf and stripe rust, moderate resistance to FHB, and is susceptible to common bunt.

Based on two years of CGC analysis, W583 produced grain of higher protein concentration than all of the checks except Emerson, had improved gluten strength, higher loaf volume, and better loaf-top ratio than all of the checks, while maintaining the excellent milling characteristics of CWRW.

PROPOSED LIST OF VARIETY REGISTRATION CANCELLATIONS

The Canadian Food Inspection Agency in consultation with the Canadian Grain Commission has adopted a protocol for the cancellation of variety registrations upon request of the variety's Canadian representative and breeder.

Under this new, extended protocol, a three-year notification of cancellation period will apply to varieties of all crop kinds except hybrid canola and rapeseed. Hybrid canola and rapeseed will require a one year notification period. This timeline enables the Canadian representative and breeder to ensure that seed stocks of the variety have been cleared from the market and that growers have been duly notified, well in advance, in order to clear seed stocks in farmers' operations.

This will help farmers to plan for the future and minimize any financial risk to their businesses. Notifications will be posted August 1 in each calendar year and the notification period is from that date forward.

The CFIA and CGC are committed to communicating to farmers well before varieties are cancelled.

Standardizing the period of cancellation will help to prevent financial risk to farmers by avoiding the planting of varieties of field crops, which will no longer be registered for sale in Canada.

Variety registration cancellation for cause, such as non-compliance, fraud or loss of varietal integrity, is not part of this policy and remains an enforcement tool available to the registrar of the CFIA's Variety Registration Office.

The CFIA publishes the Proposed List of Variety Registration Cancellations with the date of cancellation.

The list is revised annually on Aug. 1, and released by the VRO. The CGC revises their Variety Designation Lists throughout the year as changes occur.

Varieties that are highlighted in **red** denote varieties whose registration will be cancelled in calendar year 2021. Growers should be aware that crop production using unregistered seed varieties could result in marketing challenges.

Crop Kind		Variety	Reg. #	Date Registered	Date Posted	Date of Cancellation
Barley	Two-Row Spring	AC Bountiful	5028	1999-12-07	2015-08-01	2018-08-01
Barley	Two-row spring	Hector	1433	1973-02-06	2017-08-01	2020-08-01
Barley	Two-row spring	AC Queens	4765	1998-06-02	2017-08-01	2020-08-01
Barley	Six-row spring	AC Westech	4769	1998-06-03	2017-08-01	2020-08-01
Barley	Six-row spring	AC Malone	4910	1999-04-30	2017-08-01	2020-08-01
Barley	Six-row spring	AC Vision	5323	2001-05-10	2017-08-01	2020-08-01
Barley	Two-row spring	Calder	5490	2002-05-24	2017-08-01	2020-08-01
Barley	Two-row hulless spring	Millhouse	6137	2006-05-19	2017-08-01	2020-08-01
Barley	Two-row spring	Norman	6534	2009-02-02	2017-08-01	2020-08-01
Bean	Red Mexican	AC Scarlet	5217	2000-11-30	2015-08-01	2018-08-01
Bean	Pinto	AC Pintoba	4668	1998-01-16	2015-08-01	2018-08-01
Bean	Black	Carmen Black	6886	2010-09-23	2015-08-01	2018-08-01
Fababean		Florent	6567	2009-03-16	2016-08-01	2019-08-01
Flax	Oilseed	Shape	6477	2008-06-27	2017-08-01	2020-08-01
Flax	**Oilseed**	**AC Watson**	**4441**	**1997-01-07**	**2018-08-01**	**2021-08-01**
Flax	**Oilseed**	**AC Carnduff**	**4713**	**1998-03-13**	**2018-08-01**	**2021-08-01**
Oat	Spring	AC Rebel	4705	1998-03-09	2015-08-01	2018-08-01
Oat	Hulless spring	Tibor	2534	1985-05-06	2017-08-01	2020-08-01
Oat	Hulless spring	AC Lotta	3414	1991-04-08	2017-08-01	2020-08-01
Oat	Hulless spring	AC Fregeau	4381	1996-08-09	2017-08-01	2020-08-01
Oat	Spring	AC Rebel	4705	1998-03-09	2017-08-01	2020-08-01
Oat	Spring	Goslin	5157	2000-06-23	2017-08-01	2020-08-01
Oat	Spring	AC Vermont	5249	2001-02-21	2017-08-01	2020-08-01
Oat	Spring	Sherwood	5846	2004-08-04	2017-08-01	2020-08-01
Oat	Spring	Stainless	6422	2008-04-07	2017-08-01	2020-08-01
Oat	**Spring**	**Athabasca**	**1834**	**1978-04-14**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Cascade**	**1920**	**1979-04-09**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Manic**	**1942**	**1979-10-10**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Dumont**	**2250**	**1982-05-20**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Riel**	**2535**	**1985-05-10**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Marion**	**2544**	**1985-06-05**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Capital**	**2848**	**1987-06-03**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Condesa**	**3017**	**1988-12-09**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**AC Stewart**	**3384**	**1991-03-05**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**AC Hunter**	**3587**	**1992-04-21**	**2018-08-01**	**2021-08-01**
Oat	**Hulless spring**	**AC Belmont**	**3649**	**1992-08-14**	**2018-08-01**	**2021-08-01**
Oat	**Hulless spring**	**AC Baton**	**3963**	**1994-06-01**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**AC Francis**	**4382**	**1996-08-09**	**2018-08-01**	**2021-08-01**
Oat	**Spring**	**Kaufmann**	**5373**	**2001-11-22**	**2018-08-01**	**2021-08-01**
Pea	Green field	Nitouche	4900	1999-04-14	2015-08-01	2018-08-01
Pea	Yellow field	AC Melfort	4861	1999-02-10	2015-08-01	2018-08-01
Pea	Yellow Field	Sorento	6303	2007-06-27	2017-08-01	2020-08-01
Pea	Yellow field	DS-Admiral	5166	2000-06-30	2019-08-01	2022-08-01
Potato		Morning Gold	4525	1997-03-21	2016-08-01	2019-08-01
Potato		Concurrent	4814	1998-10-06	2016-08-01	2019-08-01
Potato		Obelix	4815	1998-10-06	2016-08-01	2019-08-01
Potato		Van Gogh	4959	1999-07-23	2016-08-01	2019-08-01
Potato		NL10-RBK	4928	1999-05-06	2017-08-01	2020-08-01
Potato		NL10-SUP	4929	1999-05-06	2017-08-01	2020-08-01
Potato		NL30-RBK-82	5501	2002-06-13	2017-08-01	2020-08-01
Potato		NL20-SHE	5502	2002-06-13	2017-08-01	2020-08-01
Ryegrass	**Perennial**	**Rosalin**	**4606**	**1997-06-12**	**2018-08-01**	**2021-08-01**
Soybean	Oilseed	Olexrr	5469	2002-04-29	2016-08-01	2019-08-01
Soybean	Oilseed	Vistarr	5482	2002-05-14	2016-08-01	2019-08-01
Soybean	Oilseed	Riotrr	5584	2003-01-31	2016-08-01	2019-08-01
Soybean	Oilseed	Toreorr	5594	2003-03-06	2016-08-01	2019-08-01
Soybean	Oilseed	Lynxrr	5759	2004-03-18	2016-08-01	2019-08-01
Soybean	Oilseed	Drakorr	5813	2004-05-12	2016-08-01	2019-08-01
Soybean	Oilseed	PS 0027 RR	6548	2009-02-24	2016-08-01	2019-08-01
Soybean	Oilseed	Hyperion	6569	2009-03-16	2016-08-01	2019-08-01
Soybean	Oilseed	Fulgorarr	6570	2009-03-16	2016-08-01	2019-08-01
Soybean	Oilseed	Isisrr	6576	2009-03-26	2016-08-01	2019-08-01
Soybean	Oilseed	9132	4166	1995-08-14	2017-08-01	2020-08-01
Soybean	**Oilseed**	**York**	**4321**	**1996-04-24**	**2018-08-01**	**2021-08-01**

continued on next page »

PROPOSED LIST OF VARIETY REGISTRATION CANCELLATIONS (CONTINUED)

Crop Kind		Variety	Reg. #	Date Registered	Date Posted	Date of Cancellation
Soybean	Oilseed	PRO 285	4588	1997-05-06	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 315	4646	1997-11-05	2018-08-01	2021-08-01
Soybean	Oilseed	Wizard	4709	1998-03-11	2018-08-01	2021-08-01
Soybean	Oilseed	3201R	4755	1998-05-20	2018-08-01	2021-08-01
Soybean	Oilseed	2601R	4770	1998-06-05	2018-08-01	2021-08-01
Soybean	Oilseed	2701R	4771	1998-06-05	2018-08-01	2021-08-01
Soybean	Oilseed	2801R	4772	1998-06-05	2018-08-01	2021-08-01
Soybean	Oilseed	AG2101	4788	1998-07-08	2018-08-01	2021-08-01
Soybean	Oilseed	2702R	4882	1999-03-29	2018-08-01	2021-08-01
Soybean	Oilseed	RR Robust	4917	1999-05-03	2018-08-01	2021-08-01
Soybean	Oilseed	DKB00-99	4918	1999-05-03	2018-08-01	2021-08-01
Soybean	Oilseed	DKB07-51	4919	1999-05-03	2018-08-01	2021-08-01
Soybean	Oilseed	DKB20-10	4996	1999-10-06	2018-08-01	2021-08-01
Soybean	Oilseed	26R	5106	2000-05-05	2018-08-01	2021-08-01
Soybean	Oilseed	2802R	5173	2000-08-25	2018-08-01	2021-08-01
Soybean	Oilseed	3102R	5174	2000-08-25	2018-08-01	2021-08-01
Soybean	Oilseed	AG2703	5175	2000-08-25	2018-08-01	2021-08-01
Soybean	Oilseed	DKB13-51	5176	2000-08-25	2018-08-01	2021-08-01
Soybean	Oilseed	DKB23-51	5177	2000-08-25	2018-08-01	2021-08-01
Soybean	Oilseed	DKB26-51	5178	2000-08-25	2018-08-01	2021-08-01
Soybean	Oilseed	DKB26-52	5182	2000-09-08	2018-08-01	2021-08-01
Soybean	Oilseed	B2111RR	5229	2001-01-03	2018-08-01	2021-08-01
Soybean	Oilseed	DKB07-75	5269	2001-03-19	2018-08-01	2021-08-01
Soybean	Oilseed	DKB00-65	5270	2001-03-19	2018-08-01	2021-08-01
Soybean	Oilseed	D601R	5335	2001-06-06	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 3090R	5369	2001-10-29	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2790R	5370	2001-10-29	2018-08-01	2021-08-01
Soybean	Oilseed	DKB005-51	5497	2002-06-04	2018-08-01	2021-08-01
Soybean	Oilseed	Arctic	5513	2002-07-05	2018-08-01	2021-08-01
Soybean	Oilseed	25-02R	5526	2002-07-23	2018-08-01	2021-08-01
Soybean	Oilseed	DKB06-52	5527	2002-07-23	2018-08-01	2021-08-01
Soybean	Oilseed	Polar	5604	2003-03-25	2018-08-01	2021-08-01
Soybean	Oilseed	26-02R	5612	2003-03-31	2018-08-01	2021-08-01
Soybean	Oilseed	25-03R	5613	2003-03-31	2018-08-01	2021-08-01
Soybean	Oilseed	Breeze	5614	2003-03-31	2018-08-01	2021-08-01
Soybean	Oilseed	32-03R	5616	2003-04-02	2018-08-01	2021-08-01
Soybean	Oilseed	30-04R	5617	2003-04-02	2018-08-01	2021-08-01
Soybean	Oilseed	31-03R	5618	2003-04-02	2018-08-01	2021-08-01
Soybean	Oilseed	29-02R	5619	2003-04-02	2018-08-01	2021-08-01
Soybean	Oilseed	Chinook	5699	2003-11-20	2018-08-01	2021-08-01
Soybean	Oilseed	ADV Runaway RR	5705	2003-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	Jade	5760	2004-03-23	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 3190R	5766	2004-03-24	2018-08-01	2021-08-01
Soybean	Oilseed	25-04R	5790	2004-04-21	2018-08-01	2021-08-01
Soybean	Oilseed	27-06R	5791	2004-04-21	2018-08-01	2021-08-01
Soybean	Oilseed	30-06R	5806	2004-05-10	2018-08-01	2021-08-01
Soybean	Oilseed	31-04R	5809	2004-05-10	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 3195R	5812	2004-05-12	2018-08-01	2021-08-01
Soybean	Oilseed	27-51R	5913	2005-03-07	2018-08-01	2021-08-01
Soybean	Oilseed	30-07R	5917	2005-03-10	2018-08-01	2021-08-01
Soybean	Oilseed	32-51R	5918	2005-03-10	2018-08-01	2021-08-01
Soybean	Oilseed	28-51R	5923	2005-03-21	2018-08-01	2021-08-01
Soybean	Oilseed	28-52R	5924	2005-03-21	2018-08-01	2021-08-01
Soybean	Oilseed	Cyrano RR	5973	2005-07-18	2018-08-01	2021-08-01
Soybean	Oilseed	RC3125	6003	2005-11-28	2018-08-01	2021-08-01
Soybean	Oilseed	32-04R	6004	2005-11-08	2018-08-01	2021-08-01
Soybean	Oilseed	24-51R	6014	2005-11-24	2018-08-01	2021-08-01
Soybean	Oilseed	RT0395	6016	2005-11-28	2018-08-01	2021-08-01
Soybean	Oilseed	32-52R	6017	2005-11-28	2018-08-01	2021-08-01
Soybean	Oilseed	RC 2723	6018	2005-11-28	2018-08-01	2021-08-01
Soybean	Oilseed	RT0087	6019	2005-11-28	2018-08-01	2021-08-01
Soybean	Oilseed	RC 2906	6073	2006-04-13	2018-08-01	2021-08-01
Soybean	Oilseed	RT 2533	6074	2006-04-13	2018-08-01	2021-08-01
Soybean	Oilseed	26-54R	6129	2006-05-15	2018-08-01	2021-08-01
Soybean	Oilseed	27-07R	6130	2006-05-15	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2615R	6131	2006-05-15	2018-08-01	2021-08-01
Soybean	Oilseed	RT2442	6132	2006-05-15	2018-08-01	2021-08-01
Soybean	Oilseed	25-52R	6143	2006-05-24	2018-08-01	2021-08-01
Soybean	Oilseed	28-03R	6144	2006-05-26	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2915R	6146	2006-05-24	2018-08-01	2021-08-01
Soybean	Oilseed	32-54VR	6376	2008-02-04	2018-08-01	2021-08-01
Soybean	Oilseed	30-08 VR	6377	2008-02-04	2018-08-01	2021-08-01
Soybean	Oilseed	29-52R	6381	2008-02-13	2018-08-01	2021-08-01
Soybean	Oilseed	26-55R	6382	2008-02-13	2018-08-01	2021-08-01
Soybean	Oilseed	32-05R	6383	2008-02-13	2018-08-01	2021-08-01
Soybean	Oilseed	31-53R	6385	2008-02-13	2018-08-01	2021-08-01
Soybean	Oilseed	32-60RY	6537	2009-02-02	2018-08-01	2021-08-01
Soybean	Oilseed	5201RR2Y	6538	2009-02-02	2018-08-01	2021-08-01
Soybean	Oilseed	31-10RY	6539	2009-02-02	2018-08-01	2021-08-01

continued on next page ››

PROPOSED LIST OF VARIETY REGISTRATION CANCELLATIONS (CONTINUED)

Crop Kind		Variety	Reg. #	Date Registered	Date Posted	Date of Cancellation
Soybean	Oilseed	HS 24RYS01	6541	2009-02-04	2018-08-01	2021-08-01
Soybean	Oilseed	32-55VR	6551	2009-02-24	2018-08-01	2021-08-01
Soybean	Oilseed	24-52R	6557	2009-03-06	2018-08-01	2021-08-01
Soybean	Oilseed	27-52R	6587	2009-04-20	2018-08-01	2021-08-01
Soybean	Oilseed	Geryon RR	6692	2009-12-24	2018-08-01	2021-08-01
Soybean	Oilseed	NSC Argyle RR	6693	2009-12-24	2018-08-01	2021-08-01
Soybean	Oilseed	27-60RY	6722	2010-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	28-61RY	6723	2010-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2835R2	6724	2010-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	29-60RY	6725	2010-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	31-11RY	6726	2010-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	29-10RY	6735	2010-02-08	2018-08-01	2021-08-01
Soybean	Oilseed	CF30GR 1	6736	2010-02-08	2018-08-01	2021-08-01
Soybean	Oilseed	HS 16RY04	6751	2010-02-26	2018-08-01	2021-08-01
Soybean	Oilseed	PS 2797 NR2	6752	2010-02-26	2018-08-01	2021-08-01
Soybean	Oilseed	HS 26RYS16	6823	2010-05-14	2018-08-01	2021-08-01
Soybean	Oilseed	CF51GR	6824	2010-05-14	2018-08-01	2021-08-01
Soybean	Oilseed	Dart RR	6825	2010-05-14	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Tungsten	6832	2010-03-31	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 3215R2C	6834	2010-06-09	2018-08-01	2021-08-01
Soybean	Oilseed	HS 03RY11	6835	2010-06-09	2018-08-01	2021-08-01
Soybean	Oilseed	Fury RR	6897	2010-11-17	2018-08-01	2021-08-01
Soybean	Oilseed	CF21GR	6898	2010-11-17	2018-08-01	2021-08-01
Soybean	Oilseed	24-60RY	6909	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	25-60RY	6911	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	S01-K8	6912	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	27-10RY	6914	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	CF11GR	6915	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	Endurance R2	6917	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	30-10RY	6918	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	31-60RY	6919	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	32-61RY	6920	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	CF41GR	6921	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	HS 24RYS15	6922	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2825R2C	6924	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2935R2C	6925	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	R2T0510	6926	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	R2T0980	6927	2010-12-21	2018-08-01	2021-08-01
Soybean	Oilseed	HS 09RYS12	6933	2011-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2635R2	6934	2011-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	30-11RY	6935	2011-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	30-61RY	6936	2011-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	CF61GR	6941	2011-01-17	2018-08-01	2021-08-01
Soybean	Oilseed	Valiant RR	6943	2011-01-24	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Gold	6944	2011-01-24	2018-08-01	2021-08-01
Soybean	Oilseed	Twister RR	6945	2011-01-24	2018-08-01	2021-08-01
Soybean	Oilseed	R2C2000	6946	2011-01-24	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Gravity	6947	2011-01-24	2018-08-01	2021-08-01
Soybean	Oilseed	S05-B3	6954	2011-02-04	2018-08-01	2021-08-01
Soybean	Oilseed	S16-J4	6955	2011-02-04	2018-08-01	2021-08-01
Soybean	Oilseed	S25-W4	6956	2011-02-04	2018-08-01	2021-08-01
Soybean	Oilseed	S28-M1	6957	2011-02-04	2018-08-01	2021-08-01
Soybean	Oilseed	Murano R2	6961	2011-02-17	2018-08-01	2021-08-01
Soybean	Oilseed	R2C3011	6969	2011-03-03	2018-08-01	2021-08-01
Soybean	Oilseed	PS 3092NR2	6985	2011-03-21	2018-08-01	2021-08-01
Soybean	Oilseed	LS 006R21	6992	2011-04-06	2018-08-01	2021-08-01
Soybean	Oilseed	Laka R2	6999	2011-04-11	2018-08-01	2021-08-01
Soybean	Oilseed	Maheo R2	7000	2011-04-11	2018-08-01	2021-08-01
Soybean	Oilseed	Chadburn R2	7013	2011-05-05	2018-08-01	2021-08-01
Soybean	Oilseed	S31-L7	7017	2011-05-10	2018-08-01	2021-08-01
Soybean	Oilseed	NSC Balmoral RR2Y	7023	2011-05-16	2018-08-01	2021-08-01
Soybean	Oilseed	PS 0753 R2	7033	2011-07-07	2018-08-01	2021-08-01
Soybean	Oilseed	Thesan R2	7040	2011-07-14	2018-08-01	2021-08-01
Soybean	Oilseed	Monaco RR	7041	2011-07-14	2018-08-01	2021-08-01
Soybean	Oilseed	LS 007R22	7074	2011-10-19	2018-08-01	2021-08-01
Soybean	Oilseed	HS 28RYS28	7081	2011-11-18	2018-08-01	2021-08-01
Soybean	Oilseed	PS 1563 R2	7085	2011-12-01	2018-08-01	2021-08-01
Soybean	Oilseed	PS 2393 NR2	7086	2011-12-01	2018-08-01	2021-08-01
Soybean	Oilseed	NSC Anola RR2Y	7087	2011-12-01	2018-08-01	2021-08-01
Soybean	Oilseed	S05-A7	7089	2011-12-06	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Dynamite	7092	2011-12-06	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Impact	7093	2011-12-06	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Platinum	7094	2011-12-06	2018-08-01	2021-08-01
Soybean	Oilseed	Pekko R2	7100	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	R2C2351	7101	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	R2T1741	7102	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	R2C2861	7103	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	PS 0083 R2	7104	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	R2T0221	7106	2011-12-20	2018-08-01	2021-08-01

continued on next page »

PROPOSED LIST OF VARIETY REGISTRATION CANCELLATIONS (CONTINUED)

Crop Kind		Variety	Reg. #	Date Registered	Date Posted	Date of Cancellation
Soybean	Oilseed	32-11RY	7108	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	26-61RY	7109	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	23-10RY	7110	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	CF52GR	7111	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	Currie R2	7112	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	Opto R2	7113	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2725R2	7115	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	Mirada RR	7116	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	Aspen RR	7117	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	Sono R2	7118	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	Theo R2	7119	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	28-12RY	7122	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	29-11RY	7123	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	NSC Elie RR2Y	7124	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	Sampsa R2 1	7125	2011-12-20	2018-08-01	2021-08-01
Soybean	Oilseed	004R21	7137	2012-02-02	2018-08-01	2021-08-01
Soybean	Oilseed	LS 003R22	7164	2012-03-13	2018-08-01	2021-08-01
Soybean	Oilseed	TH 33008R2Y	7215	2012-06-07	2018-08-01	2021-08-01
Soybean	Oilseed	Montero R2	7216	2012-06-07	2018-08-01	2021-08-01
Soybean	Oilseed	S00-T9	7260	2012-11-29	2018-08-01	2021-08-01
Soybean	Oilseed	CF43GR	7261	2012-11-29	2018-08-01	2021-08-01
Soybean	Oilseed	24-61RY	7262	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	26-62RY	7263	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	CF23GR	7264	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	Imana R2	7269	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	LS 002R23	7270	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	PS 1614 NR2	7274	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	R2C0992	7275	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	R2C1782	7276	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Fusion	7277	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	Stealth R2	7278	2012-12-04	2018-08-01	2021-08-01
Soybean	Oilseed	PS 2014 NR2	7283	2012-12-12	2018-08-01	2021-08-01
Soybean	Oilseed	26-12RY	7289	2012-12-17	2018-08-01	2021-08-01
Soybean	Oilseed	PS 2314 NR2	7290	2012-12-17	2018-08-01	2021-08-01
Soybean	Oilseed	CF13GR	7305	2013-01-10	2018-08-01	2021-08-01
Soybean	Oilseed	Santo R2	7459	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	Malibu R2	7463	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	Camaro R2	7464	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	Sanopi R2	7465	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	PRO 2775 R2	7468	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	CF14GR	7470	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	31-61RY	7471	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	Torino R2	7472	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	PS 2945 NR2	7473	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	Corvette R2	7474	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	Nanook R2	7476	2014-01-13	2018-08-01	2021-08-01
Soybean	Oilseed	LS 005R24	7481	2014-02-11	2018-08-01	2021-08-01
Soybean	Oilseed	TH 35002 R2Y	7636	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	CF65GR	7638	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	PS 1315NR2	7640	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	Volt R2	7641	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	24-11RY	7642	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	28-14RY	7643	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	32-12RY	7646	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	R2C2754	7648	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	PS 2335 NR2	7649	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	31-12RY	7650	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	Venture R2	7654	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	Smith R2	7655	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	LS Northwester	7657	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	LS 004R25	7660	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	Carda R2	7661	2015-02-06	2018-08-01	2021-08-01
Soybean	Oilseed	30-12RY	7662	2015-02-09	2018-08-01	2021-08-01
Soybean	Oilseed	DKB06-61	7806	2015-10-09	2018-08-01	2021-08-01
Soybean	Oilseed	DKB20-01	7809	2015-10-09	2018-08-01	2021-08-01
Soybean	Oilseed	DKB24-41	7811	2015-10-09	2018-08-01	2021-08-01
Soybean	Oilseed	PR03225R2X	7819	2015-10-09	2018-08-01	2021-08-01
Soybean	Oilseed	24-12RY	7882	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	25-11RY	7883	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	29-62RY	7886	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	31-14RY	7887	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	32-62RY	7888	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Optic	7890	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	RR2 Capella	7891	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	PS 0088 R2	7893	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	Cairns R2	7894	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	PR03175R2	7895	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	PR02900R2	7897	2016-01-29	2018-08-01	2021-08-01
Soybean	Oilseed	DKB10-01	8016	2016-05-20	2018-08-01	2021-08-01

continued on next page »

PROPOSED LIST OF VARIETY REGISTRATION CANCELLATIONS (CONTINUED)

Crop Kind		Variety	Reg. #	Date Registered	Date Posted	Date of Cancellation
Soybean	Oilseed	22-61RY	8183	2017-02-10	2018-08-01	2021-08-01
Soybean	Oilseed	DKB10-54	8284	2017-06-30	2018-08-01	2021-08-01
Soybean	Oilseed	PS 0044 XRN	8306	2017-07-21	2018-08-01	2021-08-01
Soybean	Oilseed	Zephyr	4553	1997-04-10	2019-08-01	2022-08-01
Soybean	Oilseed	28-60RY	6727	2010-01-29	2019-08-01	2022-08-01
Soybean	Oilseed	22-60RY	7656	2015-02-06	2019-08-01	2022-08-01
Soybean	Oilseed	23-11RY	7659	2015-02-06	2019-08-01	2022-08-01
Soybean	Oilseed	DKB09-91	7807	2015-10-09	2019-08-01	2022-08-01
Soybean	Oilseed	DKB22-21	7810	2015-10-09	2019-08-01	2022-08-01
Soybean	Oilseed	26-14RY	7884	2016-01-29	2019-08-01	2022-08-01
Soybean	Oilseed	DKB26-61	8018	2016-05-20	2019-08-01	2022-08-01
Soybean	Oilseed	DKB03-95	8278	2017-06-30	2019-08-01	2022-08-01
Soybean	Oilseed	DKB12-57	8279	2017-06-30	2019-08-01	2022-08-01
Soybean	Oilseed	DKB17-34	8286	2017-06-30	2019-08-01	2022-08-01
Soybean	Oilseed	DKB06-43	8289	2017-06-30	2019-08-01	2022-08-01
Soybean	Oilseed	DKB007-67	8464	2018-03-29	2019-08-01	2022-08-01
Soybean	Oilseed	DKB02-04	8465	2018-03-29	2019-08-01	2022-08-01

2020 INSURED COMMERCIAL ACRES

This insured acreage report is prepared annually by the Canadian Grain Commission. Seeded area figures reflect insured commercial grain production only. Pedigreed seed production is excluded. Classification of varieties according to their class is based on the Canadian Grain Commission's lists of designated varieties. Variety names shown in this report were based on data keyed from different sources. The CGC has validated and corrected the data as much as possible using official sources. If discrepancies are found, please contact the Canadian Grain Commission. For further information, contact the CGC at 1-800-853-6705.

BY CROP TYPE:

TOTAL INSURED COMMERCIAL ACRES

ALL CROPS	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Canola	73,153		4,465,509	25	9,753,899	55	3,378,691	19	17,671,252	100
Wheat	36,614		4,592,966	35	5,707,394	43	2,872,206	22	13,209,180	100
Barley	31,566	1	2,368,693	51	1,900,174	41	371,821	8	4,672,254	100
Amber durum	34		713,496	17	3,585,969	83	3,821		4,303,320	100
Lentils			337,098	10	2,877,537	89	2,522		3,217,157	100
Peas	45,680	2	1,099,663	37	1,649,919	56	146,562	5	2,941,824	100
Oats	24,461	1	296,759	17	840,637	47	624,199	35	1,786,056	100
Soybeans			480		81,571	7	1,025,788	93	1,107,839	100
Flaxseed			71,306	12	459,570	80	45,213	8	576,089	100
Corn			12,205	4	2,501	1	306,544	95	321,250	100
Canaryseed			1,356	1	212,793	97	5,120	2	219,269	100
Mustard			73,848	34	140,969	65	2,062	1	216,879	100
Beans			57,019	28	4,249	2	142,190	70	203,458	100
Chickpeas			38,125	22	134,460	78			172,585	100
Rye	90		29,823	19	30,670	19	100,665	62	161,248	100
Sunflower			1,491	2	3,745	4	90,341	95	95,577	100
Fababeans			29,351	33	52,387	59	6,679	8	88,417	100
Pea beans							42,923	100	42,923	100
Triticale			25,318	61	13,528	33	2,776	7	41,622	100
Buckwheat							5,681	100	5,681	100
Total	**211,598**		**14,214,506**		**27,451,972**		**9,175,804**		**51,053,880**	

CPSR WHEAT:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CPSR	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
AAC Penhold	3,190	1	297,372	51	44,504	8	11,811	2	356,877	62
AAC Foray			23,128	4	18,816	3			41,944	7
AAC Goodwin			33,992	6			3,191	1	37,183	6
SY Rowyn			4,797	1	10,036	2	20,805	4	35,638	6
5700PR	1,125		30,552	5	3,961	1			35,638	6
AAC Crossfield			30,838	5					30,838	5
Accelerate	25		10,072	2	4,168	1	4,925	1	19,190	3
AAC Ryley			6,872	1	420				7,292	1
AAC Entice			6,420	1	646				7,066	1
5701PR			3,343	1	1,189				4,532	1
5702PR			896						896	
SY985			894						894	
CDC Terrain			685						685	
CDC Reign			373						373	
Total	**4,340**	**1**	**450,234**	**78**	**83,740**	**14**	**40,732**	**7**	**579,046**	**100**

CWAD DURUM:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CWAD	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Transcend	204,633	5	1,258,067	34	2,993		1,465,693	39
CDC Precision	61,876	2	519,070	14	233		581,179	16
Brigade	75,274	2	298,669	8			373,943	10
AAC Spitfire	69,080	2	281,846	8			350,960	9
Strongfield	87,467	2	116,138	3			203,605	5
CDC Alloy	27,521	1	136,617	4			164,138	4
CDC Fortitude	36,930	1	73,329	2	270		110,529	3
AAC Congress	28,827	1	57,406	2			86,233	2
AAC Stronghold	56,087	2	24,962	1			81,049	2
CDC Verona	10,631		49,508	1			60,139	2
AAC Raymore	30,398	1	16,079				46,477	1
CDC Credence	3,083		26,498	1			29,581	1
Eurostar	1,159		26,060	1			27,219	1
Enterprise	6,766		16,902				23,668	1
CDC Dynamic	695		17,172				17,867	
AC Navigator	839		15,313				16,152	
Commander			15,348				15,348	
AAC Current	512		13,330				13,842	
CDC Carbide	294		13,511				13,805	
Kyle	1,017		11,163				12,180	
AAC Succeed	2,497		8,176				10,673	
AAC Cabri			10,022				10,022	
CDC Vivid	4,791		2,050				6,841	
AAC Marchwell			6,431				6,431	
AC Avonlea	1,891		3,631				5,522	
CDC Desire			3,432				3,432	
AAC Grainland	610		768		325		1,703	
AC Morse	400						400	
AAC Donlow	107						107	
AAC Goldnet	75						75	
Total	**713,460**	**19**	**3,021,498**	**81**	**3,821**		**3,738,813**	**100**

Sources: Saskatchewan Crop Insurance, Alberta Agricultural Financial Services Corp, Manitoba Agricultural Services Corporation, BC Crop Insurance.

2020 INSURED COMMERCIAL ACRES (CONTINUED)

CWRS WHEAT:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CWRS	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
AAC Brandon	1,945		1,334,493	12	1,734,986	15	1,664,399	15	4,735,823	42
AAC Viewfield	1,136		648,453	6	431,049	4	314,825	3	1,395,463	12
CDC Landmark	309		79,179	1	771,219	7	49,747		900,454	8
AAC Elie	143		340,584	3	162,305	1	150,866	1	653,898	6
AAC Redberry	741		132,944	1	138,555	1	135,169	1	407,409	4
CDC Plentiful			86,482	1	161,437	1	22,430		270,349	2
Stettler	2,758		240,998	2	17,354		1,082		262,192	2
Cardale			9,237		132,551	1	68,927	1	210,715	2
CDC Go	2,305		200,002	2	4,571		2,336		209,214	2
Carberry			70,906	1	109,351	1	19,905		200,162	2
CDC Utmost			45,584		128,563	1	272		174,419	2
CDC Stanley	1,020		78,877	1	63,420	1	10,428		153,745	1
CDC Hughes	754		29,127		105,869	1	9,874		145,624	1
AAC Cameron			9,500		111,175	1	22,903		143,578	1
CDC Abound			132,049	1	11,091		158		143,298	1
AAC Alida			7,363		121,152	1	14,687		143,202	1
CDC Titanium	2,016		20,357		102,911	1	2,181		127,465	1
AAC Connery	480		81,209	1	17,390		4,835		103,914	1
Glenn			22,311		42,040		13,035		77,386	1
Shaw			19,138		41,568				60,706	1
Bolles			145		4,118		54,917		59,180	1
AAC Redwater	3,227		41,433		5,595		4,227		54,482	
AAC Jatharia					53,765		48		53,813	
AAC Tisdale	1,095		3,713		16,412		31,626		52,846	
CDC Vr Morris			9,553		34,769		5,511		49,833	
Muchmore			42,659		5,099		1,974		49,732	
Superb			21,030		9,463		110		30,603	
Thorsby	540		27,000						27,540	
5605HR CL			9,397		11,366		3,998		24,761	
Sy Torach			1,118		8,289		13,306		22,713	
AC Splendor			7,938		9,961		1,567		19,466	
Goodeve			1,900		16,560				18,460	
AC Barrie			1,768		14,465		2,211		18,444	
Parata	1,943		13,525						15,468	
5604HR CL			4,692		6,006		4,151		14,849	
AC Intrepid	1,023		5,460		7,915		408		14,806	
Waskada					12,691		1,650		14,341	
CDC Imagine			6,351		3,658		2,171		12,180	
AAC Prevail					11,715				11,715	
WR859 CL			1,453		8,983		166		10,602	
Go Early	2,859		7,418						10,277	
AAC Wheatland			6,729		1,866		1,323		9,918	

CWRS	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CDC Adamant			3,002		6,620				9,622	
Vesper					9,378				9,378	
AAC Starbuck			1,720		2,158		3,177		7,055	
AAC Warman			2,928		2,819		825		6,572	
CDC Bradwell			924		5,349		261		6,534	
AC Cadillac			4,510		1,955				6,465	
Prodigy			918		4,162				5,080	
AC Domain					510		4,523		5,033	
SY Sovite			782		3,363		573		4,718	
SY Gabbro			212				4,438		4,650	
AC Elsa			1,626		2,962				4,588	
Daybreak							4,458		4,458	
Roblin			3,023		1,314				4,337	
CDC Ortona			2,095		2,010		85		4,190	
AAC Leroy			1,006		1,890		391		3,287	
Zealand			3,275						3,275	
CDC Teal			1,693		811		274		2,778	
Laura			1,027		1,353				2,380	
SY Obsidian			1,306		942				2,248	
CDC Alsask			2,145						2,145	
CDC Bounty			1,439		680				2,119	
AAC Bailey			1,581				106		1,687	
SY Slate			1,406						1,406	
5602HR					1,232				1,232	
Fieldstar					1,050		48		1,098	
Journey			1,047						1,047	
CDC Thrive			985						985	
Rednet			966						966	
Jake	160		760						920	
Ellerslie			898						898	
AAC Magnet					609		110		719	
AAC W1876			420				225		645	
SY Chert			600						600	
Sheba			561						561	
Coleman			450						450	
Somerset			320						320	
AAC Russell			82				190		272	
SY 433							190		190	
5500HR							45		45	
Infinity			40						40	
AAC Redstar			35						35	
Tracker			1						1	
Total	**24,454**		**3,845,858**	**34**	**4,702,420**	**42**	**2,657,342**	**24**	**11,230,074**	**100**

Sources: Sask Crop Insurance, Alberta Ag Financial Services Corp., Manitoba Agricultural Services Corporation, BC Crop Insurance

2020 INSURED COMMERCIAL ACRES (CONTINUED)

CWRW WHEAT:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CWRW	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
AAC Wildfire	186		42,613	35	7,274	6	1,116	1	51,189	43
AAC Gateway	907	1	11,149	9			8,341	7	20,397	17
AAC Elevate	73		5,584	5			9,252	8	14,909	12
Emerson			600	1	4,600	4	6,884	6	12,084	10
Moats			6,572	5	2,628	2			9,200	8
Radiant	363		6,131	5					6,494	5
CDC Buteo			490		1,408	1	773	1	2,671	2
Flourish					985	1			985	1
AC Bellatrix			575						575	
CDC Osprey			447						447	
AAC Goldrush			310				128		438	
AC Tempest			413						413	
AC Readymade			315						315	
AAC Network			2						2	
Total	**1,529**	**1**	**75,201**	**63**	**16,895**	**14**	**26,494**	**22**	**120,119**	**100**

CNHR WHEAT:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CNHR	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Faller	1,120	1	6,623	3	104,977	53	112,720	57
Prosper	660				31,854	16	32,514	16
AC Foremost	20,375	10	1,096	1			21,471	11
Lillian	898		5,334	3			6,232	3
Conquer	390		5,068	3			5,458	3
AC Crystal	808		3,658	2			4,466	2
Harvest	1,052	1	1,299	1	1,940	1	4,291	2
Oslo	3,601	2					3,601	2
Ac Eatonia			2,008	1	60		2,068	1
Unity			1,428	1	20		1,448	1
Elgin ND			872		498		1,370	1
Pasqua	807						807	
AAC Concord	490						490	
Columbus			445				445	
Kane					411		411	
Katepwa	188				155		343	
AAC Tradition					135		135	
Shelly					120		120	
AC Michael	46						46	
Total	**30,435**	**15**	**27,831**	**14**	**140,170**	**71**	**198,436**	**100**

TRITICALE:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

TRITICALE	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Not Specified	300	1	8,555	21	1,518	4	10,373	25
Pronghorn	1,183	3	4,025	10			5,208	13
Tyndal	3,982	10					3,982	10
AAC Delight	3,835	9					3,835	9
Bunker	2,528	6	948	2	77		3,553	9
Sunray	1,998	5			90		2,088	5
Taza	1,984	5					1,984	5
Brevis	1,630	4			151		1,781	4
Luoma	1,375	3					1,375	3
Traction	1,190	3					1,190	3
Bobcat	1,133	3					1,133	3
Metzger	1,109	3					1,109	3
AC Ultima	902	2					902	2
Fridge	135				542	1	677	2
Surge	607	1					607	1
Pika	366	1			83		449	1
09P144	420	1					420	1
Elevator					315	1	315	1
AC Certa	240	1					240	1
Banjo	165						165	
AC Alta	150						150	
Wapiti	86						86	
Total	**25,318**	**61**	**13,528**	**33**	**2,776**	**7**	**41,622**	**100**

CWHWS WHEAT:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CWHWS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
AAC Whitefox			4,837	40			4,837	40
AAC Iceberg	2,319	19	1,010	8			3,329	27
Snowbird	627	5	1,659	14	381	3	2,667	22
Snowstar					920	8	920	8
Whitehawk	312	3					312	3
AAC Cirrus	132	1					132	1
Total	**3,390**	**28**	**7,506**	**62**	**1,301**	**11**	**12,197**	**100**

CWSWS WHEAT:

INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CWSWS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Sadash	89,996	37	47,893	20			137,889	57
AC Andrew	24,343	10	44,262	18	595		69,200	29
AAC Paramount	15,205	6	2,807	1			18,012	7
AC Chiffon	13,628	6	803				14,431	6
AC Indus	2,378	1					2,378	1
Bhishaj	130						130	
Total	**145,680**	**60**	**95,765**	**40**	**595**		**242,040**	**100**

2020 INSURED COMMERCIAL ACRES (CONTINUED)

NON-MALTING BARLEY: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

NON-MALT	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CDC Austenson	3,945		435,557	20	266,763	12	114,474	5	820,739	37
Not Specified	2,742		2,999		237,197	11	6,140		249,078	11
Brahma			207,605	9	2,611				210,216	10
Canmore			94,068	4	2,127		13,723	1	109,918	5
Champion			79,924	4	18,264	1	4,001		102,189	5
Xena			96,215	4	3,684				99,899	5
CDC Coalition			86,046	4	3,943				89,989	4
Claymore			46,204	2	39,259	2	4,295		89,758	4
Conlon			22,056	1	2,452		58,089	3	82,597	4
Oreana			66,841	3	9,846		1,770		78,457	4
CDC Maverick	295		28,631	1	40,352	2	4,584		73,862	3
Sirish	851		38,364	2			320		39,535	2
CDC Cowboy			20,152	1	13,749	1	1,691		35,592	2
AB Cattlelac	249		10,570		1,930		1,564		14,313	1
CDC Thompson			11,933	1					11,933	1
Amisk			11,069	1					11,069	1
Seebe			10,273						10,273	
CDC Trey			6,856						6,856	
AC Rosser			1,959		4,535				6,494	
Sundre			3,763		2,445				6,208	
Ponoka	70		4,965						5,035	
AC Ranger			2,896		1,456		232		4,584	
CDC Bold			4,079						4,079	
CDC Mcgwire			317		2,714		791		3,822	
Gadsby			2,502		1,041				3,543	
Busby			3,397						3,397	
Otal	2,875		231						3,106	
AC Albright	2,910		52						2,962	
Falcon			2,340		445				2,785	
Stander			2,326						2,326	
CDC Helgason			1,892						1,892	
Bridge			1,653						1,653	
Trochu			1,411						1,411	
AC Lacombe			1,401						1,401	
AB Advantage			1,351						1,351	
CDC Dolly			90		1,018				1,108	
CDC Earl			1,037						1,037	
CDC Aurora Nijo			925						925	
CDC Carter					815				815	
Bonanza			616				193		809	

NON-MALT	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Desperado			155				614		769	
Alston			634				110		744	
Chigwell			601						601	
OAC21			538						538	
Altorado			531						531	
Stetson					504				504	
AC Sirius					485				485	
CDC Stratus			470						470	
Stockford					445				445	
Formosa			398						398	
Vivar			379						379	
Ascension							325		325	
Condor			253						253	
Olli			241						241	
Stein			200						200	
Esma			181						181	
Excel			180						180	
CDC Mindon			177						177	
Summit							160		160	
CDC Alamo			150						150	
B1602			125						125	
Johnston			124						124	
AC Oxbow							110		110	
Volunteer							110		110	
Breton			108						108	
AB Wrangler			97						97	
Kasota			87						87	
Duke			85						85	
Dillon			80						80	
Innovation							70		70	
Oceanik							66		66	
CDC Ascent			55						55	
B 1215			43						43	
Bedford							30		30	
Mcleod			28						28	
AB Tofield			10						10	
AC Stacey			10						10	
TR16742			5						5	
Torbelino			2						2	
Total	**13,937**	**1**	**1,320,513**	**60**	**658,080**	**30**	**213,462**	**10**	**2,205,992**	**100**

FABABEANS: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

FABABEANS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Snowbird	26,213	89	43,699	83	3,802	57	73,714	83
Not Specified			5,099	10	500	7	5,599	6
FB9-4			2,288	4			2,288	3
CDC Snowdrop	795	3	1,301	2			2,096	2
Malik	1,902	6					1,902	2
Taboar	60				1,285	19	1,345	2

FABABEANS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Tabasco					505	8	505	1
DL Tesoro					428	6	428	
Fabelle	286	1					286	
DL Rico	60				119	2	179	
CDC SSNS-1	35				40	1	75	
Total	**29,351**	**100**	**52,387**	**100**	**6,679**	**100**	**88,417**	**100**

Sources: Sask Crop Insurance, Alberta Ag Financial Services Corp., Manitoba Agricultural Services Corporation, BC Crop Insurance

2020 INSURED COMMERCIAL ACRES (CONTINUED)

MALTING BARLEY: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

MALT BARLEY	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CDC Copeland	10,374		468,218	19	555,671	23	30,374	1	1,064,637	43
AAC Synergy	2,104		261,417	11	266,647	11	35,352	1	565,520	23
AC Metcalfe	3,099		144,560	6	276,043	11	19,306	1	443,008	18
AAC Connect	1,767		64,988	3	40,309	2	23,218	1	130,282	5
CDC Bow	220		40,952	2	22,952	1	3,885		68,009	3
Legacy			13,555	1	37,343	2	1,941		52,839	2
CDC Fraser			19,461	1	12,133		10,379		41,973	2
Newdale			6,954		11,556		10,236		28,746	1
Celebration					3,845		13,377	1	17,222	1
CDC Platinum Star			68		11,393				11,461	
Bentley			7,502		868		745		9,115	
Cerveza			6,362						6,362	
Tradition			240		640		5,305		6,185	
Bill Coors 100			3,686						3,686	
CDC Meredith	65		1,015		2,264				3,344	
CDC Copper			2,623				344		2,967	
CDC Kindersley			980		430		402		1,812	
CDC Anderson			1,121				384		1,505	
Stellar-ND							1,447		1,447	
Robust							1,194		1,194	
Major			1,009						1,009	
CDC Yorkton			683				130		813	
CDC Churchill			610						610	
Lacey			270				325		595	
Lowe			589						589	
CDC Battleford			514						514	
CDC Clyde			330						330	
Harrington			200						200	
Merit 57			140						140	
CDC Mayfair			52						52	
AB Brewnet			40						40	
AAC Goldman			19				15		34	
CDC Explus			22						22	
Total	**17,629**	**1**	**1,048,180**	**43**	**1,242,094**	**50**	**158,359**	**6**	**2,466,262**	**100**

CANARYSEED: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CANARYSEED	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Cantate			55,285	26			55,285	25
Keet	1,116	82	50,924	24	2,188	43	54,228	25
Not Specified			51,218	24	309	6	51,527	24
CDC Cibo			21,599	10	1,263	25	22,862	10
CDC Calvi	240	18	19,842	9	418	8	20,500	9
CDC Maria			7,273	3			7,273	3
CDC Togo			3,548	2			3,548	2
CDC Bastia			3,104	1			3,104	1
Elias					942	18	942	
Total	**1,356**	**100**	**212,793**	**100**	**5,120**	**100**	**219,269**	**100**

BEAN: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

BEANS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Vibrant					60,173	42	60,173	30
Windbreaker					27,010	19	27,010	13
Island	17,780	31	758	18			18,538	9
Eclipse					13,479	9	13,479	7
Not Specified	439	1	2,416	57	7,160	5	10,015	5
AAC Whitehorse	8,778	15					8,778	4
Resolute	7,028	12					7,028	3
CDC Blackstrap			590	14	6,243	4	6,833	3
Red Hawk					5,800	4	5,800	3
AAC Tundra	5,091	9					5,091	3
Pink Panther	60				4,163	3	4,223	2
SV6139GR					4,121	3	4,121	2
AAC Y012	4,027	7					4,027	2
AC Black Diamond	3,159	6					3,159	2
AC Redbond	2,427	4					2,427	1
Crimson					2,308	2	2,308	1
SV6533GR					1,598	1	1,598	1
AAC Y015	1,555	3					1,555	1
Chianti					1,417	1	1,417	1
AAC Expedition	1,281	2					1,281	1
Black Tails					1,206	1	1,206	1
Beryl	260				770	1	1,030	1
Etna	236				729	1	965	
AAC Explorer	887	2					887	
Aries	868	2					868	
Monterrey					852	1	852	
CDC WM-2	759	1					759	
Merlot	260				476		736	
Rosetta					728	1	728	
Medicine Hat	685	1					685	
GN Aries					550		550	
Rampart					487		487	
CDC White Mountain			485	11			485	
Sundance					470		470	
Foxfire					441		441	
Floyd					440		440	
Cabernet	200				200		400	
AAC Whitestar	329	1					329	
Cran 09	130				160		290	
Red Rover					290		290	
Winchester	260				24		284	
Dynasty					277		277	
AAC Black Diamond 2	260						260	
Yeti					165		165	
Maverick					156		156	
CDC Marmot	130				4		134	
Fiesta Pinto	130						130	
Montcalm					128		128	
Big Red					116		116	
Talon					30		30	
CDC Superjet					12		12	
CDC Pintium					7		7	
Total	**57,019**	**100**	**4,249**	**100**	**142,190**	**100**	**203,458**	**100**

Sources: Sask Crop Insurance, Alberta Ag Financial Services Corp., Manitoba Agricultural Services Corporation, BC Crop Insurance

2020 INSURED COMMERCIAL ACRES (CONTINUED)

CANOLA: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CANOLA SEEDED AREA	B.C. ACRES	%	ALTA. ACRES	%	SASK. ACRES	%	MAN. ACRES	%	TOTAL ACRES	%
L233P	21,821	30	652,581	15	3,254,071	33	1,535,137	45	5,463,610	31
Not Specified	17,295	24	41,085	1	1,337,774	14	5,894		1,402,048	8
L345PC			227,497	5	426,598	4	262,254	8	916,349	5
L255 PC			210,826	5	357,843	4	300,328	9	868,997	5
L234PC			425,642	10	211,488	2	138,528	4	775,658	4
L252			97,049	2	409,408	4	126,277	4	632,734	4
45CM39	455	1	143,093	3	327,149	3	79,830	2	550,527	3
L241C	300		448,994	10	31,024		3,136		483,454	3
75-65 RR			122,712	3	302,234	3	34,992	1	459,938	3
P501L	2,240	3	141,866	3	231,904	2	82,395	2	458,405	3
1028 RR			78,609	2	175,682	2	77,669	2	331,960	2
L230	6,345	9	69,801	2	173,379	2	24,890	1	274,415	2
L258HPC			43,094	1	186,303	2	22,475	1	251,872	1
75-42 CR			222,672	5	17,290		412		240,374	1
V14-1			29,876	1	192,129	2	10,920		232,925	1
45M35	120		58,040	1	162,002	2	10,625		230,787	1
DKTF 96 SC	1,106	2	59,507	1	86,684	1	65,646	2	212,943	1
1026 RR			27,635	1	88,809	1	61,715	2	178,159	1
6074 RR	513	1	4,537		151,781	2	19,410	1	176,241	1
DKLL 82 SC	735	1	30,370	1	57,208	1	74,709	2	163,022	1
6090 RR			40,414	1	101,566	1	16,668		158,648	1
PV 540 G			26,182	1	111,616	1	11,394		149,192	1
45CS40	1,470	2	68,774	2	73,208	1	2,787		146,239	1
75-45 RR	7,868	11	69,268	2	59,636	1	6,238		143,010	1
45H33			54,045	1	73,024	1	13,525		140,594	1
B3010M			86,076	2	23,469		22,748	1	132,293	1
PV 680 LC			46,420	1	69,136	1	9,972		125,528	1
CS2600 CR-T			96,245	2	17,484		3,202		116,931	1
74-44 BL	534	1	51,890	1	52,360	1	8,820		113,604	1
45H37	550	1	76,146	2	30,402		362		107,460	1
L352C			22,722	1	57,767	1	21,118	1	101,607	1
DKTF98 CR			83,102	2	12,300		3,049		98,451	1
2028 CL			5,204		48,057		40,211	1	93,472	1
46H75			2,556		49,385	1	39,532	1	91,473	1
1024 RR			5,609		59,775	1	17,566	1	82,950	
PV 585 GC			67,880	2			1,628		69,508	
501					67,815	1	1,490		69,305	
Cs2000			49,337	1	15,549		435		65,321	
6076 CR			58,682	1	5,019		433		64,134	
2026 CL			4,126		30,700		27,754	1	62,580	
PV 780 TC			46,858	1	11,024		850		58,732	
PV 760 TM	530	1	20,106		29,257		2,767		52,660	
PV 581 GC	200		44,962	1			393		45,555	
CS2300			3,169		30,997		9,635		43,801	
LR344PC			20,674		12,084		9,546		42,304	
Evolve					35,254		4,579		39,833	
BY 6204 TF			13,065		17,253		5,098		35,416	
PV 681 LC			15,738		19,612				35,350	
DKTFLL 21 SC	595	1	9,433		9,441		15,779		35,248	
PV 200 CL	346		3,783		14,137		16,045		34,311	
V24-1			15,238		13,980		4,286		33,504	
PV 761 TM			2,346		27,563		2,395		32,304	
5545 CL			3,448		18,184		8,102		29,734	
3010 M					26,837				26,837	
PV 591 GCS			24,915	1					24,915	
P502CL			1,775		13,415		9,581		24,771	

CANOLA SEEDED AREA	B.C. ACRES	%	ALTA. ACRES	%	SASK. ACRES	%	MAN. ACRES	%	TOTAL ACRES	%
PV 560 GM			4,387		16,935		3,029		24,351	
D3155C			5,085		16,916		2,114		24,115	
CS2100			9,183		6,768		4,515		20,466	
581PV GC					18,527				18,527	
V12-1			1,248		16,800				18,048	
1022 RR			2,086		5,811		9,620		17,517	
45H75					10,218		6,208		16,426	
DKTF 92 SC			9,360		4,865		1,220		15,445	
45M38	95		4,564		10,420		265		15,344	
V33-1 CL					11,421		3,882		15,303	
B3011			8,065		4,963		2,152		15,180	
45H76			1,151		9,757		3,862		14,770	
CS2400	123		10,352		3,652		419		14,546	
585PV GC					14,112				14,112	
43 E03	1,598	2	11,042		1,395				14,035	
2024 CL			1,747		3,941		7,729		13,417	
PV 530 G			1,890		6,009		4,377		12,276	
PV 531 G	205		11,735				205		12,145	
BY 5105 CL			1,713		8,727		1,471		11,911	
45H31			2,142		7,627		483		10,252	
3156M D					9,646				9,646	
PV 660 LCM					7,604		1,837		9,441	
CS2500 CL	4,773	7	1,277		3,108				9,158	
CS2500							8,526		8,526	
L140P			1,223		6,254		900		8,377	
45CM36			2,013		5,533		744		8,290	
45H35					8,200				8,200	
V12-3			3,826		3,930				7,756	
V25-1T			557		7,173				7,730	
4187 RR			5,738				1,410		7,148	
DKTF94CR	145		5,661		649		140		6,595	
4166 RR			392		5,934				6,326	
Hyhear 3			1,064		4,957		80		6,101	
L130			2,093		3,604		346		6,043	
46M35					5,327				5,327	
CS2200 CL			1,305		3,483		512		5,300	
Hyhear 1					4,834		450		5,284	
Evolve			5,055						5,055	
DKLL 81 BL			435		4,070		310		4,815	
73-65 RR			4,231		450		47		4,728	
34-55			1,809		2,872				4,681	
45A51							4,585		4,585	
591PV GCS					4,561				4,561	
79K					2,575		1,916		4,491	
D3156M			3,020				1,430		4,450	
4157 RR			1,086				2,734		3,820	
6080 RR			1,327		2,218		246		3,791	
1918			330		3,280		124		3,734	
5440			1,889		1,098		699		3,686	
73-45 RR	489	1	992		1,710		225		3,416	
1012 RR			1,987		1,142		250		3,379	
PV 590 GCS			1,702		1,648				3,350	
L135C			2,455		889				3,344	
46A76					2,391		860		3,251	
SW Wizzard			320		876		1,868		3,064	
45H29			1,029		1,897				2,926	

2020 INSURED COMMERCIAL ACRES (CONTINUED)

CANOLA: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CANOLA SEEDED AREA	B.C. ACRES	%	ALTA. ACRES	%	SASK. ACRES	%	MAN. ACRES	%	TOTAL ACRES	%
6044 RR			243		2,375		279		2,897	
68K					1,166		1,731		2,897	
L150			648		1,882		275		2,805	
L157H					1,642		1,060		2,702	
2563					2,379		295		2,674	
PV 580 GC			2,595						2,595	
243 CL			2,524						2,524	
VT 530 G					2,501				2,501	
V22-1			318		1,562		542		2,422	
L261			290		1,975				2,265	
5505 CL			724		1,408				2,132	
2463					2,067				2,067	
6020 RR			1,106		845		60		2,011	
CP19R1C			883		1,126				2,009	
6040 RR			798		1,190				1,988	
74-54 RR			1,825				40		1,865	
46H76							1,848		1,848	
Synergy	268		773		730		10		1,781	
9560 CL					1,708				1,708	
5108			219		1,477				1,696	
UA Alfagold			1,692						1,692	
2020 CL			1,072				574		1,646	
500			996		648				1,644	
1134 CA							1,617		1,617	
NX4-202 CL					1,601				1,601	
5525 CL			1,391				170		1,561	
VT 510 G			1,515						1,515	
75-43 RR			1,477						1,477	
624 RR			913		529				1,442	
45A76					640		794		1,434	
3345			160				1,257		1,417	
L120			434		974				1,408	
SY4166							1,377		1,377	
73-15 RR	100		1,256						1,356	
NX4-102 RR					1,310				1,310	
Early One			1,305						1,305	
5535 CL					893		410		1,303	
43 E01			1,299						1,299	
72-65 RR			1,297						1,297	
VR 9559 G					1,288				1,288	
1867			1,233						1,233	
580PV GC					1,209				1,209	
75-57					1,172				1,172	
UA Bountygold			1,150						1,150	
6060 RR			465		585		100		1,150	
P508MCL							1,140		1,140	
VT 500 G					968		155		1,123	
46A52							1,056		1,056	
CP20R3C			512				540		1,052	
C5507			1,023						1,023	
34-65					863		157		1,020	
CS 2600	1,019	1							1,019	
74-75 RR					1,002				1,002	
PV 533 G			690				290		980	
H4250					954				954	
45A71			902						902	

CANOLA SEEDED AREA	B.C. ACRES	%	ALTA. ACRES	%	SASK. ACRES	%	MAN. ACRES	%	TOTAL ACRES	%
1016 RR			895						895	
5020					559		329		888	
45H73			125		725				850	
9610 CL			805						805	
1020 RR			703				95		798	
225 RR					740				740	
Nex 828 CL			737						737	
V32-1 CL			709						709	
Nex 500			700						700	
6086 CR			692						692	
NC355TF	394	1					273		667	
Defender					665				665	
AC Excel			664						664	
45H32			633						633	
519 RR			633						633	
46H73					630				630	
P607CL							625		625	
VR 9562 GC			610						610	
2153							605		605	
74-47 CR			600						600	
71-20 CL					593				593	
84S01LL			558						558	
VR 9560 CL			537						537	
45H20			522						522	
45S56			435				50		485	
46A65					475				475	
45H26			190				279		469	
6064 RR			230				234		464	
SW Spirit River			443						443	
2022 CL							439		439	
71-45 RR			434						434	
V2010			393						393	
45H22			375						375	
43 E03 RR							372		372	
46M34							370		370	
72-55 RR			368						368	
30-55							332		332	
H215	331								331	
V1030			330						330	
45M37	320								320	
L156H			303				14		317	
PEACE			305						305	
223 RR							294		294	
6056 CR			265						265	
997 RR			265						265	
45H72			251						251	
V1050			247						247	
NX4-106 RR			232						232	
NX4-101 RR			230						230	
75-57 RR			227						227	
43 E02			210						210	
5070			190						190	
72-35 RR							184		184	
71-40 CL							180		180	
V12-2							160		160	
1604							160		160	

2020 INSURED COMMERCIAL ACRES (CONTINUED)

CANOLA: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CANOLA	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
45M39	160								160	
VR 9553 G							158		158	
D3152			151						151	
BY 6207 TF							150		150	
45H74			140						140	
G49738			136						136	
45S52			136						136	
41P55			125						125	
454 RR			123						123	
45CM44							120		120	
V1010							115		115	
73-75 RR							112		112	
45C S40	110								110	
LR250			108						108	

CANOLA	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
74P00 LL			92						92	
D3150			90						90	
SY4135			89						89	
NX4-105 RR			88						88	
74-01 RR			80						80	
6050 RR							70		70	
6045 CL			65						65	
1990							60		60	
08H0004			60						60	
P506ML							57		57	
45H21							42		42	
9551							15		15	
1018 RR			12						12	
Total	**73,153**	**100**	**4,465,509**	**100**	**9,753,899**	**100**	**3,378,691**	**100**	**17,671,252**	**100**

CORN: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CORN	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
P7211AM					49,542	16	49,542	15
P7527AM					37,993	12	37,993	12
P7417AM					23,744	8	23,744	7
DKC33-78RIB					23,345	8	23,345	7
DKC29-89RIB					19,021	6	19,021	6
P7861AM					17,481	6	17,481	5
P7455R					14,080	5	14,080	4
Not specified	12,205	100			1,530	1	13,735	4
P7211HR			2,501	100	7,362	2	9,863	3
P7940AM					8,291	3	8,291	3
P7958AM					6,737	2	6,737	2
DKC26-40					6,429	2	6,429	2
A4939G2 RIB					5,348	2	5,348	2
DKC35-88RIB					4,267	1	4,267	1
TH 6977 VT2P					3,772	1	3,772	1
TH7578 VT2P					3,599	1	3,599	1
2123 VT2P RIB					3,551	1	3,551	1
TH 6982 VT2P					2,955	1	2,955	1
TH6079 VT2P					2,920	1	2,920	1
P7417R					2,827	1	2,827	1
PV 61180 RIB					2,627	1	2,627	1
LR 9983 VT2PRIB					2,501	1	2,501	1
TH 6875 VT2P					2,462	1	2,462	1
TH 7578 VT2P RIB					2,339	1	2,339	1
P8234AM					2,273	1	2,273	1
DKC 23-17 RIB					2,099	1	2,099	1
P8407AM					2,041	1	2,041	1
P7861R					2,002	1	2,002	1
P7202AM					1,855	1	1,855	1
DKC24-06RIB					1,825	1	1,825	1
P7005AM					1,788	1	1,788	1
DKC31-85RIB					1,783	1	1,783	1
MZ 1688 DBR					1,697	1	1,697	1

CORN	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
TH4072 RR					1,406		1,406	
DKC21-36RIB					1,356		1,356	
A3993G2 RIB					1,336		1,336	
LR 9076 VT2PRIB					1,168		1,168	
DKC 32-12 RIB					1,063		1,063	
TH 7677 VT2P RIB					1,029		1,029	
P7632AM					964		964	
NK 7837					940		940	
PV60075 RIB					903		903	
PS 2210VT2P RIB					880		880	
DKC27-55 RIB					815		815	
2288VT2P					800		800	
MZ 1624DBR					779		779	
TH6081 3220					738		738	
TH 7681 VT2P					693		693	
LR 9563 VT2RIB					672		672	
AS1047RR EDF					615		615	
NS 72-521 VT2P RIB					608		608	
P7958YHR					590		590	
P7572AMXT					567		567	
DKC28-79RIB					550		550	
DKC30-07 RIB					509		509	
MZ 1633DBR					458		458	
P7445R					432		432	
DKC29-88					409		409	
DL 1081					394		394	
LR 9980 VT2PRIB					390		390	
LR 9874RR VT2P RIB					387		387	
LR 9579 RR					378		378	
9474					364		364	
AS1037RR EDF					357		357	
HZ 750					350		350	
DL 1111					350		350	

Sources: Sask Crop Insurance, Alberta Ag Financial Services Corp., Manitoba Agricultural Services Corporation, BC Crop Insurance

2020 INSURED COMMERCIAL ACRES (CONTINUED)

CORN: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CORN	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
HZ 1885					344		344	
A4646G2 RIB					344		344	
P8034					340		340	
DL 777					335		335	
DL 800					329		329	
DKC 30-19 RIB					320		320	
PV 62282 RIB					310		310	
TH 7673					305		305	
DKC33-37RIB					295		295	
MZ 1340DBR					289		289	
TH7677 VT2P					279		279	
39V09AM					263		263	
HZ 675					254		254	
LR 9474 VT2P RIB					245		245	
P7535HR					242		242	
PS 2444VT2P RIB					240		240	
39P78					225		225	
A4199G2 RIB					210		210	
TH4126 RR					201		201	
PV 61079 RIB					200		200	
27-10RY					200		200	
P7227R					200		200	
E49K32 R					188		188	
PV 60172RR					185		185	
P8700AM					182		182	
39B90					170		170	
TH 7574 VT2P RIB					160		160	
P8352AM					158		158	
TH 2477					156		156	
DK335RR					155		155	
LNG 9091 RR					155		155	
LR 9972 GT					153		153	
DKC24-05					145		145	
P8542AM					140		140	
P8736AM					138		138	
PS 2333RR					136		136	
A4705HMRR					132		132	
DKC27-33					130		130	
A4240RR					127		127	
LR 9676VT2P RIB					121		121	
P7535R					116		116	
3337VT2P/RIB					114		114	

CORN	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
HZ 1912					110		110	
P8352AMXT					107		107	
P8581R					105		105	
TH7681 VT2P					105		105	
TH7673 VT2P					105		105	
MS 7420R					100		100	
PS 2552RR					80		80	
HZ 760GT					80		80	
PS 2320RR					80		80	
DKC53-72RIB					80		80	
P3979					80		80	
2417 VT2P RIB					80		80	
2219 RR					80		80	
PRIME					75		75	
DKC34-57RIB					75		75	
A4099RR					70		70	
3075					67		67	
PS 2321VT2P RIB					60		60	
MZ 1200DBR					56		56	
E52V92 R					55		55	
A5225G2 RIB					51		51	
2845 SS RIB					50		50	
P7332R					50		50	
LR 9882 RR					45		45	
DKC29-95					44		44	
P7410HR					40		40	
DKC28-76					40		40	
PV61079RIB					40		40	
P9330AM					38		38	
P6909R					35		35	
HZ 1265					31		31	
P7443R					24		24	
E53G52 R					23		23	
LR 99S77 RR					22		22	
DKC 23-22 RIB					20		20	
MZ 3964DBR					20		20	
LR 9875R					20		20	
DKC32-92					17		17	
LR 9473 RR					12		12	
2304 RR					5		5	
Total	**12,205**	**100**	**2,501**	**100**	**306,544**	**100**	**321,250**	**100**

Sources: Sask Crop Insurance, Alberta Ag Financial Services Corp., Manitoba Agricultural Services Corporation, BC Crop Insurance

2020 INSURED COMMERCIAL ACRES (CONTINUED)

PEAS: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

PEAS	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CDC Meadow	22,717	50	460,298	42	274,238	17	15,497	11	772,750	26
Not Specified	9,047	20	12,584	1	324,406	20	1,895	1	347,932	12
AAC Carver	9,369	21	138,665	13	86,371	5	44,529	30	278,934	9
CDC Amarillo	402	1	35,167	3	165,827	10	21,092	14	222,488	8
CDC Inca	185		62,582	6	134,579	8	5,385	4	202,731	7
CDC Saffron			96,698	9	36,282	2	2,453	2	135,433	5
CDC Limerick	136		35,217	3	77,831	5	405		113,589	4
CDC Spectrum			11,857	1	99,917	6	1,611	1	113,385	4
CDC Raezer	1,723	4	29,084	3	78,013	5	3,130	2	111,950	4
AAC Ardill			12,859	1	57,790	4			70,649	2
AAC Chrome			35,979	3	20,660	1	12,441	8	69,080	2
CDC Striker			25,112	2	33,942	2	1,266	1	60,320	2
AAC Lacombe			46,342	4	5,735		4,816	3	56,893	2
CDC Greenwater			8,156	1	42,874	3	1,539	1	52,569	2
CDC Spruce			6,054	1	42,704	3	910	1	49,668	2
Abarth			5,268		20,396	1	17,939	12	43,603	1
CDC Golden			1,803		39,292	2			41,095	1
CDC Forest			6,356	1	24,583	1	2,798	2	33,737	1
CDC Mosaic			4,751		18,404	1			23,155	1
CDC Treasure			4,731		5,510				10,241	
CDC Blazer			581		8,911	1			9,492	
CDC Acer			1,830		5,777		848	1	8,455	
CDC Dakota			315		7,064				7,379	
Garde			7,184	1					7,184	
AAC Peace River	668	1	5,803	1					6,471	
AAC Barrhead	748	2	5,581	1					6,329	
4010			944		845		3,573	2	5,362	
LN4228			5,109						5,109	
CDC Canary			2,862		1,889				4,751	
Ds-Admiral			285		4,190				4,475	
CDC Tetris			2,252		2,180				4,432	
CDC Hornet			200		3,995				4,195	
CDC Lewochko			535		3,490		112		4,137	
AAC Liscard			1,410		2,675				4,085	
CDC Bronco					4,078				4,078	
AAC Comfort	685	2	3,262						3,947	
CDC Sage			503		3,257				3,760	
CDC Patrick			892		2,016		73		2,981	
Eclipse			641		2,228				2,869	
CDC Centennial			2,741						2,741	
CDC Pluto			2,118						2,118	
Delta					1,952				1,952	
Trapper			1,664						1,664	
Agassiz			298		802		543		1,643	
Eiffel			1,608						1,608	
Banner			1,558						1,558	
Croma			66		1,031		445		1,542	
Livioletta							1,522	1	1,522	
Camry			300		1,215				1,515	
Sw Midas			1,377						1,377	
CDC Athabasca							1,295	1	1,295	
CDC Mozart					1,186				1,186	
Cooper			663		475				1,138	
Espace			1,067						1,067	
CDC Horizon			750						750	
Sw Marquee					695				695	
Sw Salute			632						632	
Carneval			620						620	
Midori					614				614	
Sorento			610						610	
Rhino			562						562	
AAC Profit			468						468	
Blueman			440						440	
Yellowhead			293				85		378	
Grande			320						320	
Canstar			320						320	
Stratus			270						270	
CDC Minuet			260						260	
AAC Delhi			248						248	
Cpb Concorde			215						215	
CDC Jasper							200		200	
Bibao			155						155	
Mendel			145						145	
Granger							140		140	
Lincoln			115						115	
Dl Lacross			27						27	
Ac Earlystar							20		20	
Total	**45,680**	**100**	**1,099,663**	**100**	**1,649,919**	**100**	**146,562**	**100**	**2,941,824**	**100**

CHICKPEAS: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

CHICKPEAS	ALTA.		SASK.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%
CDC Leader	1,997	5	79,508	59	81,505	47
CDC Orion	34,525	91	25,986	19	60,511	35
Not Specified			19,330	14	19,330	11
Amit (B 90)	920	2	6,487	5	7,407	4
CDC Frontier	638	2	2,594	2	3,232	2
CDC Alma			555		555	
CDC Palmer	45				45	
Total	**38,125**	**100**	**134,460**	**100**	**172,585**	**100**

MUSTARD: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

MUSTARD	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Andante	56,515	77	47,640	34	1,507	73	105,662	49
Not Specified			51,275	36	510	25	51,785	24
Centennial Brown	2,980	4	26,066	18	45	2	29,091	13
AC Pennant	10,679	14	1,870	1			12,549	6
Cutlass	769	1	7,865	6			8,634	4
Forge	2,423	3	5,380	4			7,803	4
AAC Adagio	215		873	1			1,088	1
AAC Oriental 200	160						160	
Ace	77						77	
AAC Yellow 80	30						30	
Total	**73,848**	**100**	**140969**	**100**	**2062**	**100**	**216879**	**100**

2020 INSURED COMMERCIAL ACRES (CONTINUED)

LENTILS:
INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

LENTILS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CDC Maxim	149,697	44	792,759	28	422	17	942,878	29
Not Specified	1,264		579,167	20	530	21	580,961	18
CDC Proclaim	45,522	14	321,086	11			366,608	11
CDC Impulse	34,203	10	313,598	11	166	7	347,967	11
CDC Greenstar	28,219	8	201,767	7			229,986	7
CDC Dazil	27,241	8	144,320	5			171,561	5
CDC Imvincible			163,300	6	1,080	43	164,380	5
CDC Greenland			136,843	5			136,843	4
CDC Impower	14,379	4	67,261	2			81,640	3
CDC Improve	16,686	5	30,683	1			47,369	1
Redmoon			41,940	1			41,940	1
CDC Imax	12,709	4	17,100	1			29,809	1
CDC Kermit			14,515	1			14,515	
CDC Viceroy			10,197				10,197	
CDC Impact	1,480		7,185				8,665	
CDC Impress			4,674				4,674	
CDC Imperial	1,983	1	2,641				4,624	
CDC Richlea	1,660		2,830				4,490	
CDC Lima			4,401				4,401	
Beluga			3,815				3,815	
CDC Peridot CL			3,055				3,055	
Indian Head			2,666				2,666	
CDC Iberina			1,896				1,896	
CDC Redberry			1,686				1,686	
CDC Glamis			1,686				1,686	
CDC Simmie			1,206				1,206	
CDC Rouleau			1,154				1,154	
CDC Redmoon	775				324	13	1,099	
CDC Redcoat	1,066						1,066	
CDC Sovereign			950				950	
CDC Blaze	73		829				902	
CDC Impala			785				785	
CDC SB-1			572				572	
CDC Marble			555				555	
CDC Lemay			415				415	
CDC Nimble	141						141	
Total	**337,098**	**100**	**2,877,537**	**100**	**2,522**	**100**	**3,217,157**	**100**

FLAX:
INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

FLAX	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CDC Glas	25,683	36	136,344	30	14,116	31	176,143	31
Not Specified	130		100,395	22	705	2	101,230	18
CDC Sorrel	7,259	10	70,508	15	6,870	15	84,637	15
CDC Bethune	4,954	7	58,529	13	5,095	11	68,578	12
AAC Bravo	6,315	9	15,820	3	3,668	8	25,803	4
CDC Neela	1,252	2	10,663	2	4,874	11	16,789	3
Westlin 72	1,736	2	11,689	3	2,240	5	15,665	3
CDC Sanctuary	2,705	4	10,993	2			13,698	2
VT50	77		10,355	2	1,604	4	12,036	2
Omega	1,143	2	7,864	2	288	1	9,295	2
Prairie Sapphire	4,084	6	4,867	1			8,951	2
Westlin 71	2,070	3	5,339	1	147		7,556	1
CDC Plava	1,660	2	2,380	1	822	2	4,862	1
CDC Dorado	3,519	5	595				4,114	1
Topaz	1,735	2			2,090	5	3,825	1
Vimy			3,748	1			3,748	1
Westlin 70	436	1	2,676	1	322	1	3,434	1
AAC Bright	447	1	2,041		539	1	3,027	1
AAC Marvelous	2,196	3					2,196	
AAC Prairie Sunshine	2,172	3					2,172	
Hanley	597	1			1,214	3	1,811	
Taurus			1,474		155		1,629	
Prairie Blue			1,133				1,133	
AC Watson			876				876	
Somme			842				842	
Westlin 60	534	1			277	1	811	
AC Lightning			439				439	
Mcgregor	352						352	
Lightning					140		140	
CDC Rowland	95				7		102	
CDC Gold	75						75	
AC Mcduff	40						40	
CDC Buryu	40						40	
Golden					30		30	
AC Emerson					10		10	
Total	**71,306**	**100**	**459,570**	**100**	**45,213**	**100**	**576,089**	**100**

RYE: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

RYE	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Hazlet			2,792	2	12,610	8	29,456	18	44,858	28
KWS Bono			1,984	1	2,772	2	23,256	14	28,012	17
Guttino			5,946	4			12,301	8	18,247	11
KWS Daniello	19		10,153	6			7,687	5	17,859	11
KWS Gatano			735		435		15,837	10	17,007	11
Not Specified			217		12,351	8	3,673	2	16,241	10
Prima			1,849	1	502		3,198	2	5,549	3
Danko					405		3,232	2	3,637	2
Dakota			2,166	1					2,166	1
Brasetto	71		394				1,211	1	1,676	1
KWS Propower			1,145	1					1,145	1
Gazelle					1,045	1	28		1,073	1
AC Remington			899	1			71		970	1
Musketeer			830	1					830	1
Gauthier					550				550	
AC Rifle			224				212		436	
KWS Trebiano			150				188		338	
Puma							315		315	
KWS Progas			260						260	
Cougar			79						79	
Total	**90**		**29,823**	**19**	**30,670**	**19**	**100,665**	**62**	**161,248**	**100**

2020 INSURED COMMERCIAL ACRES (CONTINUED)

SOYBEANS: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

SOYBEANS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
S007-Y4			4,688	6	174,866	17	179,554	16
S0009-M2			8,536	10	51,814	5	60,350	5
LS Mistral					49,686	5	49,686	4
DKB005-52					49,175	5	49,175	4
Not Specified	480	100			44,562	4	45,042	4
P006A37X			1,090	1	41,659	4	42,749	4
TH 87003 R2X					39,001	4	39,001	4
NSC Warren RR			19,484	24	18,786	2	38,270	3
Akras R2			2,598	3	31,323	3	33,921	3
ISISRR			24,340	30	6,561	1	30,901	3
NSC Sperling RR2Y					29,417	3	29,417	3
P005A27X			830	1	21,962	2	22,792	2
25-10 RY					22,418	2	22,418	2
PS 0027 RR					18,874	2	18,874	2
S006-M4X RR2X					18,078	2	18,078	2
24-10 RY					16,866	2	16,866	2
NSC Winkler RR2x					14,718	1	14,718	1
NSC Watson RR2y					14,457	1	14,457	1
P00A49X					12,503	1	12,503	1
LS 001XT					11,607	1	11,607	1
DKB003-29 RR2x					11,402	1	11,402	1
Mahony R2			2,694	3	8,083	1	10,777	1
LS Solaire					10,591	1	10,591	1
OAC Prudence					10,472	1	10,472	1
LS 003R24N					10,463	1	10,463	1
Astro R2					10,348	1	10,348	1
LS 007XT					10,285	1	10,285	1
B003-29					10,080	1	10,080	1
23-60 RY					9,510	1	9,510	1
P001A48X RR2X					9,490	1	9,490	1
NSC Gladstone RR2Y					9,038	1	9,038	1
DKB0009-89 RR2X					8,997	1	8,997	1
Siberia			2,338	3	6,323	1	8,661	1
S003-Z4X RR2X					8,288	1	8,288	1
TH 88007 R2X					6,962	1	6,962	1
DKB0005-44 RR2X					6,865	1	6,865	1
Barker R2X					6,660	1	6,660	1
P005A83X RR2X					6,412	1	6,412	1
NSC Redvers RR2X					6,343	1	6,343	1
LS Eclipse					6,196	1	6,196	1
Bourke R2X					5,900	1	5,900	1
NSC Richer RR2Y					5,159	1	5,159	
Nocoma R2					5,098	1	5,098	
TH 33003 R2Y					4,976		4,976	
P007A08X			1,085	1	3,878		4,963	
DKB002-32 RR2X					4,847		4,847	
P003A97X RR2X					4,754		4,754	
Sunna R2X					4,608		4,608	
PV 16S004 R2X					4,478		4,478	
S006-W5					4,321		4,321	
DKB005-51					4,295		4,295	
NSC Aubigny RR2X					4,163		4,163	
Torro R2			585	1	3,386		3,971	

SOYBEANS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
P002A63R			1,215	1	2,737		3,952	
LS 0036RR					3,757		3,757	
TH 89004 R2X					3,462		3,462	
Devo R2X			2,302	3	1,063		3,365	
NSC Newton RR2X					3,162		3,162	
DKB006-99 RR2X					3,158		3,158	
PV 15S0009 R2X					2,808		2,808	
PS0027R1			2,801	3			2,801	
DKB006-29					2,779		2,779	
LS 003R22					2,701		2,701	
NSC Cartier					2,503		2,503	
Kudo R2X					2,503		2,503	
PS 0068 XR RR2X					2,457		2,457	
TH 88005 R2X					2,397		2,397	
NSC Culross RR2X					2,384		2,384	
Prince R2X					2,085		2,085	
2005 RR					1,956		1,956	
Mcleod R2			1,473	2	461		1,934	
P007A90R					1,924		1,924	
RX00797 RR2X					1,917		1,917	
AAC Edward					1,830		1,830	
RX Acron					1,692		1,692	
TH 33005 R2Y					1,644		1,644	
Notus R2			692	1	931		1,623	
NSC Watson RR2Y			1,485	2			1,485	
Th 32004 R2y					1,457		1,457	
Bishop R2					1,442		1,442	
B0066I1					1,401		1,401	
Maxus					1,386		1,386	
Amirani R2					1,382		1,382	
Fisher R2X					1,363		1,363	
S0007B-7X RR2					1,346		1,346	
Astor					1,218		1,218	
PS 0074 R2					1,177		1,177	
P0007A73X RR2X					1,153		1,153	
LS 004XT					1,105		1,105	
Elmo E3					1,063		1,063	
NSC Coulee RR					1,050		1,050	
TH 87000 R2X					1,010		1,010	
Redvers NSC RR2X			987	1			987	
DH863					978		978	
Vidar R2X					969		969	
S001-D8X RR2X					902		902	
LS 007R22					860		860	
PV 12S007 RX2					792		792	
Hana					765		765	
TH 27003RR					764		764	
TH 24004RR					760		760	
DKB04-41					750		750	
Dinero R2X					741		741	
LS 004R21					733		733	
P00A75X					717		717	
900Y71 RR			690	1			690	

Sources: Sask Crop Insurance, Alberta Ag Financial Services Corp., Manitoba Agricultural Services Corporation, BC Crop Insurance

2020 INSURED COMMERCIAL ACRES (CONTINUED)

SOYBEANS: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

SOYBEANS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
AC 0800RR					684		684	
P002A19X			658	1			658	
S007-A2XS RR2					654		654	
PS 0044 XRN					613		613	
Mani R2X					610		610	
25-04R					608		608	
NSC Jordan RR2Y					591		591	
Accord					570		570	
DKB21-11					548		548	
900Y61					546		546	
0066 Xr					516		516	
S00-W3			510	1			510	
LS 0065RR					510		510	
DKB0005-44			490	1			490	
NSC Mollard					480		480	
CP005WPRX RR2					480		480	
Kebek					480		480	
Renuka R2X					465		465	
90B11					456		456	
XB005Q19X RR2X					455		455	
Meteor					450		450	
24-12 RY					446		446	
26006 RR					430		430	
B0040L1					424		424	
LS 001E020					411		411	
P001T34R					409		409	
900M71					401		401	
22-60 RY					385		385	
NSC Exp002E					375		375	
CP18WPRX RR2X					365		365	
TH 79009 E					360		360	
DKB007-67 RR2X					320		320	
90Y01					320		320	
Fjord					320		320	
LS 005R21					310		310	
Merritt R2X					305		305	
P006T46R					290		290	
PV 14S008 RR2					280		280	
90M01					278		278	
LS 0028RR					277		277	
N001					270		270	
TH 33004R2Y					268		268	
S008-N2					264		264	
TH 3303 R2Y					262		262	
PV10S005RR2					256		256	
NSC 2011RR					251		251	
LS 005R24					244		244	
TH89009 R2XN					243		243	
Foote R2					241		241	
S001-B1					240		240	
NSC Starbuck RRX2					237		237	

SOYBEANS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
Fresco R2X					230		230	
NSC Leroy RR2Y					225		225	
DKB01-11					222		222	
25-52R					220		220	
90M02					220		220	
S 00-55					215		215	
NSC 2002					209		209	
RX00918					170		170	
P002T04R					170		170	
TH 35003RR					167		167	
5007					163		163	
TH 2505RR					160		160	
LS 006XT					160		160	
NSC2001					160		160	
XB001D19X RR2X					155		155	
S003-L3					155		155	
703					155		155	
S0009-F2X RR2					150		150	
P0007A43R					150		150	
Dayo R2X					148		148	
P007408X					148		148	
LS TRI8XT RR2X					145		145	
90A06					145		145	
PV 19S006 R2X					140		140	
Karpo R2					140		140	
Azalea					140		140	
NSC Arnaud RR2Y					139		139	
DKB24-41					134		134	
Mateo R2					120		120	
Vito R2					100		100	
AAC Halli					100		100	
Maris R2X					98		98	
S005-C9X RR2X					82		82	
Dugaldo R2X					80		80	
NSC Reston RR2Y					75		75	
TH 88009 R2X					75		75	
DKB008-81					70		70	
ND17009GT					70		70	
NSC Tilston RR2Y					61		61	
23-11 RY					60		60	
B00071RX					53		53	
RX00218					50		50	
OAC Morden					30		30	
27005 RR					25		25	
P0007A65R					25		25	
TH 23006RR					23		23	
CW1660208-2					20		20	
AAC Mandor					15		15	
OAC Carman					15		15	
CW1760535 RR2					9		9	
Total	**480**	**100**	**81,571**	**100**	**1,025,788**	**100**	**1,107,839**	**100**

Sources: Sask Crop Insurance, Alberta Ag Financial Services Corp., Manitoba Agricultural Services Corporation, BC Crop Insurance

2020 INSURED COMMERCIAL ACRES (CONTINUED)

OATS: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

OATS	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CS Camden	6,706		40,776	2	276,106	15	220,538	12	544,126	30
AC Morgan	9,313	1	161,662	9	118,544	7	7,832		297,351	17
Summit			1,244		65,754	4	206,228	12	273,226	15
Not Specified	872		401		132,068	7	11,705	1	145,046	8
ORE3542M	296		7,177		5,694		47,539	3	60,706	3
CDC Arborg	1,907		6,731		31,660	2	20,191	1	60,489	3
Triactor					52,417	3	771		53,188	3
Souris					17,208	1	27,842	2	45,050	3
CDC Ruffian	527		4,779		35,493	2			40,799	2
CDC Haymaker	120		3,719		12,512	1	16,432	1	32,783	2
CDC SO-I			10,831	1	8,866	1	5,592		25,289	1
AC Mustang	3,828		13,026	1	3,236		680		20,770	1
Derby	150		12,428	1	7,601		375		20,554	1
CDC Dancer			238		15,566	1	1,726		17,530	1
Pinnacle					5,466		12,028	1	17,494	1
ORE3541M			422		1,753		14,977	1	17,152	1
CDC Nasser			12,712	1	2,979		1,354		17,045	1
Leggett					8,689		3,742		12,431	1
CDC Minstrel			315		10,953	1			11,268	1
CDC Baler			5,985		2,359		2,890		11,234	1
CDC Orrin			290		7,798				8,088	
CDC Morrison					5,016		2,094		7,110	
Calibre	392		1,630		3,343		76		5,441	
Waldern	280		4,527						4,807	
Furlong							3,570		3,570	
CDC Big Brown			490		779		1,985		3,254	
Sw Betania					3,074				3,074	
Haywire							3,048		3,048	
Triple Crown			32		644		1,663		2,339	
CDC Norseman			240		1,802		150		2,192	
AC Assiniboia							2,004		2,004	
Gehl			110		838		785		1,733	
Harmon			1,317				30		1,347	
Stride			48		555		734		1,337	
Grizzly			1,294						1,294	
CDC Boyer			20		947		80		1,047	
Canmore			333				675		1,008	

OATS	B.C.		ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%
CDC Weaver					917				917	
Forage							815		815	
AC Juniper			788						788	
Foothill			594						594	
Ronald							550		550	
CDC Seabiscuit			546						546	
Robert							480		480	
Nelson			473						473	
Cascade	70		283				80		433	
Kara							370		370	
AAC Justice							352		352	
Sutton							325		325	
AC Medallion			246				64		310	
Riel							303		303	
Ore 6251M			301						301	
Rodney			250						250	
Dumont							232		232	
Random			10				220		230	
Canoe							198		198	
Murphy			175						175	
AAC Nicolas							145		145	
Jordan							141		141	
Fidler							135		135	
Lu			125						125	
AAC Douglas							105		105	
Navaro							96		96	
Buff							76		76	
AAC Bullet							75		75	
Victory			70						70	
CDC SOL-FI			52						52	
CDC Endure			42				6		48	
Drummond							36		36	
Magnum							32		32	
AC Marie							27		27	
Athabasca			27						27	
Total	**24,461**	**1**	**296,759**	**17**	**840,637**	**47**	**624,199**	**35**	**1,786,056**	**100**

SUNFLOWERS: INSURED COMMERCIAL ACRES, DESIGNATED VARIETIES

SUNFLOWERS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
P63ME70					28,286	31	28,286	30
6946	860	58			15,369	17	16,229	17
P63HE60					12,702	14	12,702	13
Talon					11,009	12	11,009	12
N4HM354					10,119	11	10,119	11
Not Specified			3,745	100	1,299	1	5,044	5
Panther DMR	388	26			4,647	5	5,035	5
Panther	243	16			1,382	2	1,625	2
Royal Hybrid 400 CL					1,302	1	1,302	1
MY8D310CL					844	1	844	1

SUNFLOWERS	ALTA.		SASK.		MAN.		TOTAL	
SEEDED AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%
P63ME80					609	1	609	1
P63A70					603	1	603	1
CHS RH 112					589	1	589	1
N4H302 E					486	1	486	1
P63M80					310		310	
N6L377 CL					270		270	
Cobalt II					255		255	
6494					155		155	
6950					105		105	
Total	**1,491**	**100**	**3,745**	**100**	**90,341**	**100**	**95,577**	**100**

WHO KNOWS WHAT'S HAPPENING IN YOUR SOIL?

METOS KNOWS.

Introducing the
NEW **METOS MobiLab.**

An easy-to-use soil lab that quickly and accurately measures nutrients to help you with your fertilizer application decisions. Real-time, georeferenced results that integrate with FieldClimate ensure you have data when you need it to make the right decisions now.

METOS MobiLab - $4,995.

METOS®CANADA
Metos Knows

WEATHER FORECAST · CROP HEALTH MANAGEMENT · INSECT MONITORING · WEATHER MONITORING · REMOTE FIELD MONITORING

Call **1-800-665-1362** or visit **metoscanada.ca** to learn more.

About this program:

The three Prairie canola grower groups – Alberta Canola Producers Commission (Alberta Canola), the Saskatchewan Canola Development Commission (SaskCanola) and the Manitoba Canola Growers Association – funded the 2020 program. The provincial oilseed specialists and industry scientists provide expertise. The Canola Council of Canada delivers the program. The B.C. Grain Producers Association conducted trials in the Peace region as its means of participation.

The 2020 program was funded by Alberta Canola Producers Commission (Alberta Canola), Saskatchewan Canola Development Commission (SaskCanola) and the Manitoba Canola Growers Association, with contributions from the B.C. Grain Producers Association (BCGPA). The 2020 trials were coordinated by Haplotech with the direction from the CPT Governance and Technical Committees. The Canola Council of Canada supported on the delivery of the program.

Commercial canola varieties tested in the 2020 small plot trials had seed provided by BASF – InVigor, BrettYoung Seeds, Corteva-Brevant, CANTERRA SEEDS, Bayer-DeKalb, Corteva-Pioneer and Nutrien-Proven Seeds and Winfield United-Croplan.

For more information, contact:

BRENDA DYCK, Marketing & Research,
Manitoba Canola Growers
204-982-2124 | brenda@canolagrowers.com

TARYN DICKSON, Resource Manager
204-982-2111 | dicksont@canolacouncil.org

CURTIS REMPEL, Vice President,
Crop Production & Innovation
204-982-2105 | rempelc@canolacouncil.org

TOOLS TO HELP YOU MAKE BETTER CHOICES

Canola Performance Trials (CPT) include both small plot and large field scale trials. Results are based on 16 standard (swathed) and 18 straight cut small plot trials across the Prairies. Site distribution is based on seeded acres in Manitoba, Saskatchewan and Alberta. The small plot system ensures that:

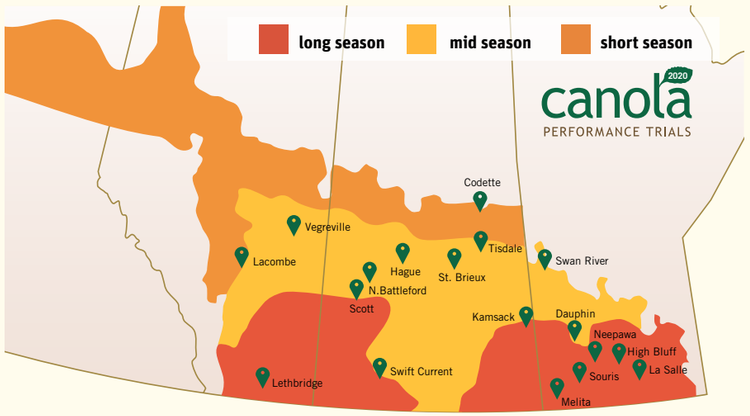
- All varieties are treated with appropriate commercially associated herbicides and seed treatments.
- An independent third-party representative inspects all trials.
- Varieties are in blocks based on maturity. That way, harvest occurs at the appropriate time to minimize harvest losses due to maturity differences.

CV – For coefficient of variation (CV), the lower the CV value, the more reliable the test. For example, if comparing results from two test locations, one with a CV of 4% and the other with a CV of 8%, the test with the CV of 4% can be considered more reliable. There is always variability in research trials. The key is designing and managing experiments so CVs stay within a reasonable range. For the CPT, experience has shown that CVs below 15% indicate good test reliability.

LSD – The least significant difference (LSD at a 5% level of statistical significance) for each dataset indicates whether differences between varieties are statistically meaningful. Varieties should only be considered different in yield performance if the numerical difference between them is greater than the LSD value.

Using the sample table below, if the LSD is 5.0, varieties A and B are not statistically different, B and C are not statistically different, but A and C are statistically different. In the yield graphs for each season zone, LSD for each variety group is given on the left.

A	52
B	54
C	58
LSD	5.0



USING THE TABLES

Results are organized by short, medium and long season zones. CPT uses the Western Canada Canola/Rapeseed Recommending Committee (WCC/RRC) season zones, which are based on typical frost free days, growing degree days and soil type. See Table A for specific numbers for each zone and the map for a depiction.

The results tables include yield, days to maturity, height and lodging scores for each variety. Lodging scores are between 1 and 5, with 1 being no lodging and 5 being completely lodged.

Gross revenue is the yield multiplied by $12.48/bu. This is based on the March 2021 futures price of $549.10 per tonne opening price on October 21, 2020 and standard (50-pound) bushel weight. No basis or other deductions were taken off the futures price.

In the tables, varieties are listed numerically and alphabetically, starting with Liberty Link (LL) and Roundup/Truflex (RR).

Each zone and small plot location is identified on the map. Use the map to identify your growing season zone and trial locations closest to your farm.

To evaluate yield potential, look at all small plot and field scale locations in your growing season zone and the average yield for your zone. Consider other information such as maturity, lodging resistance and cost.

Season	Frost Free Days	Growing Degree Days (Base 5ºC)*
Short	75–95	1,100–1,450
Medium	95–115	1,450–1,700
Long	115+	1,700+

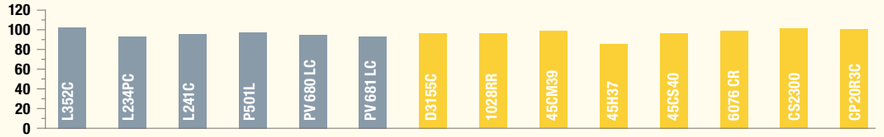
Season Zone Averages - Standard Trials (small plot data)

			Long Season Zone (5 locations)				Mid Season Zone (8 locations)				Short Season Zone (3 locations)				Overall average (16 locations)				
Variety	Pod shatter tolerance	Disease tolerance (1)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Distributor
LibertyLink																			
L352C	N	BL/CR	68	117	94	48	59	103	95	48	60	104	101	46	62	108	96	55	BASF - InVigor
L234PC	Y	BL/CR	61	106	89	44	55	99	92	44	56	95	99	46	57	100	92	44	BASF - InVigor
L241C	N	BL/CR	62	106	91	45	55	96	92	46	57	97	99	46	57	99	93	46	BASF - InVigor
P501L	N	BL/CR	66	114	90	46	59	102	91	46	58	98	97	46	61	105	92	46	Corteva-Pioneer
PV 680 LC	N	BL/CR	66	114	94	49	55	96	95	50	57	97	100	48	59	102	95	49	Nutrien-Proven Seeds
PV 681 LC	N	BL/CR	62	108	90	45	57	100	90	46	56	95	98	46	58	101	91	46	Nutrien-Proven Seeds
LSD			6	12			6	11			4	7			5	9			
Roundup/Truflex																			
D3155C	N	BL/CR	58	101	92	47	52	91	93	51	58	98	99	53	55	95	94	50	Corteva-Brevant
1028RR	N	BL/CR	59	102	92	44	55	96	94	47	57	97	101	47	57	98	95	46	Corteva-Brevant
45CM39	Y	BL/CR	58	100	92	46	57	100	94	46	59	100	101	45	58	100	95	46	Corteva-Pioneer
45H37	N	BL/CR	60	103	90	47	52	91	91	48	52	87	96	47	54	94	91	48	Corteva-Pioneer
45CS40	N	BL/CR/S	64	109	91	48	57	99	92	52	58	98	98	51	59	102	93	50	Corteva-Pioneer
6076 CR	N	BL/CR	56	96	94	48	54	93	95	49	59	99	102	49	55	95	96	49	BrettYoung Seeds
CS2300	N	BL	60	104	95	50	57	97	95	50	60	102	102	50	58	100	96	50	Canterra Seeds
CP20R3C	N	BL/CR	60	102	96	49	54	92	97	51	60	102	103	51	57	97	97	50	WinField United-Croplan
DKTF 98 CR	N	BL/CR	59	102	90	42	57	99	92	46	61	103	100	43	58	101	93	44	Bayer-DeKalb
BY 6204TF	N	BL/CR	62	107	93	46	56	99	93	48	58	98	100	49	58	101	94	48	BrettYoung Seeds
LSD			7	12			5	10			4	8			3	5			
Clearfield(2)																			
P502CL	N	BL	56	102	87	47	59	96	87	46									Corteva-Pioneer
BY 5105CL	N	BL/CR	51	94	89	49	59	97	89	48									BrettYoung Seeds
LSD			10	20			11	19											

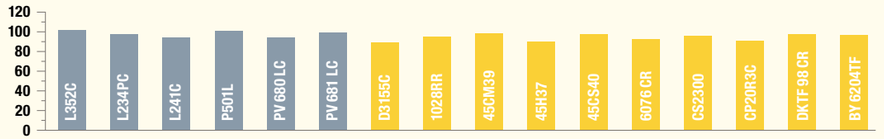
(1) Indicates genetic disease resistance with an "R". BL = Blackleg, CR = Clubroot and improved tolerance to sclerotinia "S", as based on variety descriptions submitted to CFIA
(2) The averages based on incomplete data set, should not be used to compare with other HT (Herbicide Tolerance) groups. Clearfield varieties were tested in Manitoba only.

Zone Averages – Standard Trials (small plot data)

Short Season Zone:
% of 45CM39 (59 bu./ac.)

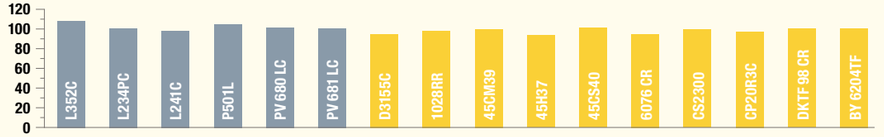


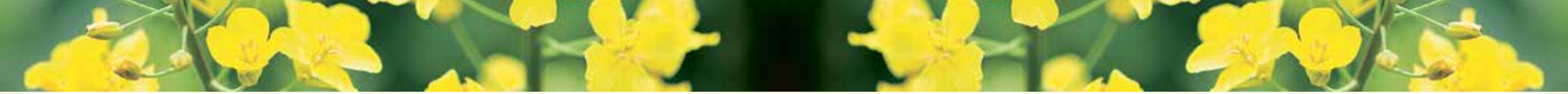
Mid Season Zone:
% of 45CM39 (57 bu./ac.)



Long Season Zone:
% of 45CM39 (58 bu./ac.)

Average (All Zones) Yield:
% of 45CM39 (58 bu./ac.)





LONG SEASON ZONE | Small plot results by location

	HIGH BLUFF, MB						MELITA, MB						SOURIS, MB						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L352C	66	112	$829	89	2.0	47	63	104	$781	87	1.5	53	72	128	$904	96	1.8	56	BASF - InVigor
L234PC	59	99	$730	82	2.0	46	56	93	$695	84	1.8	50	73	129	$910	87	2.0	50	BASF - InVigor
L241C	59	100	$739	84	1.3	48	57	95	$711	86	1.5	52	69	122	$865	90	1.3	50	BASF - InVigor
P501L	61	103	$759	84	1.5	48	61	101	$756	85	1.8	53	86	151	$1,068	88	2.0	52	Corteva-Pioneer
PV 680 LC	62	105	$780	89	1.0	51	58	96	$719	88	1.5	56	72	128	$902	94	1.0	56	Nutrien-Proven Seeds
PV 681 LC	59	100	$738	83	2.0	47	59	98	$734	84	2.0	52	69	122	$863	85	2.0	52	Nutrien-Proven Seeds
LSD	4	7					4	6					5	9					
Roundup/Truflex																			
D3155C	59	100	$740	86	2.0	49	60	99	$743	85	1.8	55	71	125	$882	90	2.3	54	Corteva-Brevant
1028RR	56	95	$699	86	1.8	48	57	96	$717	84	1.5	50	59	103	$731	94	2.0	53	Corteva-Brevant
45CM39	59	100	$739	86	2.3	50	60	100	$747	85	2.0	51	57	100	$707	93	2.5	51	Corteva-Pioneer
45H37	53	90	$666	81	2.0	50	54	91	$679	84	2.0	53	71	125	$884	88	2.3	56	Corteva-Pioneer
45CS40	61	103	$760	84	2.0	51	58	96	$720	85	1.5	57	74	130	$921	91	2.0	56	Corteva-Pioneer
6076 CR	60	101	$749	86	1.8	50	59	98	$734	88	1.5	57	60	106	$748	97	2.0	54	BrettYoung Seeds
CS2300	63	107	$791	89	1.8	53	58	97	$727	88	1.8	56	60	106	$752	97	2.3	58	Canterra Seeds
CP20R3C	63	106	$786	90	1.0	52	60	100	$745	88	1.8	55	69	122	$865	98	2.0	58	WinField United-Croplan
DKTF 98 CR	55	93	$687	82	2.0	46	55	92	$691	84	1.8	48	64	113	$802	87	2.5	46	Bayer-DeKalb
BY 6204TF	58	98	$725	85	2.0	48	58	97	$722	86	1.8	51	57	101	$715	94	1.8	53	BrettYoung Seeds
LSD	5	8					4	6					6	10					
Clearfield																			
P502CL	55	93	$691	84	2.3	46	57	95	$711	84	1.5	52	71	125	$882	89	2.8	50	Corteva-Pioneer
BY 5105CL	61	104	$767	88	2.5	51	58	96	$721	86	1.8	51	43	76	$535	91	2.0	53	BrettYoung Seeds
LSD	8	14					4	6					15	26					
CV	5.1						4.1						6.5						

LONG SEASON ZONE | Small plot results by location

	LA SALLE, MB						LETHBRIDGE, AB (IRRIGATED)						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink													
L352C	50	114	$627	93		46	89	127	$1,107	105		36	BASF - InVigor
L234PC	47	106	$581	89		41	71	101	$883	104		33	BASF - InVigor
L241C	46	105	$577	91		40	76	109	$948	104		36	BASF - InVigor
P501L	46	104	$569	91		42	79	114	$992	104		34	Corteva-Pioneer
PV 680 LC	52	117	$644	95		43	88	126	$1,095	104		37	Nutrien-Proven Seeds
PV 681 LC	48	109	$597	92		39	77	111	$964	104		33	Nutrien-Proven Seeds
LSD	11	26					7	10					
Roundup/Truflex													
D3155C	41	92	$506	95		45	61	87	$756	104		33	Corteva-Brevant
1028RR	45	102	$562	93		39	79	112	$980	105		28	Corteva-Brevant
45CM39	44	100	$549	96		46	70	100	$872	103		30	Corteva-Pioneer
45H37	46	105	$576	92		42	74	106	$920	105		32	Corteva-Pioneer
45CS40	43	99	$543	94		44	82	117	$1,022	105		32	Corteva-Pioneer
6076 CR	34	77	$424	97		47	68	97	$850	105		31	BrettYoung Seeds
CS2300	44	100	$548	96		45	75	107	$934	105		35	Canterra Seeds
CP20R3C	33	74	$408	98		47	75	108	$939	105		33	WinField United-Croplan
DKTF 98 CR	50	114	$625	94		40	69	99	$863	105		31	Bayer-DeKalb
BY 6204TF	49	112	$613	95		47	89	128	$1,112	104		32	BrettYoung Seeds
LSD	10	23					10	14					
Clearfield (varieties tested in Manitoba only)													
P502CL	42	95	$522	91		39							Corteva-Pioneer
BY 5105CL	44	100	$547	92		41							BrettYoung Seeds
LSD	15	34											
CV	11.1						8.4						

NOTICE:

For full results from the canola field-scale trials, visit canolaperformancetrials.ca.

MID SEASON ZONE | Small plot results by location

	DAUPHIN, MB						NEEPAWA, MB						SWAN RIVER, MB						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L352C	67	116	$841	93	2.0	49	60	111	$745	84	2.8	43	63	86	$786	98	2.8	49	BASF - InVigor
L234PC	63	109	$787	83	3.0	44	55	103	$689	83	3.3	28	62	84	$771	95	2.8	46	BASF - InVigor
L241C	63	109	$792	86	1.8	46	48	90	$602	84	2.3	46	58	78	$718	95	1.6	48	BASF - InVigor
P501L	72	124	$899	82	2.8	45	55	102	$686	82	2.7	43	74	100	$920	96	2.3	49	Corteva-Pioneer
PV 680 LC	64	111	$802	91	1.5	52	44	81	$545	84	2.0	48	71	97	$888	98	1.5	51	Nutrien-Proven Seeds
PV 681 LC	67	116	$842	82	2.8	46	44	82	$550	82	2.7	47	68	93	$853	96	1.8	47	Nutrien-Proven Seeds
LSD	5	9					7	13					11	14					
Roundup/Truflex																			
D3155C	54	93	$671	88	3.0	52	52	96	$645	84	2.5	51	64	87	$797	97	3.0	52	Corteva-Brevant
1028RR	52	90	$651	89	2.5	43	56	105	$704	85	2.5	46	68	93	$854	97	2.4	48	Corteva-Brevant
45CM39	58	100	$724	89	3.0	43	54	100	$670	84	2.8	47	74	100	$918	96	2.0	47	Corteva-Pioneer
45H37	55	94	$683	81	3.0	45	52	97	$648	82	3.0	49	62	85	$779	93	1.8	49	Corteva-Pioneer
45CS40	61	104	$756	85	2.3	51	62	115	$772	84	2.3	50	70	95	$875	95	1.5	50	Corteva-Pioneer
6076 CR	50	87	$629	90	2.3	47	53	99	$661	85	2.5	48	61	83	$757	97	3.0	52	BrettYoung Seeds
CS2300	60	103	$745	92	2.5	46	55	102	$681	84	2.3	50	69	94	$865	100	3.6	51	Canterra Seeds
CP20R3C	54	94	$677	94	1.8	50	54	100	$670	86	1.8	49	60	82	$754	98	3.1	52	WinField United-Croplan
DKTF 98 CR	67	116	$837	86	3.0	45	45	84	$561	83	3.5	44	72	98	$897	94	2.0	47	Bayer-DeKalb
BY 6204TF	67	116	$837	84	2.3	49	54	100	$669	84	3.0	50	58	80	$730	98	2.1	49	BrettYoung Seeds
LSD	5	8					9	17					9	12					
Clearfield																			
P502CL	61	106	$764	81	3.0	46	49	91	$609	83	3.0	44	67	92	$842	96	2.0	48	Corteva-Pioneer
BY 5105CL	59	101	$733	88	2.5	50	55	103	$689	85	3.0	47	64	87	$797	95	1.6	48	BrettYoung Seeds
LSD	13	22					14	26					7	9					
CV	5.6						11						9.3						

MID SEASON ZONE | Small plot results by location

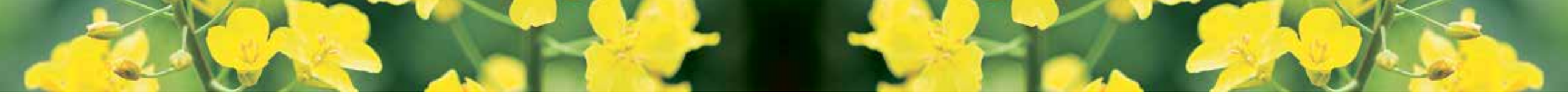
	HAGUE, SK						KAMSACK, SK						NORTH BATTLEFORD, SK						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L352C	54	96	$677	97	1.8	48	47	110	$591	92	2.5	43	69	108	$858	104	2.8	51	BASF - InVigor
L234PC	51	89	$632	90	1.6	45	42	96	$519	89	2.5	41	66	103	$818	102	2.5	49	BASF - InVigor
L241C	45	80	$564	91	1.3	44	47	109	$587	91	2.0	43	64	100	$793	100	2.0	49	BASF - InVigor
P501L	49	87	$613	87	1.5	45	45	104	$559	90	2.5	41	60	95	$753	100	3.3	48	Corteva-Pioneer
PV 680 LC	48	85	$600	95	1.3	48	46	106	$572	94	2.5	46	62	97	$770	103	2.5	52	Nutrien-Proven Seeds
PV 681 LC	50	88	$625	88	1.8	47	42	98	$528	89	3.0	42	61	95	$759	98	3.5	47	Nutrien-Proven Seeds
LSD	8	13					3	6					5	8					
Roundup/Truflex																			
D3155C	48	84	$596	92	1.8	50	45	104	$559	92	3.3	45	61	96	$761	101	3.3	51	Corteva-Brevant
1028RR	53	94	$666	93	1.0	46	40	93	$501	91	2.8	41	59	92	$733	104	3.3	48	Corteva-Brevant
45CM39	57	100	$709	96	2.0	46	43	100	$538	91	3.3	39	64	100	$797	103	2.8	49	Corteva-Pioneer
45H37	50	88	$621	91	1.9	48	41	94	$506	88	3.3	42	55	87	$692	100	4.0	52	Corteva-Pioneer
45CS40	50	88	$620	92	1.6	51	43	100	$539	92	3.0	47	60	95	$754	101	2.8	52	Corteva-Pioneer
6076 CR	50	88	$623	97	1.5	49	43	99	$535	92	3.0	44	65	101	$808	105	3.3	49	BrettYoung Seeds
CS2300	53	94	$663	94	1.4	47	43	100	$539	93	2.0	46	66	104	$826	106	2.5	53	Canterra Seeds
CP20R3C	46	81	$571	98	1.0	54	46	106	$572	95	2.3	47	65	102	$815	105	2.0	50	WinField United-Croplan
DKTF 98 CR	50	88	$625	93	1.8	47	43	101	$541	89	3.0	38	64	100	$794	99	3.5	47	Bayer-DeKalb
BY 6204TF	54	95	$674	91	1.5	46	46	106	$570	92	2.8	42	65	102	$815	102	2.3	48	BrettYoung Seeds
LSD	7	11					2	4					4	6					
Clearfield* (Varieties were tested in Manitoba only)																			
P502CL																			Corteva-Pioneer
BY 5105CL																			BrettYoung Seeds
LSD																			
CV	9.7						3.5						4.5						

MID SEASON ZONE | Small plot results by location

	SWIFT CURRENT, SK						VEGREVILLE, AB						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink													
L352C	27	87	$338	94		46	85	111	$1,055	102		52	BASF - InVigor
L234PC	36	115	$447	90		44	69	91	$865	102		51	BASF - InVigor
L241C	27	87	$338	92		44	86	113	$1,077	98		50	BASF - InVigor
P501L	30	96	$372	91		46	85	112	$1,066	100		54	Corteva-Pioneer
PV 680 LC	25	80	$312	92		50	83	108	$1,032	102		54	Nutrien-Proven Seeds
PV 681 LC	34	109	$423	91		43	90	117	$1,118	98		53	Nutrien-Proven Seeds
LSD	4	13					7	9					
Roundup/Truflex													
D3155C	22	70	$272	92		49	74	97	$928	101		57	Corteva-Brevant
1028RR	28	92	$355	94		46	85	112	$1,067	102		53	Corteva-Brevant
45CM39	31	100	$387	93		46	76	100	$953	103		54	Corteva-Pioneer
45H37	27	88	$339	92		47	74	97	$924	99		54	Corteva-Pioneer
45CS40	26	85	$329	92		51	81	106	$1,013	100		59	Corteva-Pioneer
6076 CR	23	74	$287	93		49	85	111	$1,060	103		57	BrettYoung Seeds
CS2300	20	66	$254	94		49	88	115	$1,097	102		56	Canterra Seeds
CP20R3C	17	56	$216	94		50	90	118	$1,124	103		56	WinField United-Croplan
DKTF 98 CR	30	97	$375	92		45	83	109	$1,040	100		51	Bayer-DeKalb
BY 6204TF	26	85	$329	92		46	80	105	$1,000	101		54	BrettYoung Seeds
LSD	3	10					6	8					
Clearfield* (Varieties were tested in Manitoba only)													
P502CL													Corteva-Pioneer
BY 5105CL													BrettYoung Seeds
LSD													
CV	12.4						6.1						

SHORT SEASON ZONE | Small plot results by location

	CODETTE, SK						TISDALE, SK						LACOMBE, AB						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L352C	61	90	$757	101	2.5	44	49	113	$605	93	1.8	41	72	108	$897	111	4.5	54	BASF - InVigor
L234PC	57	84	$708	99	2.0	43	43	101	$540	89	1.5	40	68	102	$843	107	3.0	55	BASF - InVigor
L241C	54	80	$676	100	1.0	43	44	101	$543	90	1.0	38	72	108	$900	106	3.0	58	BASF - InVigor
P501L	63	93	$784	97	1.3	42	40	94	$505	89	1.8	39	72	108	$897	106	3.3	56	Corteva-Pioneer
PV 680 LC	59	88	$742	99	1.3	45	44	102	$548	93	1.5	41	66	100	$828	107	2.5	57	Nutrien-Proven Seeds
PV 681 LC	59	88	$739	97	2.3	42	41	97	$517	89	2.3	39	66	100	$829	107	2.3	57	Nutrien-Proven Seeds
LSD	5	8					3	8					3	5					
Roundup/Truflex																			
D3155C	62	92	$778	99	2.3	57	43	100	$537	90	3.3	42	67	101	$840	108	3.8	58	Corteva-Brevant
1028RR	65	96	$813	99	1.3	45	43	101	$539	93	2.0	40	63	95	$790	111	3.3	56	Corteva-Brevant
45CM39	68	100	$843	101	2.5	41	43	100	$536	92	2.3	38	66	100	$829	110	3.3	55	Corteva-Pioneer
45H37	60	89	$753	97	2.0	43	36	85	$454	88	3.0	40	58	87	$722	104	3.0	58	Corteva-Pioneer
45CS40	67	99	$834	99	1.5	48	42	97	$521	89	2.3	43	64	96	$799	107	2.5	60	Corteva-Pioneer
6076 CR	65	96	$806	101	2.0	46	43	100	$537	93	2.5	41	68	102	$848	111	3.0	60	BrettYoung Seeds
CS2300	65	97	$815	101	2.3	47	46	108	$578	94	2.0	43	67	101	$841	111	3.0	59	Canterra Seeds
CP20R3C	65	96	$807	103	2.0	49	45	104	$559	94	1.0	45	70	105	$870	112	2.3	58	WinField United-Croplan
DKTF 98 CR	68	101	$853	100	2.8	41	46	107	$576	91	2.3	39	67	101	$839	108	4.3	49	Bayer-DeKalb
BY 6204TF	62	92	$776	101	1.7	47	45	104	$555	90	2.3	42	66	100	$826	109	3.0	57	BrettYoung Seeds
LSD	5	7					5	12					3	5					
Clearfield* (Varieties were tested in Manitoba only)																			
P502CL																			Corteva-Pioneer
BY 5105CL																			BrettYoung Seeds
LSD																			
CV	5.7						4.6						5.2						



STRAIGHT CUT TRIALS

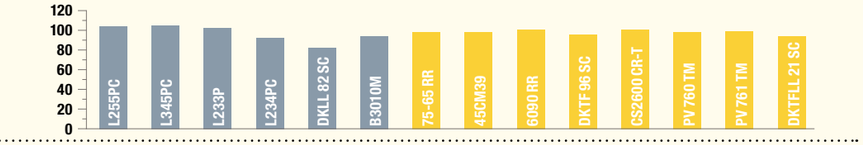
SEASON ZONE AVERAGES | Small plot results by location

			Long Season Zone (6 locations)				Mid Season Zone (9 locations)				Short Season Zone (3 locations)				Overall average (18 locations)				
Variety	Pod shatter tolerance	Disease tolerance (1)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Yield (bu./acre)	Yield (% L252)	Maturity (days)	Height (inches)	Distributor
LibertyLink																			
L255PC	Y	BL/CR	58	107	93	46	60	114	94	45	68	106	101	48	61	111	93	46	BASF - InVigor
L345PC	Y	BL/CR	59	110	92	47	59	113	91	47	68	106	98	43	61	111	93	46	BASF - InVigor
L233P	Y	BL	60	112	90	44	58	111	90	44	68	104	98	46	60	110	91	44	BASF - InVigor
L234PC	Y	BL/CL	55	101	90	44	57	106	91	44	61	94	99	46	57	102	92	44	BASF - InVigor
DKLL 82 SC	Y	BL	56	103	92	44	56	106	92	43	54	84	99	41	56	101	93	43	Bayer-DeKalb
B3010M	Y	BL/CR	51	94	91	47	57	107	92	46	62	96	98	45	56	100	93	46	Corteva-Brevant
LSD			4	8			6	12			5	8			5	10			
Roundup/Truflex																			
75-65 RR	Y	BL	52	96	90	44	54	101	91	45	64	99	98	44	55	99	92	44	Bayer-DeKalb
45CM39	Y	BL/CL	55	100	93	45	54	100	93	44	65	100	101	45	56	100	94	45	Corteva-Pioneer
6090 RR	Y	BL/CR	47	85	94	51	49	88	94	49	66	101	100	47	51	89	95	50	BrettYoung Seeds
DKTF 96 SC	Y	BL	55	101	93	45	58	109	92	44	63	97	99	43	58	104	93	44	Bayer-DeKalb
CS2600 CR-T	Y	BL/CR	53	98	90	44	56	104	92	44	66	102	99	43	57	102	92	44	Canterra Seeds
PV 760 TM	Y	BL	54	99	90	45	57	108	91	45	64	100	99	46	57	104	92	45	Nutrien-Proven Seeds
PV 761 TM	Y	BL	56	103	93	48	57	106	93	49	65	100	100	48	58	104	94	49	Nutrien-Proven Seeds
DKTFLL 21 SC	Y	BL	56	103	92	43	58	109	91	43	62	96	99	43	58	105	92	43	Bayer-DeKalb
LSD			5	9			6	13			4	7			5	11			

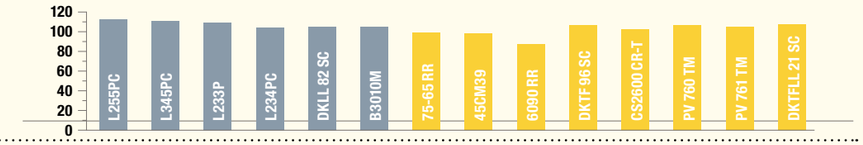
(1) Indicates genetic disease resistance with an "R" or resistant rating to BL = Blackleg, CR = Clubroot and improved tolerance to sclerotinia "S", as based on variety descriptions submitted to CFIA

Zone Averages – Straight Cut Trials (small plot data)

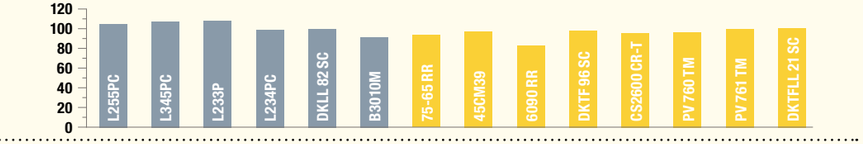
Short Season Zone:
% of 45CM39 (65 bu./ac.)



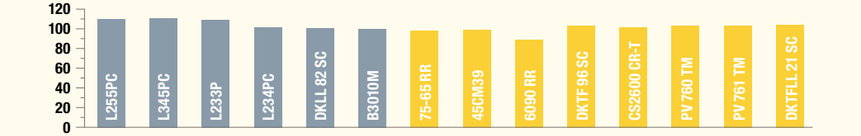
Mid Season Zone:
% of 45CM39 (54 bu./ac.)



Long Season Zone:
% of 45CM39 (55 bu./ac.)



Average (All Zones) Yield:
% of 45CM39 (56 bu./ac.)



STRAIGHT CUT TRIALS

LONG SEASON ZONE | Small plot results by location

	HIGH BLUFF, MB						MELITA, MB						SOURIS, MB						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L255PC	68	109	$846	85	1.0	48	67	111	$839	88	1.3	52	78	112	$975	93	1.5	50	BASF - InVigor
L345PC	70	112	$870	82	2.3	49	66	109	$826	86	1.3	53	77	110	$959	93	1.8	53	BASF - InVigor
L233P	64	103	$800	82	2.0	46	62	102	$776	85	1.0	49	72	103	$897	85	1.8	46	BASF - InVigor
L234PC	61	97	$759	81	2.0	47	62	102	$775	85	1.3	50	69	98	$857	86	2.5	46	BASF - InVigor
DKLL 82 SC	60	96	$751	85	2.0	47	59	98	$742	85	1.0	48	70	100	$874	90	1.5	48	Bayer-DeKalb
B3010M	60	97	$753	84	1.3	49	61	100	$761	85	1.0	53	54	77	$671	88	1.5	51	Corteva-Brevant
LSD	3	5					4	7					5	6					
Roundup/Truflex																			
75-65 RR	53	85	$662	82	2.0	46	60	100	$754	84	1.5	49	66	95	$828	89	3.0	49	Bayer-DeKalb
45CM39	62	100	$779	86	2.0	47	61	100	$757	85	2.0	48	70	100	$873	93	2.0	51	Corteva-Pioneer
6090 RR	58	92	$721	89	1.3	55	58	96	$725	88	1.0	56	52	75	$650	96	2.0	60	BrettYoung Seeds
DKTF 96 SC	61	97	$757	85	1.8	49	60	100	$754	86	1.0	46	68	97	$846	94	1.3	51	Bayer-DeKalb
CS2600 CR-T	53	85	$660	82	2.3	45	59	97	$732	84	1.8	49	72	104	$905	84	3.3	48	Canterra Seeds
PV 760 TM	54	86	$670	82	2.0	48	61	100	$760	85	1.0	49	68	97	$850	85	2.0	50	Nutrien-Proven Seeds
PV 761 TM	61	97	$758	86	1.8	49	58	95	$721	86	1.0	54	69	99	$862	91	1.8	55	Nutrien-Proven Seeds
DKTFLL 21 SC	56	89	$695	86	2.0	46	60	99	$752	84	1.3	47	76	109	$953	90	2.5	50	Bayer-DeKalb
LSD	4	6					4	7					5	6					
CV	4.1						5.1						5.5						

STRAIGHT CUT TRIALS

LONG SEASON ZONE | Small plot results by location

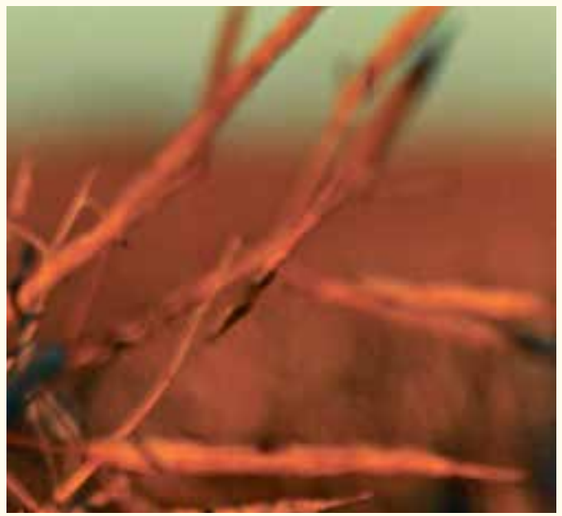
	LA SALLE, MB						SCOTT, SK						LETHBRIDGE, AB (IRRIGATED)						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging (1)	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L255PC	49	103	$609	92		41	40	125	$500	100	1.0	51	47	84	$592	103		33	BASF - InVigor
L345PC	48	102	$604	92		41	43	134	$534	98	1.5	51	53	94	$658	103		33	BASF - InVigor
L233P	52	109	$646	89		38	42	131	$524	96	1.5	50	68	121	$847	102		34	BASF - InVigor
L234PC	47	99	$587	89		37	33	104	$414	98	1.3	49	60	108	$754	102		36	BASF - InVigor
DKLL 82 SC	42	88	$519	92		38	39	121	$484	98	2.3	47	64	114	$798	102		32	Bayer-DeKalb
B3010M	38	80	$475	92		40	32	101	$405	96	1.5	50	60	107	$753	103		36	Corteva-Brevant
LSD	5	10				2	6					6	11						
Roundup/Truflex																			
75-65 RR	45	95	$564	91		37	32	101	$402	94	1.8	50	55	98	$690	101		30	Bayer-DeKalb
45CM39	47	100	$592	96		43	32	100	$400	98	2.3	49	56	100	$701	103		31	Corteva-Pioneer
6090 RR	22	46	$275	96		48	33	102	$409	96	1.8	53	57	101	$709	103		35	BrettYoung Seeds
DKTF 96 SC	45	95	$565	94		42	36	111	$446	95	1.3	48	59	105	$735	103		35	Bayer-DeKalb
CS2600 CR-T	52	109	$647	93		41	32	99	$397	95	3.3	48	53	95	$662	102		30	Canterra Seeds
PV 760 TM	47	100	$593	93		39	31	96	$384	95	2.0	50	64	113	$793	103		32	Nutrien-Proven Seeds
PV 761 TM	45	95	$563	95		42	37	115	$459	99	1.3	54	64	114	$799	102		36	Nutrien-Proven Seeds
DKTFLL 21 SC	49	104	$616	92		39	37	116	$464	95	2.3	49	57	101	$711	103		29	Bayer-DeKalb
LSD	5	11				4	11				7	12							
CV	8.1					3.9					10.7								

(1) Lodging data not collected.

STRAIGHT CUT TRIALS

MID SEASON ZONE | Small plot results by location

	DAUPHIN, MB						NEEPAWA, MB						SWAN RIVER, MB						
Variety	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu./acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L255PC	64	116	$797	93	1.5	46	73	153	$916	84	2.0	44	76	115	$947	95	1.0	47	BASF - InVigor
L345PC	62	112	$775	84	2.5	51	61	128	$763	84	2.5	43	74	112	$922	94	1.6	47	BASF - InVigor
L233P	61	111	$765	81	2.8	45	63	131	$782	84	2.5	39	77	117	$965	93	1.3	45	BASF - InVigor
L234PC	60	109	$751	82	3.0	43	57	119	$711	83	2.8	38	72	109	$898	93	1.3	44	BASF - InVigor
DKLL 82 SC	60	108	$744	84	2.3	41	61	127	$759	83	2.0	42	79	119	$983	94	1.8	46	Bayer-DeKalb
B3010M	63	114	$788	83	2.0	47	59	124	$742	83	2.0	41	74	111	$919	95	1.0	48	Corteva-Brevant
LSD	3	5					9	18					10	15					
Roundup/Truflex																			
75-65 RR	54	97	$671	85	3.0	45	55	114	$682	82	3.0	42	69	105	$866	93	2.8	50	Bayer-DeKalb
45CM39	55	100	$689	90	3.0	42	48	100	$597	83	2.3	43	66	100	$826	94	2.0	47	Corteva-Pioneer
6090 RR	48	87	$599	93	2.3	50	35	73	$438	85	1.5	47	65	98	$806	95	2.5	52	BrettYoung Seeds
DKTF 96 SC	62	113	$780	84	2.0	47	59	124	$738	84	2.0	42	84	127	$1,047	94	1.5	48	Bayer-DeKalb
CS2600 CR-T	62	113	$778	84	3.3	44	50	104	$623	82	3.0	40	71	107	$883	94	3.9	46	Canterra Seeds
PV 760 TM	61	110	$756	83	2.3	45	56	116	$695	82	3.0	43	76	115	$951	94	1.8	48	Nutrien-Proven Seeds
PV 761 TM	61	110	$756	88	2.0	49	56	117	$698	86	2.5	46	68	103	$851	95	1.5	53	Nutrien-Proven Seeds
DKTFLL 21 SC	61	111	$767	81	3.0	43	63	132	$789	82	2.5	40	76	115	$947	94	2.6	47	Bayer-DeKalb
LSD	3	5					7	15					10	14					
CV	3.2						9.6						9						



STRAIGHT CUT TRIALS

MID SEASON ZONE | Small plot results by location

	HAGUE, SK						KAMSACK, SK						NORTH BATTLEFORD, SK						
Variety	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L255PC	42	103	$521	92	1.4	46	50	106	$630	91	2.0	39	72	103	$897	100	2.0	49	BASF - InVigor
L345PC	41	102	$516	89	1.4	49	52	109	$647	90	2.8	43	71	102	$890	99	3.8	50	BASF - InVigor
L233P	39	95	$481	88	1.6	46	47	99	$589	88	2.0	40	71	101	$883	97	3.3	49	BASF - InVigor
L234PC	39	95	$484	90	1.4	47	47	99	$586	89	2.8	38	70	100	$871	100	2.5	52	BASF - InVigor
DKLL 82 SC	40	97	$493	91	1.8	44	45	95	$563	89	3.0	38	65	94	$816	99	2.8	44	Bayer-DeKalb
B3010M	44	108	$550	88	1.1	51	48	100	$594	90	2.8	42	67	97	$840	99	3.5	50	Corteva-Brevant
LSD	4	10					2	4					3	4					
Roundup/Truflex																			
75-65 RR	39	95	$481	89	1.8	49	47	99	$588	90	2.8	40	69	99	$864	100	3.3	49	Bayer-DeKalb
45CM39	41	100	$507	91	1.6	46	48	100	$594	90	3.3	39	70	100	$870	101	3.0	47	Corteva-Pioneer
6090 RR	36	88	$445	92	1.4	52	47	99	$591	92	2.8	46	68	98	$852	105	3.5	49	BrettYoung Seeds
DKTF 96 SC	40	98	$495	89	1.5	44	49	102	$607	90	2.0	40	69	100	$866	99	2.8	45	Bayer-DeKalb
CS2600 CR-T	38	94	$475	90	1.6	48	47	98	$581	90	3.0	37	67	96	$837	101	4.0	49	Canterra Seeds
PV 760 TM	44	108	$547	90	1.5	46	47	98	$581	89	2.8	40	69	100	$867	100	2.8	48	Nutrien-Proven Seeds
PV 761 TM	41	102	$517	91	1.5	49	47	99	$586	91	2.5	44	70	101	$876	100	2.8	51	Nutrien-Proven Seeds
DKTFLL 21 SC	41	100	$506	90	1.8	44	46	97	$577	89	3.8	39	68	98	$854	99	2.8	45	Bayer-DeKalb
LSD	7	16					2	4					4	5					
CV	9.7						2.6						3.8						

STRAIGHT CUT TRIALS

MID SEASON ZONE | Small plot results by location

	ST. BRIEUX, SK						SWIFT CURRENT, SK						VEGREVILLE, AB						
Variety	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging (1)	Height (in.)	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging (1)	Height (in.)	Distributor
LibertyLink																			
L255PC	47	120	$591	93	2.0	39	30	112	$379	93		46	89	100	$1,105	102		51	BASF - InVigor
L345PC	44	111	$549	92	2.5	39	38	139	$469	92		47	90	101	$1,122	99		51	BASF - InVigor
L233P	46	116	$576	91	2.0	39	36	135	$455	92		46	84	95	$1,048	98		48	BASF - InVigor
L234PC	44	112	$553	91	2.0	38	29	107	$361	93		45	91	103	$1,137	100		51	BASF - InVigor
DKLL 82 SC	41	105	$518	92	2.0	36	33	120	$407	93		46	83	94	$1,036	101		47	Bayer-DeKalb
B3010M	41	103	$510	91	2.3	40	27	100	$340	96		47	89	100	$1,110	102		51	Corteva-Brevant
LSD	8	20					6	21					8	9					
Roundup/Truflex																			
75-65 RR	39	99	$490	92	2.0	37	26	95	$320	92		44	91	103	$1,134	100		53	Bayer-DeKalb
45CM39	40	100	$494	92	2.0	38	27	100	$338	93		47	89	100	$1,106	102		50	Corteva-Pioneer
6090 RR	35	87	$432	93	2.0	38	17	63	$214	93		51	87	98	$1,085	101		58	BrettYoung Seeds
DKTF 96 SC	41	103	$510	91	1.5	37	30	110	$374	92		45	90	101	$1,119	101		49	Bayer-DeKalb
CS2600 CR-T	42	107	$528	92	2.3	38	32	116	$393	91		45	93	105	$1,166	101		52	Canterra Seeds
PV 760 TM	42	105	$522	91	2.0	39	33	120	$408	91		46	90	102	$1,128	100		54	Nutrien-Proven Seeds
PV 761 TM	43	108	$533	93	2.0	40	29	108	$367	93		49	95	107	$1,187	101		58	Nutrien-Proven Seeds
DKTFLL 21 SC	43	108	$534	91	2.0	37	31	115	$389	92		44	91	102	$1,132	100		50	Bayer-DeKalb
LSD	7	18					10	35					7	8					
CV	12.2						11.8						6.0						

(1) Lodging data not collected.

STRAIGHT CUT TRIALS

SHORT SEASON ZONE | Small plot results by location

	CODETTE, SK						TISDALE, SK						LACOMBE, AB						
Variety	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Yield (bu/acre)	Yield (% L252)	Gross Revenue/ac.	Days to Maturity	Lodging	Height (in.)	Distributor
LibertyLink																			
L255PC	63	92	$792	101	1.3	44	53	109	$664	94	2.0	39	89	116	$1,108	110	1.8	59	BASF - InVigor
L345PC	62	89	$768	99	3.3	40	55	112	$681	90	3.0	37	89	116	$1,113	107	3.5	51	BASF - InVigor
L233P	65	94	$805	98	2.0	41	50	104	$628	89	2.0	38	88	115	$1,100	106	3.3	59	BASF - InVigor
L234PC	57	83	$716	99	1.8	42	48	99	$600	91	2.0	38	76	100	$954	107	3.0	57	BASF - InVigor
DKLL 82 SC	49	72	$617	100	2.8	38	44	90	$545	91	3.0	36	69	90	$862	108	3.0	51	Bayer-DeKalb
B3010M	62	90	$771	97	1.5	43	46	94	$572	90	2.8	38	79	103	$987	107	2.5	55	Corteva-Brevant
LSD	7	10					5	11					3	4					
Roundup/Truflex																			
75-65 RR	66	95	$818	99	2.8	40	51	105	$638	91	2.8	37	74	97	$926	106	3.0	54	Bayer-DeKalb
45CM39	69	100	$861	101	2.0	43	49	100	$606	92	2.8	36	77	100	$957	109	2.5	55	Corteva-Pioneer
6090 RR	64	93	$802	99	2.3	44	49	101	$612	91	2.8	41	84	110	$1,049	108	3.0	58	BrettYoung Seeds
DKTF 96 SC	69	100	$864	100	1.5	40	47	98	$593	90	2.5	36	72	93	$895	108	2.0	52	Bayer-DeKalb
CS2600 CR-T	63	91	$782	97	3.8	39	50	104	$628	92	3.8	37	85	111	$1,064	107	3.8	54	Canterra Seeds
PV 760 TM	67	96	$830	99	2.0	44	51	106	$640	91	2.3	38	74	97	$926	107	2.5	56	Nutrien-Proven Seeds
PV 761 TM	67	97	$837	102	1.5	48	51	106	$642	92	2.0	40	75	98	$938	107	2.5	58	Nutrien-Proven Seeds
DKTFLL 21 SC	64	93	$801	99	2.5	40	47	96	$585	91	2.8	35	76	99	$944	108	3.3	54	Bayer-DeKalb
LSD	4	6					6	12					3	3					
CV	6.4						5.7						3.7						

SASKATCHEWAN PEDIGREED SEED GROWERS DIRECTORY OF CROP VARIETIES

SASKATCHEWAN PEDIGREED SEED GROWERS

DIRECTORY OF CROP VARIETIES

This list was prepared by the Canadian Seed Growers Association. It includes varieties eligible for sale in Canada and seed crops issued certificates as of Nov. 15, 2020. CSGA assumes no responsibility for errors or omissions. The data in this listing includes all pedigreed seed crops that have successfully received, or are in the process of receiving, seed crop certification from the Canadian Seed Growers' Association (CSGA) in 2020. The pedigreed class code is listed after the grower's phone number. S = Select; F = Foundation; R = Registered; C = Certified; 1 = Additional Certification Requirements; 2 = Carry-over seed supplies from seed crops issued crop certificates prior to 2020. Fields that were declined pedigreed status are not included. Data is provided for information purposes only. CSGA is not liable for omitted or incorrect seed listings, and you agree to use the data at your own risk. You agree to fully indemnify CSGA from all losses, damages, liability, judgements, costs and expenses, which you or a user of the CSGA data sustain by disseminating or relying on such data. When purchasing seed, CSGA strongly recommends asking for official seed certification tags as your proof of CSGA certification. A copy of the mechanical purity and germination analysis test certificate should also be made available to you.

ALFALFA

4010BR						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
ABLE						
Pickseed Canada Inc.	Winnipeg	204-633-0088				C
AC CARIBOU						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
ACE						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
ALGONQUIN						
Aitken, Robert	Eyebrow	306-759-2700				C
Le Bras, Mart & Evan	Arborfield	306-812-8414				C
Lindsay, Eldon M.	Carrot River	306-768-3156				C
Stewart, Alan Kenneth	Carrot River	306-768-2811				C
Stewart, Ryan	Carrot River	306-768-2259				C
ALTHEA						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
DAKOTA						
Northstar Seed Ltd.	Neepawa	204-476-5241				C
DYNAMO						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
EXTREME HD						
Mennie, Robert J.W.	Parkside	306-747-2282				C
FOOTHOLD						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
GIBRALTAR						
Pickseed Canada Inc.	Winnipeg	204-633-0088				C
HALO 2						
Nutrien Ag Solutions(Canada) (Forages)	Carrot River	306-768-3335				C
INSTINCT						
Pickseed Canada Inc.	Winnipeg	204-633-0088				C
MULTI5301						
Interlake Forage Seeds Ltd.	Fisher Branch	204-372-6920				C
OCTANE						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
OPTIMUS						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
PICKSEED 2065MF						
Pickseed Canada Inc.	Winnipeg	204-633-0088				C
RELOAD						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
SHOCKWAVE-BR						
BrettYoung Seeds Limited	Rycroft	780-765-3069				C
STOCKPILE						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C
STRONGHOLD						
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932	F			
TH2						
Northstar Seed Ltd.	Neepawa	204-476-5241				C
VISION						
Pickseed Canada Inc.	Winnipeg	204-633-0088				C

BARLEY

AAC CONNECT						
Anderson, Skyler	Hazlet	306-741-6827				C
Boldt, Garry	Osler	306-239-2071	S			
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058				C
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C
Crosson, Lorne & Glen	Welwyn	306-645-3337				C
Denis, Michel P. & Marc	St. Denis	306-258-2219				C
Fedoruk, Michael J.	Kamsack	306-542-4235			R	
Frederick Seeds	Watson	306-287-3977			R	
Friesen, Greg & Brea; Leavins, Brent & Betty Mae & Robert & Courtney	Elrose	306-378-7785				C
Gerry , Greg	Creelman	306-457-2220				C
Girodat, Gerald	Shaunavon	306-297-2563				C
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694				C
Johnson, Jordon	Swift Current	306-750-1701				C
Johnson, Lee Stuart	Margo	306-324-4315				C
Lung Seeds Ltd.	Lake Lenore	306-368-2414	S			C
Mayerle, Kris	Tisdale	306-873-4261				C
Mcarthur, Brennan	Watrous	306-230-9853			R	C
Novak, Orrin	Kuroki	306-338-2021				C
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				C
Seed Source Inc.	Archerwill	306-323-4402				C
Trawin, Alan Ross	Melfort	306-752-4060				C
Wiens, Brennan R.	Herschel	306-377-2002				C
Wiid, Petrus	Watson	306-287-3977				C
Wylie, Leslie Dale	Biggar	306-948-2807			R	
Yauck, Kevin Rodney	Govan	306-484-4555	S			C
AAC SYNERGY						
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415				C
Berscheid, K.N.& B.& E.K. &.S.& C. & Kyle & Brent	Lake Lenore	306-368-2602				C
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C
Condie Seed	Regina	306-569-7333				C
Crone, Megan, Kehlsie, Braeden, Vaughn & Tammie	Moose Jaw	306-691-5284				C
Crosson, Lorne & Glen	Welwyn	306-645-3337				C
Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516			R	C
Hanmer, Ronald F., Kent, Brad & Dallas	Govan	306-484-4327				C
Hyndman, Glen	Balcarres	306-331-8168				C
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078				C
Mayerle, Kris	Tisdale	306-873-4261				C
Ostafie, Robert	Canora	306-563-6244				C
Smith, Kyle	Limerick	306-263-4944				C
Smith, Wayne D.	Limerick	306-263-4944				C

BARLEY

Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433				C
Wiens, Brennan R.	Herschel	306-377-2002				C
AB ADVANTAGE						
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415			R	
Kerber, Greg	Rosthern	306-232-4474			R	
Toman, Rick & Randy	Guernsey	306-365-8386			R	
Trawin Seeds	Melfort	306-752-4060	S			
Trawin, Mitchell	Melfort	306-752-4060			R	
AB CATTLELAC						
Anderson, Skyler	Hazlet	306-741-6827			R	
Bodnaryk, John E., Ian & Vangen, Stacy	Rhein	306-273-4263				C
Gellner, Clayton S.	Southey	306-726-4323			R	
Kerber, Greg	Rosthern	306-232-4474				C
AC METCALFE						
Berscheid, K.N. & B.& E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602				C
Beuker, Allan Daniel	Melfort	306-752-4810				C
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058				C
Dear, Jonathon	Saskatoon	306-222-0666				C
Edwards, Lawrence R. & Donna & Jeff & Mike & Mason	Nokomis	306-528-2140			R	
Filarczuk, Darren	Ituna	306-795-2871				C
Fraser, Scott & Shawn	Pambrun	306-741-0475			R	C
Heavin, G. Harvey & G. Ryan	Melfort	306-752-4171		F	R	
Novak, Orrin	Kuroki	306-338-2021				C
Ostafie, Robert	Canora	306-563-6244			R	
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687			R	
Wiid, Petrus	Watson	306-287-3977				C
Youzwa, Donald	Nipawin	306-862-5690			R	C
AC RANGER						
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415		F		
AC ROSSER						
Kerber, Greg	Rosthern	306-232-4474			R	C
ALTORADO						
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052	S	F	R	C
CDC AUSTENSON						
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F	R	
Buziak, Ronald Charles	Mayfair	306-445-6556				C
Ennis, Garnet, Neil & Schmidt, Jordan	Glenavon	306-429-2793		F	R	
Fedoruk, Michael J.	Kamsack	306-542-4235				C
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235			R	
Foster, Mark	Nipawin	306-873-7376			R	
Fraser, Scott & Shawn	Pambrun	306-741-0475				C
Frederick Seeds	Watson	306-287-3977			R	C
Goossen, Mathew	Sturgis	306-547-7432			R	C
Heggie, Robert Thomas	Leross	306-795-7493				C
Johnson, Jordon	Swift Current	306-750-1701				C
Kerber, Greg	Rosthern	306-232-4474			R	C
Marcotte, Raymond W.	Kinistino	306-864-2948				C
Ostafie, Robert	Canora	306-563-6244				C
Palmier, Maurice, Jason & Anita	Lafleche	306-472-7824				C
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638				C
Seidle, Edward & Brett & Cameron J. & Mervyn Anthony	Medstead	306-342-4377			R	C
Wilfing, Ryan John	Meadow Lake	306-236-6811				C
Woroschuk, Andrew	Calder	306-742-4682				C
CDC BOW						
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058			R	C
Boyd, Clare W. & Dale A.	Melfort	306-752-2564			R	
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939				C
Edmunds, Greg & Glen	Tisdale	306-873-4780			R	
Frederick Seeds	Watson	306-287-3977			R	C
Hanley, Erwin & Priscilla	Regina	306-586-4509				C

Heavin, Larry N. & L. Warren	Melfort	306-752-4020				R	C	
Heavin, Milton Russell	Melfort	306-752-4071	S	F	R			
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694					C	
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S	F	R			
Lueke, Dennis	Humboldt	306-682-5170				R		
Mayerle, Kris	Tisdale	306-873-4261					C	
Panasiuk, Kelly & Logan & Dean & Dillon	Wadena	306-338-3756					C	
Reisner, Cecil & Barry	Limerick	306-642-8666					C	
Seidle, Edward & Brett & Cameron J. & Mervyn Anthony	Medstead	306-342-4377	S				C	
Tomtene, Steven & Brad	Birch Hills	306-749-3447				R	C	
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984			F	R		
CDC CHURCHILL								
Berscheid, K.N. & B. & E.K. & S.& C. & Kyle & Brent	Lake Lenore	306-368-2602	S	F	R			
Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516				R		
SeCan Association	Kanata	613-592-8600			F			
CDC CLEAR								
Tomtene, Steven & Brad	Birch Hills	306-749-3447					C	
CDC COPELAND								
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415				R		
Beausoleil, Michael	Delmas	306-441-6421					C	
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602				R		
Beuker, Allan Daniel	Melfort	306-752-4810				R	C	2
Blumer, Brad & Doug	Dinsmore	306-460-7744					C	
Boldt, Garry	Osler	306-239-2071					C	
Boyes, Douglas John	Kelvington	306-327-4980					C	
Denis, Michel P. & Marc	St. Denis	306-258-2219					C	
Edmunds, Greg & Glen	Tisdale	306-873-4780					C	
Fedoruk, Michael J.	Kamsack	306-542-4235					C	
Filarczuk, Darren	Ituna	306-795-2871					C	
Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F	R			
Frederick Seeds	Watson	306-287-3977					C	
Hannah, Kelvin	Foam Lake	306-269-0228				R		
Heggie, Kyle Robert	Leross	306-795-7208					C	
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694					C	
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991				R		
Novak, Orrin	Kuroki	306-338-2021			F	R	C	
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				R	C	
Olynick, Marlon	Quill Lake	306-383-2920					C	
Ostafie, Robert	Canora	306-563-6244					C	
Rempel, Blair Allan	Nipawin	306-862-3573					C	
Rude, Stanley & Assie, Craig	Naicam	306-874-2359				R		
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638	S	F			C	
Sandercock, Eric M.	Balcarres	306-334-2958					C	
Seidle, Edward & Brett & Cameron J. & Mervyn Anthony	Medstead	306-342-4377			F	R	C	
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800					C	
Trawin Seeds	Melfort	306-752-4060				R		
Trollip, Leon	Melfort	306-920-8922					C	
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687			F	R		
Wiens, Brennan R.	Herschel	306-377-2002					C	
Wiens, Brennan R.	Herschel	306-377-2002				R		2
Wiid, Petrus	Watson	306-287-3977					C	
CDC COPPER								
Smith, Kyle	Limerick	306-263-4944				R		
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377	S	F			C	
Wilfing, Ryan John	Meadow Lake	306-236-6811				R		
CDC FIBAR								
Tomtene, Steven & Brad	Birch Hills	306-749-3447				R		
CDC FRASER								
Benson, Cory	Central Butte	306-891-6885					C	
Beuker, Allan Daniel	Melfort	306-752-4810					C	
Beuker, Allan Daniel	Melfort	306-752-4810				R		2

Boyes, Douglas John	Kelvington	306-327-4980					C	
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696					C	
Crone, Megan, Kehlsie, Braeden, Vaughn & Tammie	Moose Jaw	306-691-5284				R	C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438				R		
Fraser, Scott & Shawn	Pambrun	306-741-0475					C	
Heggie, Kyle Robert	Leross	306-795-7208					C	
Laforge, Troy	Swift Current	306-773-0924					C	
Luck, Lorne C.	Tisdale	306-873-8882					C	
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991					C	
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052					C	
Olynick, Marlon	Quill Lake	306-383-2920				R		
Pratchler, Leander	Muenster	306-682-3317					C	
Printz, Gerald & Kurt	Gravelbourg	306-648-3511					C	
Rude, Stanley & Assie, Craig	Naicam	306-874-2359					C	
Shirriff, Keith & Harle, Doug	Regina	306-533-0046				R		
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687	S			R		
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377					C	
Warkentin, Michael, Toews Bruce & Shawn	Porcupine Plain	306-814-7705					C	
Yauck, Kevin Rodney	Govan	306-484-4555	S	F		R		
CDC GOLDSTAR								
Wylie, Leslie Dale	Biggar	306-948-2807				R		
CDC MAVERICK								
Axten, Derek	Minton	306-969-2110				R		
Beausoleil, Michael	Delmas	306-441-6421				R		
Boldt, Garry	Osler	306-239-2071	S					
Catherwood, James	Ceylon	306-869-5423				R		
Dear, Jonathon	Saskatoon	306-222-0666					C	
Fedoruk, Michael J.	Kamsack	306-542-4235					C	
Gellner, Clayton S.	Southey	306-726-4323					C	
Hicks, Dale & Barry	Mossbank	306-229-9517					C	
Kerber, Greg	Rosthern	306-232-4474					C	
Lingnau, Dan	Saskatoon	306-281-8624					C	
Sayers, Charlie Joseph	Delmas	306-445-6522				R		
Wylie, Leslie Dale	Biggar	306-948-2807					C	
CDC MCGWIRE								
Pender, Richard Joseph	Saskatoon	306-651-4680					C	
CDC PLATINUM STAR								
Wylie, Leslie Dale	Biggar	306-948-2807					C	
CDC VALDRES								
Tomtene, Steven & Brad	Birch Hills	306-749-3447			F			
CERVEZA								
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				R		
Fritzler, Baine A. & Adam A.	Govan	306-484-2010				R		
CLAYMORE								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052					C	
ESMA								
Boldt, Garry	Osler	306-239-2071	S					
LEGACY								
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696					C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438				R		
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694					C	
Latrace, Bill	Caronport	306-693-2626					C	
Ostafie, Robert	Canora	306-563-6244					C	
Toman, Rick & Randy	Guernsey	306-365-8386					C	
LOWE								
Beuker, Allan Daniel	Melfort	306-752-4810				R		2
OREANA								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052	S	F	R	C		
STOCKFORD								
Lueke, Dennis	Humboldt	306-682-5170	S	F				

BEAN

BEAN

CDC BLACKSTRAP

Baxter, Kent R	Codette	306-862-4555	S		R			
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939	S					

CDC RAY

Walker, Wes & David	Outlook	306-873-7733				C		

CDC WM-3

Walker, Wes & David	Outlook	306-873-7733			R			

BIRDS-FOOT TREFOIL

BIRDSFOOT TREFOIL

LEO

Nutrien Ag Solutions (Canada) (Forages)	Carrot River	306-768-3335				C		

BROMEGRASS

BROMEGRASS

AC KNOWLES

Nutrien Ag Solutions (Canada) (Forages)	Carrot River	306-768-3335				C		
Stevenson, John A.	Carrot River	306-768-7558				C		

AC SUCCESS

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

ARMADA

Trawin Seeds	Melfort	306-752-4060				C		

FLEET

Northstar Seed Ltd.	Neepawa	204-476-5241				C		

MBA

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

MONTANA

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

CANARYGRASS

CANARYGRASS

CDC BASTIA

Nakonechny Donald , Coral & Lance	Ruthilda	306-932-4409			R			

CDC CIBO

Gizen, Jason	Prelate	306-628-8127				C		
Herle, Gregory & Andrew E.	Wilkie	306-843-2934			R			
Seed Source Inc.	Archerwill	306-323-4402			R			
Wiens, Brennan R.	Herschel	306-377-2002			R			2
Yauck, Kevin Rodney	Govan	306-484-4555				C		

CDC LUMIO

Herle, Gregory & Andrew E.	Wilkie	306-843-2934	S	F				
Lung Seeds Ltd.	Lake Lenore	306-368-2414	S	F				
Simpson, Trevor W.	Moose Jaw	306-693-9402	S					
Wiens, Brennan R.	Herschel	306-377-2002	S	F				

CANARY-SEED

CANARYSEED

CANTATE

Hansen, James S.	Yellow Grass	306-465-2525				C		

CHICKPEA

CHICKPEA

CDC CONSUL

Gizen, Jason	Prelate	306-628-8127	S	F	R	C		

CDC LANCER

Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F				
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294	S	F				
Printz, Gerald & Kurt	Gravelbourg	306-648-3511	S	F				
Reisner, Cecil & Barry	Limerick	306-642-8666	S	F				
Simpson, Trevor W.	Moose Jaw	306-693-9402	S	F				

CDC LEADER

Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F	R			
McDougall, Ken & Craig	Moose Jaw	306-693-3649				C		
Reisner, Cecil & Barry	Limerick	306-642-8666				C		
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F		C		

CDC ORION

McDougall, Ken & Craig	Moose Jaw	306-693-3649	S	F	R	C		
Riviere, Paul	Radville	306-869-7629			R	C		

CDC ORKNEY

Fraser, Scott & Shawn	Pambrun	306-741-0475	S					
Printz, Gerald & Kurt	Gravelbourg	306-648-3511	S					
Reisner, Cecil & Barry	Limerick	306-642-8666	S					
Simpson, Jamie P.	Moose Jaw	306-693-9402	S					

CHICK-PEA

Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433	S					
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S					

CLOVER

CLOVER

ALTASWEDE

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

AURORA

Interlake Forage Seeds Ltd.	Fisher Branch	204-372-6920				C		
Nutrien Ag Solutions (Canada) (Forages)	Carrot River	306-768-3335			C			

DAWN

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

FABABEAN

FABABEAN

219-16

Baxter, Daniel J.H.	North Battleford	306-445-5414		F				
Berscheid, K.N. & B. & E.K. & S.& C. & Kyle & Brent	Lake Lenore	306-368-2602		F				
Crosson, Lee, Max & Will	Welwyn	306-434-7436			R			
Crosson, Lorne & Glen	Welwyn	306-645-3337			R			
Fedoruk, Michael J.	Kamsack	306-542-4235		F				
Hetland, Ronald	Spalding	306-872-4617	S	F				
Peifer, Sheldon M.	Nipawin	306-862-9470		F				
Rempel, Blair Allan	Nipawin	306-862-3573	S	F				
Rude, Stanley & Assie, Craig	Naicam	306-874-2359	S		R			
Shymanski, Ronald Albert	Choiceland	306-428-2405		F	R			
Veikle, Lynne, Marshall & Jason	Cut Knife	306-398-2923		F				

CDC SNOWDROP

Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S	F	R	C		

CDC SSNS-1

Friesen, Kevin G.	Laird	604-882-4936				C		

DL RICO

Crosson, Lee, Max & Will	Welwyn	306-434-7436			R			
Mayerle, Kris	Tisdale	306-873-4261			R			

DL TESORO

Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602	S	F				

FABELLE

Dutton, David H.& George	Paynton	306-441-6799	S					
Rude, Stanley & Assie, Craig	Naicam	306-874-2359			R			

SNOWBIRD

Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C		
Crosson, Lee, Max & Will	Welwyn	306-434-7436				C		
Dutton, David H.& George	Paynton	306-441-6799				C		
Lung Seeds Ltd.	Lake Lenore	306-368-2414				C		
Mayerle, Kris	Tisdale	306-873-4261			R	C		
Sayers, Charlie Joseph	Delmas	306-445-6522				C		
Trawin Seeds	Melfort	306-752-4060		F		C		
Walker, Wes & David	Outlook	306-873-7733				C		
Wylie, Leslie Dale	Biggar	306-948-2807				C		

FESCUE

FESCUE

CARNIVAL

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

LAURA

Pickseed Canada Inc.	Winnipeg	204-633-0088			R			

PARDUS

Edwards, Ryan	Arbourfield	306-873-7429				C		

SAVORY

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

SENU

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

TOWER

Pickseed Canada Inc.	Winnipeg	204-633-0088				C		

FLAX

FLAX

AAC BRAVO

Fraser, Scott & Shawn	Pambrun	306-741-0475				C		
Hyndman, Neil S.	Balcarres	306-331-8168				C		

Palmier, Maurice, Jason & Anita	Lafleche	306-472-7824			R		
Tebbutt, Gregg & Blake D.	Nipawin	306-862-9730				C	
AAC BRIGHT							
Hanley, Erwin & Priscilla	Regina	306-586-4509			R		
Tomtene, Steven & Brad	Birch Hills	306-749-3447				C	
AAC MARVELOUS							
Sand, Evan	Limerick	306-263-4944			R		
Smith, Wayne D.	Limerick	306-263-4944				C	
CDC BETHUNE							
Beuker, Allan Daniel	Melfort	306-752-4810			R	C	2
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687			R		
CDC BURYU							
Reisner, Cecil & Barry	Limerick	306-642-8666				C	
CDC DORADO							
Hicks, Dale & Barry	Mossbank	306-229-9517				C	
CDC GLAS							
Allan, John Garth	Corning	306-457-2729				C	
Allan, John Richard	Corning	306-457-7310			R	C	
Allan, Raymond N. & Ruth	Corning	306-224-4666				C	
Altwasser, Rodney & Allen R.& Dean	Yellow Grass	306-465-2727				C	
Amos, K. Wayne	Oxbow	306-483-2963			R		
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602				C	
Beuker, Allan Daniel	Melfort	306-752-4810				C	
Beuker, Allan Daniel	Melfort	306-752-4810			R		2
Blumer, Brad & Doug	Dinsmore	306-460-7744				C	
Condie Seed	Regina	306-569-7333				C	
Dutton, David H.& George	Paynton	306-441-6799			R		
Ennis, Garnet, Neil & Schmidt, Jordan	Glenavon	306-429-2793				C	
Fritzler, Baine A. & Adam A.	Govan	306-484-2010				C	
Gaertner, Lyle	Tisdale	306-873-4936			R		
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339				C	
Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516			R	C	
Heggie, Robert Thomas	Leross	306-795-7493				C	
Hetland, Ronald	Spalding	306-872-4617				C	
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S			C	
Lung, Leonard & Devin & Brian	Lake Lenore	306-368-2224				C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649				C	
Novak, Orrin	Kuroki	306-338-2021				C	
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				C	
Ostafie, Robert	Canora	306-563-6244			R		
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638				C	
Seed Source Inc.	Archerwill	306-323-4402				C	
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800				C	
Smith, Wayne D.	Limerick	306-263-4944				C	
Yauck, Kevin Rodney	Govan	306-484-4555				C	
CDC NEELA							
Simpson, Trevor W.	Moose Jaw	306-693-9402	S	F		C	
CDC PLAVA							
Yauck, Kevin Rodney	Govan	306-484-4555			R		
CDC ROWLAND							
Amos, K. Wayne	Oxbow	306-483-2963	S	F			
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602	S	F			
Blumer, Brad & Doug	Dinsmore	306-460-7744		F			
Boldt, Garry	Osler	306-239-2071	S				
Condie Seed	Regina	306-569-7333		F			
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438	S	F			
Fritzler, Baine A. & Adam A.	Govan	306-484-2010	S	F			
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339		F			
Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516	S				
Hanley, Erwin & Priscilla	Regina	306-586-4509	S	F			
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S	F			

McDougall, Ken & Craig	Moose Jaw	306-693-3649	S	F			
Nakonechny Donald , Coral & Lance	Ruthilda	306-932-4409	S	F			
Noble, Garry	Mossbank	306-354-2679	S				
Ostafie, Robert	Canora	306-563-6244	S	F			
Reisner, Cecil & Barry	Limerick	306-642-8666	S	F			
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638	S	F			
Schmeling, Donald H.	Riceton	306-530-1052	S				
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800	S	F			
Tebbutt, Gregg & Blake D.	Nipawin	306-862-9730		F			
Trawin Seeds	Melfort	306-752-4060	S				
Trawin, Ashton	Melfort	306-752-4060		F			
Trawin, Mitchell	Melfort	306-752-4060		F			
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F			
Willner, Lorne E.	Davidson	306-567-4613	S				
Yauck, Kevin Rodney	Govan	306-484-4555	S				
CDC SANCTUARY							
Fraser, Scott & Shawn	Pambrun	306-741-0475				C	
Noble, Garry	Mossbank	306-354-2679				C	
Schmeling, Donald H.	Riceton	306-530-1052			R		
CDC SORREL							
Boyd, Clare W. & Dale A.	Melfort	306-752-2564				C	
Edmunds, Greg & Glen	Tisdale	306-873-4780				C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438			R		
Willner, Brady E.	Davidson	306-567-4613				C	
PRAIRIE THUNDER							
Bohun, Randy	Richard	306-481-5252			R		
TOPAZ							
Girodat, Gerald	Shaunavon	306-297-2563				C	
Lax, Robert	Pense	306-551-6558				C	
Reisner, Cecil & Barry	Limerick	306-642-8666				C	
VT50							
Crone, Megan, Kehlsie, Braeden, Vaughn & Tammie	Moose Jaw	306-691-5284			R		
Etter, James Raymond	Richardson	306-536-0380			R		
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052	S	F	R		

ALTAIR							
Johnston, Wilson	Rosetown	306-831-9949				C	
FINOLA							
Fresh Hemp Foods Ltd. (FHF)	Ste. Agathe	204-882-2480				C	
HEMPNUT							
Benson, Thomas	Regina	306-586-3293				C	
Campbell, Hugh	Qu'appelle	306-332-2214				C	

CDC GREENLAND							
Willner, Brady E.	Davidson	306-567-4613				C	
CDC GREENSTAR							
Condie Seed	Regina	306-569-7333			R		
Ellert, David & Christopher	Rockglen	306-476-7623			R		
Laforge, Troy	Swift Current	306-773-0924				C	
Moen, Jim	Cabri	306-587-7452		F		C	
Printz, Gerald & Kurt	Gravelbourg	306-648-3511	S	F			
Simpson, Jamie P.	Moose Jaw	306-693-9402			R		
CDC IMPOWER							
Garratt, Lyle C. & K.C.	Milestone	306-436-2178				C	
CDC IMPULSE							
Anderson, Skyler	Hazlet	306-741-6827				C	
Barlow, Bradley L. & Matthew	Griffin	306-861-6110			R		
Benson, Cory	Central Butte	306-891-6885				C	
Condie Seed	Regina	306-569-7333				C	
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236				C	
Denis, Michel P. & Marc	St. Denis	306-258-2219				C	
Edwards, Lawrence R. & Donna & Jeff & Mike & Mason	Nokomis	306-528-2140				C	
Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F	R		
Gibbings, Neil & Clark, Shaun	Swift Current	306-741-1250				C	

Girodat, Gerald	Shaunavon	306-297-2563				C	
Gizen, Jason	Prelate	306-628-8127	S	F		C	
Heenan, Thomas Dale & Deb	Regina	306-522-9375				C	
Johnson, Jordon	Swift Current	306-750-1701				C	
Labrecque, Roger	Saskatoon	306-373-9379				C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R		
Millar, Craig	Birsay	306-858-7012				C	
Nakonechny Donald, Coral & Lance	Ruthilda	306-932-4409			R		
Pavo, Keith	Birsay	306-227-8537				C	
Printz, Gerald & Kurt	Gravelbourg	306-648-3511				C	
Schmeling, Donald H.	Riceton	306-530-1052			R		
Simpson, Trevor W.	Moose Jaw	306-693-9402				C	
Sopatyk, Jeffery & Patti	Saskatoon	306-227-7867			R		
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402			R		
Wiens, Brennan R.	Herschel	306-377-2002				C	
Willner, Brady E.	Davidson	306-567-4613			R		
CDC IMVINCIBLE							
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402				C	
CDC LIMA							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415			R		
Barlow, Bradley L. & Matthew	Griffin	306-861-6110			R		
Catherwood, James	Ceylon	306-869-5423			R		
Condie Seed	Regina	306-569-7333		F	R		
Dear, Jonathon	Saskatoon	306-222-0666			R		
Ellert, David & Christopher	Rockglen	306-476-7623		F			
Ewen, Jeff	Riverhurst	306-796-7393			R		
Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F	R		
Garratt, Lyle C. & K.C.	Milestone	306-436-2178			R		
Gibbings, Neil & Clark, Shaun	Swift Current	306-741-1250		F			
Hansen, James S.	Yellow Grass	306-465-2525			R		
Johnson, Jordon	Swift Current	306-750-1701				C	
Mattus , Ronald	Central Butte	306-353-7556		F	R		
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R		
Nichols, Shae	Moose Jaw	306-631-5064			R		
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294	S	F	R		
Reisner, Cecil & Barry	Limerick	306-642-8666	S	F	R		
Schmeling, Donald H.	Riceton	306-530-1052		F			
Seymour, Glen Patrick, Donne, Kyle, & Kelly	Stewart Valley	306-778-2344			R		
Simpson, Jamie P.	Moose Jaw	306-693-9402	S	F	R	C	
Smith, Wayne D.	Limerick	306-263-4944		F	R		
Sopatyk, Jeffery & Patti	Saskatoon	306-227-7867	S	F	R		
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433			R		
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F	R		
Wiens, Brennan R.	Herschel	306-377-2002				C	
Willner, Lorne E.	Davidson	306-567-4613	S				
CDC MARBLE							
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339			R		
CDC MAXIM							
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714				C	
CDC NIMBLE							
Boldt, Garry	Osler	306-239-2071	S				
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939		F			
Fritzler, Baine A. & Adam A.	Govan	306-484-2010	S				
Heenan, Thomas Dale & Deb	Regina	306-522-9375	S				
Mattus, Ronald	Central Butte	306-353-7556		F			
Simpson, Trevor W.	Moose Jaw	306-693-9402	S	F	R		
Sopatyk, Jeffery & Patti	Saskatoon	306-227-7867	S	F			
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714		F			
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F			
CDC PERIDOT							
Yauck, Kevin Rodney	Govan	306-484-4555	S	F		C	

CDC PROCLAIM							
Crone, Megan, Kehlsie, Braeden, Vaughn & Tammie	Moose Jaw	306-691-5284				C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438		F			
Fritzler, Baine A. & Adam A.	Govan	306-484-2010		F			
Kemper, Russell & Donna	Fulda	306-682-4929		F			
Luscombe, Darren	Sintaluta	306-727-2222				C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649				C	
Simpson, Jamie P.	Moose Jaw	306-693-9402				C	
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433	S		R	C	
CDC REDMOON							
Blumer, Brad & Doug	Dinsmore	306-460-7744		F		C	
Fraser, Scott & Shawn	Pambrun	306-741-0475			R		
Friesen, Greg & Brea; Leavins, Brent & Betty Mae & Robert & Courtney	Elrose	306-378-7785				C	
Gibbings, Neil & Clark, Shaun	Swift Current	306-741-1250				C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R		
Printz, Gerald & Kurt	Gravelbourg	306-648-3511				C	
Shirriff, Keith & Harle, Doug	Regina	306-533-0046				C	
Simpson, Jamie P.	Moose Jaw	306-693-9402				C	
Willner, Brady E.	Davidson	306-567-4613			R		
CDC SIMMIE							
Amos, K. Wayne	Oxbow	306-483-2963	S	F			
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F			
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236		F			
Denis, Michel P. & Marc	St. Denis	306-258-2219	S				
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438	S	F			
Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F			
Girodat, Gerald	Shaunavon	306-297-2563		F			
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339		F			
Hanley, Erwin & Priscilla	Regina	306-586-4509	S	F			
Heenan, Thomas Dale & Deb	Regina	306-522-9375	S				
Herle, Gregory & Andrew E.	Wilkie	306-843-2934	S	F			
Mattus, Ronald	Central Butte	306-353-7556		F			
McDougall, Ken & Craig	Moose Jaw	306-693-3649	S	F			
Nakonechny Donald, Coral & Lance	Ruthilda	306-932-4409	S	F			
Simpson, Jamie P.	Moose Jaw	306-693-9402	S	F	R		
Sopatyk, Jeffery & Patti	Saskatoon	306-227-7867	S	F			
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F			
Wiens, Brennan R.	Herschel	306-377-2002	S	F			
Willner, Lorne E.	Davidson	306-567-4613	S				
CDC SUBLIME							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S				
Meier, Garry L.	Ridgedale	306-873-7652	S				
Moen, Jim	Cabri	306-587-7452	S				
INDIAN HEAD							
Nakonechny Donald, Coral & Lance	Ruthilda	306-932-4409	S		R		
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294	S				
Simpson, Jamie P.	Moose Jaw	306-693-9402				C	
Yauck, Kevin Rodney	Govan	306-484-4555	S	F			

ANDANTE							
Fritzler, Baine A. & Adam A.	Govan	306-484-2010		F		C	
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339				C	
CENTENNIAL							
Fritzler, Baine A. & Adam A.	Govan	306-484-2010				C	

AAC KONGSORE							
Fedoruk, Michael J.	Kamsack	306-542-4235		F			
AAC ORAVENA							
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235		F			
AC MORGAN							
Beuker, Allan Daniel	Melfort	306-752-4810			R		

Beuker, Allan Daniel	Melfort	306-752-4810		F			2
Edmunds, Greg & Glen	Tisdale	306-873-4780				C	
Gaertner, Lyle	Tisdale	306-873-4936				C	
Goossen, Mathew	Sturgis	306-547-7432			R		
Josuttes, Brock	Paradise Hill	306-248-7077				C	
Kerber, Greg	Rosthern	306-232-4474				C	
Lepp, Milton & Elden & Neufeld, Murray	Hepburn	306-254-4243				C	
Seidle, Edward & Brett & Cameron J. & Mervyn Anthony	Medstead	306-342-4377				C	
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687	S			C	
Wilfing, Ryan John	Meadow Lake	306-236-6811				C	
CDC ARBORG							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415			R		
Beuker, Allan Daniel	Melfort	306-752-4810				C	
Beuker, Allan Daniel	Melfort	306-752-4810			R		2
Boyd, Clare W. & Dale A.	Melfort	306-752-2564				C	
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C	
Dear, Jonathon	Saskatoon	306-222-0666			R	C	
Etter, James Raymond	Richardson	306-536-0380			R		
Fedoruk, Michael J.	Kamsack	306-542-4235				C	
Fedoruk, Rod M. & Cathy	Kamsack	306-542-4235	S		R		
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438				C	
Frederick Seeds	Watson	306-287-3977			R	C	
Lindgren, Jordan & Jennifer	Norquay	306-594-7644				C	
Littman, Allan Blake & L. Robert & Adam	Saltcoats	306-744-2554			R		
Mayerle, Kris	Tisdale	306-873-4261				C	
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912	S	F	R		
Palmier, Maurice, Jason & Anita	Lafleche	306-472-7824				C	
Sayers, Charlie Joseph	Delmas	306-445-6522			R		
Seed Source Inc.	Archerwill	306-323-4402		F	R		
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800				C	
Toman, Rick & Randy	Guernsey	306-365-8386				C	
Tomtene, Steven & Brad	Birch Hills	306-749-3447			R		
Trawin, Alan Ross	Melfort	306-752-4060			R		
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377				C	
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984			R		
Wiid, Petrus	Watson	306-287-3977				C	
Wilfing, Ryan John	Meadow Lake	306-236-6811			R		
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423	S	F		C	
CDC BALER							
Trawin, Mitchell	Melfort	306-752-4060			R		
CDC BOYER							
Stoll, Douglas John & Lyndon	Delisle	306-493-2534			R		
CDC DANCER							
Jones, Bradley, Wanda, Tennille & Jennifer	Wadena	306-338-2381			R	C	
CDC ENDURE							
Boldt, Garry	Osler	306-239-2071	S	F			
Crosson, Lorne & Glen	Welwyn	306-645-3337	S				
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235		F			
Gaertner, Lyle	Tisdale	306-873-4936	S				
Lueke, Dennis	Humboldt	306-682-5170		F			
CDC HAYMAKER							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415			R	C	
Bodnaryk, John E., Ian & Vangen, Stacy	Rhein	306-273-4263				C	
Boldt, Garry	Osler	306-239-2071	S				
Dear, Jonathon	Saskatoon	306-222-0666				C	
Fedoruk, Michael J.	Kamsack	306-542-4235				C	
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235	S				
Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F		C	
Hicks, Dale & Barry	Mossbank	306-229-9517				C	
Kerber, Greg	Rosthern	306-232-4474			R	C	
Ostafie, Robert	Canora	306-563-6244	S			C	
Woroschuk, Andrew	Calder	306-742-4682				C	

Wylie, Leslie Dale	Biggar	306-948-2807				C	
CDC MINSTREL							
Condie Seed	Regina	306-569-7333		F		C	
Jones, Bradley, Wanda, Tennille & Jennifer	Wadena	306-338-2381	S	F	R	C	
CDC MORRISON							
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912	S	F			
CDC NASSER							
Beausoleil, Michael	Delmas	306-441-6421				C	
Fraser, Scott & Shawn	Pambrun	306-741-0475				C	
CDC NORSEMAN							
Stoll, Douglas John & Lyndon	Delisle	306-493-2534	S	F			
CDC RUFFIAN							
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602			R	C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438		F	R		
Frederick Seeds	Watson	306-287-3977				C	
Jones, Bradley, Wanda, Tennille & Jennifer	Wadena	306-338-2381	S		R	C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649				C	
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912			R		
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377				C	
CDC SO-I							
Fedoruk, Michael J.	Kamsack	306-542-4235			R		
Gellner, Clayton S.	Southey	306-726-4323				C	
Hicks, Dale & Barry	Mossbank	306-229-9517				C	
CS CAMDEN							
Andres, Wayne	Hepburn	306-227-6905				C	
Bohun, Randy	Richard	306-481-5252				C	
Dear, Jonathon	Saskatoon	306-222-0666				C	
Fedoruk, Michael J.	Kamsack	306-542-4235				C	
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235		F			
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694				C	
Hetland, Ronald	Spalding	306-872-4617			R		
Johnson, Jordon	Swift Current	306-750-1701				C	
Johnson, Lee Stuart	Margo	306-324-4315			R		
Lung Seeds Ltd.	Lake Lenore	306-368-2414		F		C	
Mayerle, Erwin D.	Tisdale	306-873-4261				C	
Mcarthur, Brennan	Watrous	306-230-9853				C	
Novak, Orrin	Kuroki	306-338-2021			R	C	
South, Winston & Richard & Bradley	Melfort	306-752-9840				C	
Trawin, Alan Ross	Melfort	306-752-4060		F		C	
ORE3542M							
Amos, K. Wayne	Oxbow	306-483-2963				C	
Filarczuk, Darren	Ituna	306-795-2871				C	
Heavin, G. Harvey & G. Ryan	Melfort	306-752-4171			R		
Larsen, Lyle L.	Aylsham	306-862-7333			R	C	
Rempel, Nicole	Nipawin	306-812-7209			R		
Seidle, Edward & Brett & Cameron J. & Mervyn Anthony	Medstead	306-342-4377		F		C	
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687			R		
Warkentin, Michael, Toews Bruce & Shawn	Porcupine Plain	306-814-7705				C	
SUMMIT							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415		F		C	
Beuker, Allan Daniel	Melfort	306-752-4810				C	2
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C	
Ostafie, Robert	Canora	306-563-6244				C	
PEAS							
AAC ABERDEEN							
Crosson, Lee, Max & Will	Welwyn	306-434-7436	S	F			
AAC ARDILL							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F	R		
AAC CARVER							
Bohun, Randy	Richard	306-481-5252				C	
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058				C	

Condie Seed	Regina	306-569-7333			C		
Crosson, Lee, Max & Will	Welwyn	306-434-7436	F	R			
Eckart, Tanis	Richmound	306-661-7649			C		
Eckart, Tanis	Richmound	306-661-7649			C		2
Fedoruk, Michael J.	Kamsack	306-542-4235			C		
Gerry , Greg	Creelman	306-457-2220		R			
Hyndman, Glen	Balcarres	306-331-8168			C		
Mayerle, Erwin D.	Tisdale	306-873-4261		R	C		
Wylie, Leslie Dale	Biggar	306-948-2807		R			
AAC CHROME							
Condie Seed	Regina	306-569-7333		R	C		
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236			C		
Dangstorp, Brian & Perry	Redvers	306-452-3443			C		
Danielson, Lionel & Bonnie	Norquay	306-594-7417	F				
Dowdeswell, Donald D.	Pennant	306-750-1114			C		
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235		R	C		
Fraser, Scott & Shawn	Pambrun	306-741-0475			C		
Gellner, Clayton S.	Southey	306-726-4323			C		
Lindgren, Jordan & Jennifer	Norquay	306-594-7644			C		
Luscombe, Darren	Sintaluta	306-727-2222			C		
McCarthy, Brent	Corning	306-224-4848			C		
McDougall, Ken & Craig	Moose Jaw	306-693-3649	S	F	R		
Palmier, Maurice, Jason & Anita	Lafleche	306-472-7824			C		
Pavo, Keith	Birsay	306-227-8537			C		
Pitura, Carl & Calvin C. & Connor J. & Greaves, Tom	Domain	204-736-2849			C		
Sand, Evan	Limerick	306-263-4944			C		
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800			C		
Toman, Rick & Randy	Guernsey	306-365-8386			C		
Wiid, Petrus	Watson	306-287-3977		R	C		
Wilfing, Ryan John	Meadow Lake	306-236-6811		R			
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423	S	F	R	C	
Wylie, Leslie Dale	Biggar	306-948-2807				C	
AAC LACOMBE							
Bodnaryk, John E., Ian & Vangen, Stacy	Rhein	306-273-4263				C	
AAC LISCARD							
Heggie, Kyle Robert	Leross	306-795-7208				C	
AAC LORLIE							
Heggie, Robert Thomas	Leross	306-795-7493	S				
AAC PROFIT							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415		R			
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696		R			
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939		R			
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235		R			
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438		R			
Frederick Seeds	Watson	306-287-3977		R			
Herle, Gregory & Andrew E.	Wilkie	306-843-2934		R			
Kerber, Greg	Rosthern	306-232-4474		R			
Tebbutt, Gregg & Blake D.	Nipawin	306-862-9730	S	F	R		
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714		F			
Wiid, Petrus	Watson	306-287-3977		R			
Wilfing, Ryan John	Meadow Lake	306-236-6811		R			
ABARTH							
Herle, Gregory & Andrew E.	Wilkie	306-843-2934		R			
CDC ACER							
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438		R			2
CDC AMARILLO							
Allan, John Garth	Corning	306-457-2729		R	C		
Allan, John Richard	Corning	306-457-7310			C		
Edwards, Lawrence R. & Donna & Jeff & Mike & Mason	Nokomis	306-528-2140			C		
Hetland, Ronald	Spalding	306-872-4617			C		
Lung, Leonard & Devin & Brian	Lake Lenore	306-368-2224		F	C		
Luscombe, Darren	Sintaluta	306-727-2222			C		
Ostafie, Brendan	Canora	306-563-6244			C		
Robinson, Oren A., Marlene & Wade	Landis	306-658-4755		R			

Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984				C	
CDC BLAZER							
Friesen, Greg & Brea; Leavins, Brent & Betty Mae & Robert & Courtney	Elrose	306-378-7785				C	
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339	S				
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433			R		
CDC CANARY							
Klemmer, Richard	Nipawin	306-862-3874		F			
Ostafie, Brendan	Canora	306-563-6244		F			
Rempel, Blair Allan	Nipawin	306-862-3573	S	F		C	
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638				C	
Tebbutt, Gregg & Blake D.	Nipawin	306-862-9730			R	C	
Tomtene, Steven & Brad	Birch Hills	306-749-3447				C	
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984			R		
Wilfing, Ryan John	Meadow Lake	306-236-6811			R		
Youzwa, Donald	Nipawin	306-862-5690		F	R		
CDC DAKOTA							
Mayerle, Erwin D.	Tisdale	306-873-4261	S	F			
CDC FOREST							
Ackerman, Patrick	Chamberlain	306-638-3177				C	
Amos, K. Wayne	Oxbow	306-483-2963			R		
Andres, Wayne	Hepburn	306-227-6905			R		
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F	R		
Baxter, Daniel J.h.	North Battleford	306-445-5414		F			
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602	S	F	R		
Blumer, Brad & Doug	Dinsmore	306-460-7744				C	
Bodnaryk, John E., Ian & Vangen, Stacy	Rhein	306-273-4263				C	
Boldt, Garry	Osler	306-239-2071	S			C	
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058			R	C	
Condie Seed	Regina	306-569-7333			R		
Frederick Seeds	Watson	306-287-3977				C	
Glenn, Cody	Climax	306-293-7525			R		
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339	S			C	
Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516	S	F		C	
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694				C	
Hetland, Ronald	Spalding	306-872-4617				C	
Johnson, Jordon	Swift Current	306-750-1701				C	
Jones, Bradley, Wanda, Tennille & Jennifer	Wadena	306-338-2381	S	F			
Kemper, Russell & Donna	Fulda	306-682-4929				C	
Lingnau, Dan	Saskatoon	306-281-8624			R		
Mattus, Ronald	Central Butte	306-353-7556			R		
Mayerle, Erwin D.	Tisdale	306-873-4261				C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R	C	
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991				C	
Nakonechny Donald, Coral & Lance	Ruthilda	306-932-4409	S			C	
Novak, Orrin	Kuroki	306-338-2021			R	C	
Ostafie, Brendan	Canora	306-563-6244		F			
Panasiuk, Kelly & Logan & Dean & Dillon	Wadena	306-338-3756				C	
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294	S	F			
Sayers, Charlie Joseph	Delmas	306-445-6522				C	
Seidle, Edward & Brett & Cameron J. & Mervyn Anthony	Medstead	306-342-4377			R		
Shirriff, Keith & Harle, Doug	Regina	306-533-0046			R		
Simpson, Jamie P.	Moose Jaw	306-693-9402	S	F			
Sopatyk, Jeffery & Patti	Saskatoon	306-227-7867	S	F		C	
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433	S		R	C	
Trawin Seeds	Melfort	306-752-4060	S				
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714	S		R		
Veikle, Lynne, Marshall & Jason	Cut Knife	306-398-2923	S				

PEA

Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F	R		
CDC GREENWATER							
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058				C	
Jones, Bradley, Wanda, Tennille & Jennifer	Wadena	306-338-2381	S	F	R		
CDC INCA							
Allan, Raymond N. & Ruth	Corning	306-224-4666				C	
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C	
Condie Seed	Regina	306-569-7333			R		
Dangstorp, Brian & Perry	Redvers	306-452-3443				C	
Dear, Jonathon	Saskatoon	306-222-0666				C	
Gizen, Jason	Prelate	306-628-8127	S	F	R	C	
Kondratowicz, Frank	Unity	306-228-3684				C	
Lax, Robert	Pense	306-551-6558				C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649		F	R	C	
Mcarthur, Brennan	Watrous	306-230-9853				C	
Ostafie, Brendan	Canora	306-563-6244		F			
Reisner, Cecil & Barry	Limerick	306-642-8666			R		
Riviere, Paul	Radville	306-869-7629			R	C	
Sand, Evan	Limerick	306-263-4944				C	
Shymanski, Tyler	Choiceland	306-276-8741				C	
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714	S			C	
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F	R	C	
Wiens, Brennan R.	Herschel	306-377-2002		F	R	C	
Yauck, Kevin Rodney	Govan	306-484-4555			R	C	
CDC JASPER							
Bodnaryk, John E., Ian & Vangen, Stacy	Rhein	306-273-4263			R		
Fedoruk, Michael J.	Kamsack	306-542-4235		F			
CDC LEWOCHKO							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F	R		
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602		F	R		
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939	S	F	R		
Condie Seed	Regina	306-569-7333			R		
Crosson, Lee, Max & Will	Welwyn	306-434-7436			R		
Denis, Michel P. & Marc	St. Denis	306-258-2219			R		
Dutton, David H.& George	Paynton	306-441-6799			R		
Edwards, Lawrence R. & Donna & Jeff & Mike & Mason	Nokomis	306-528-2140			R		
Fraser, Scott & Shawn	Pambrun	306-741-0475			R		
Fritzler, Baine A. & Adam A.	Govan	306-484-2010		F	R		
Gibbings, Neil & Clark, Shaun	Swift Current	306-741-1250		F			
Goossen, Mathew	Sturgis	306-547-7432			R		
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339			R		
Heavin, G. Harvey & G. Ryan	Melfort	306-752-4171	S				
Labrecque, Roger	Saskatoon	306-373-9379			R		
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S		R		
Littman, Allan Blake & L. Robert & Adam	Saltcoats	306-744-2554	S	F	R		
McDougall, Ken & Craig	Moose Jaw	306-693-3649	S	F	R		
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991			R		
Nakonechny Donald , Coral & Lance	Ruthilda	306-932-4409	S	F	R		
Ostafie, Brendan	Canora	306-563-6244		F			
Peifer, Sheldon M.	Nipawin	306-862-9470			R		
Robinson, Oren A., Marlene & Wade	Landis	306-658-4755			R		
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638	S		R	C	
Sopatyk, Jeffery & Patti	Saskatoon	306-227-7867	S	F	R		
Tomtene, Steven & Brad	Birch Hills	306-749-3447	S	F			
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714			R		
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984			R		
Warkentin, Michael, Toews Bruce & Shawn	Porcupine Plain	306-814-7705			R		

PEA

Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F	R		
Wylie, Leslie Dale	Biggar	306-948-2807			R		
CDC LIMERICK							
Dutton, David H.& George	Paynton	306-441-6799		F			
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714	S			C	
CDC MEADOW							
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438			R		2
CDC MOSAIC							
Boldt, Garry	Osler	306-239-2071	S				
CDC RAEZER							
Illingworth, Todd Douglas & Caden	North Battleford	306-445-5263				C	
Jones, Bradley, Wanda, Tennille & Jennifer	Wadena	306-338-2381	S	F			
Ostafie, Brendan	Canora	306-563-6244		F			
Panasiuk, Kelly & Logan & Dean & Dillon	Wadena	306-338-3756				C	
CDC SPECTRUM							
Allan, Raymond N. & Ruth	Corning	306-224-4666				C	
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F	R		
Blumer, Brad & Doug	Dinsmore	306-460-7744				C	
Boyd, Clare W. & Dale A.	Melfort	306-752-2564				C	
Buziak, Ronald Charles	Mayfair	306-445-6556				C	
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C	
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939				C	
Dear, Jonathon	Saskatoon	306-222-0666		F	R	C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438	S	F	R		
Friesen, Greg & Brea; Leavins, Brent & Betty Mae & Robert & Courtney	Elrose	306-378-7785				C	
Friesen, Kevin G.	Laird	604-882-4936				C	
Gibbings, Neil & Clark, Shaun	Swift Current	306-741-1250				C	
Girodat, Gerald	Shaunavon	306-297-2563				C	
Goossen, Mathew	Sturgis	306-547-7432				C	
Hanmer, Ronald F., Kent, Brad & Dallas	Govan	306-484-4327				C	
Hetland, Ronald	Spalding	306-872-4617				C	
Huber, Daniel & Rebecca	Landis	306-658-4200				C	
Klemmer, Richard	Nipawin	306-862-3874				C	
Latrace, Bill	Caronport	306-693-2626				C	
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S	F	R		
Littman, Allan Blake & L. Robert & Adam	Saltcoats	306-744-2554				C	
Mayerle, Erwin D.	Tisdale	306-873-4261				C	
McDougall, Ken & Craig	Moose Jaw	306-693-3649	S	F	R	C	
Moen, Jim	Cabri	306-587-7452		F			
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				C	
Reisner, Cecil & Barry	Limerick	306-642-8666	S	F	R	C	
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800				C	
Shirriff, Keith & Harle, Doug	Regina	306-533-0046			R		
Shymanski, Ronald Albert	Choiceland	306-428-2405			R		
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714		F		C	
Willner, Brady E.	Davidson	306-567-4613			R		
Winterhalt, Tim	Unity	306-228-3170				C	
Woroschuk, Andrew	Calder	306-742-4682				C	
Wylie, Leslie Dale	Biggar	306-948-2807				C	
Youzwa, Donald	Nipawin	306-862-5690		F	R		
CDC SPRUCE							
Andres, Wayne	Hepburn	306-227-6905				C	
Baxter, Kent R	Codette	306-862-4555				C	
Beuker, Allan Daniel	Melfort	306-752-4810				C	
Klemmer, Richard	Nipawin	306-862-3874				C	
Rude, Stanley & Assie, Craig	Naicam	306-874-2359	S		R	C	
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714	S			C	
Veikle, Jason	Cut Knife	306-398-7688		F		C	
Youzwa, Donald	Nipawin	306-862-5690		F	R		

PEA

DL DELICIOUS

Gellner, Clayton S.	Southey	306-726-4323	S				
Heggie, Robert Thomas	Leross	306-795-7493	S				
Lueke, Dennis	Humboldt	306-682-5170			R		

DL GOLDEYE

Van Burck, Hans, Marianne & Mira	Star City	306-863-4377	S	F			

RAPE

SYNERGY

Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438				C	2
Trawin Seeds	Melfort	306-752-4060				C	

RYE

GAZELLE

Trawin Seeds	Melfort	306-752-4060				C	

HAZLET

Hicks, Dale & Barry	Mossbank	306-229-9517			R	C	

SOYBEAN

DEVO R2X

Semences Prograin Inc	St-Cesaire	450-469-5744				C	

FRESCO R2X

Semences Prograin Inc	St-Cesaire	450-469-5744			R		

MAHONY R2

Gerry, Greg	Creelman	306-457-2220				C	
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433				C	

NSC REDVERS RR2X

Woods, Dale Arthur & Daryn	Rocanville	306-645-4423				C	

NSC WATSON RR2Y

Northstar Genetics,	Winnipeg	204-262-2421				C	
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377				C	

NSC WYNYARD RR2X

Van Burck, Hans, Marianne & Mira	Star City	306-863-4377				C	

SIBERIA

Semences Prograin Inc	St-Cesaire	450-469-5744	S		R	C	

TORRO R2

Semences Prograin Inc	St-Cesaire	450-469-5744		F		C	

YOUNG R2X

Gerry, Greg	Creelman	306-457-2220			R		

TIMOTHY

AC ALLIANCE

Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

ARLAKA

Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

BASHO

Button, Shayne	Carrot River	306-768-2597				C	
Nutrien Ag Solutions (Canada) (Forages)	Carrot River	306-768-3335				C	

CATAPULT

BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C	

CLIMAX

Baxter, Kent R	Codette	306-862-4555				C	
Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

COMER

Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

COMTAL

Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

DOLINA

Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

GRINDSTAD

Nutrien Ag Solutions (Canada) (Forages)	Carrot River	306-768-3335		F		C	

IMPACTOR

BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C	

SUMMERGRAZE

Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

TRYGGVE

Nutrien Ag Solutions(Canada) (Forages)	Carrot River	306-768-3335				C	

WINNETOU

Pickseed Canada Inc.	Winnipeg	204-633-0088				C	

TRITICALE

AB STAMPEDER

Girodat, Gerald	Shaunavon	306-297-2563			R		

BUNKER

Girodat, Gerald	Shaunavon	306-297-2563			R		
Trawin, Alan Ross	Melfort	306-752-4060			R		
Trawin, Ashton	Melfort	306-752-4060			R		

FRIDGE

Trawin, Alan Ross	Melfort	306-752-4060				C	

WHEAT

AAC ALIDA - AAC BRANDON

Allan, Raymond N. & Ruth	Corning	306-224-4666				C	
Amos, K. Wayne	Oxbow	306-483-2963			R	C	
Andres, Wayne	Hepburn	306-227-6905				C	
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F	R		
Beuker, Allan Daniel	Melfort	306-752-4810			R		
Boldt, Garry	Osler	306-239-2071			R		
Boyes, Douglas John	Kelvington	306-327-4980				C	
Buziak, Ronald Charles	Mayfair	306-445-6556				C	
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939		F	R		
Crosson, Lorne & Glen	Welwyn	306-645-3337				C	
Dear, Jonathon	Saskatoon	306-222-0666				C	
Dutton, David H.& George	Paynton	306-441-6799			R		
Ennis, Garnet, Neil & Schmidt, Jordan	Glenavon	306-429-2793				C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438			R	C	
Filarczuk, Darren	Ituna	306-795-2871				C	
Fowler, Edith	Central Butte	306-796-4652				C	
Fraser, Edward H. & Glen & Dale	Yarbo	306-745-3830				C	
Gaertner, Lyle	Tisdale	306-873-4936			R		
Hanmer, Ronald F., Kent, Brad & Dallas	Govan	306-484-4327			R	C	
Heavin, G. Harvey & G. Ryan	Melfort	306-752-4171			R	C	
Heavin, Larry N. & L. Warren	Melfort	306-752-4020			R		
Huber, Daniel & Rebecca	Landis	306-658-4200			R		
Josuttes, Brock	Paradise Hill	306-248-7077				C	
Kondratowicz, Frank	Unity	306-228-3684			R		
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S		R	C	
Lindgren, Jordan & Jennifer	Norquay	306-594-7644				C	
Lingnau, Dan	Saskatoon	306-281-8624				C	
Lung Seeds Ltd.	Lake Lenore	306-368-2414			R		
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991			R	C	
Nakonechny Donald , Coral & Lance	Ruthilda	306-932-4409			R		
Ostafie, Robert	Canora	306-563-6244			R		
Pratchler, Leander	Muenster	306-682-3317				C	
Rempel, Blair Allan	Nipawin	306-862-3573				C	
Rude, Stanley & Assie, Craig	Naicam	306-874-2359	S		R		
Schultz, Bernard J	Kuroki	306-338-2082			R		
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800			R	C	
Shirriff, Keith & Harle, Doug	Regina	306-533-0046			R		
Smysniuk, Delon	Ituna	306-795-7691				C	
Tebbutt, Gregg & Blake D.	Nipawin	306-862-9730			R		
Trawin, Alan Ross	Melfort	306-752-4060		F		C	
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687	S	F	R		
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377			R		
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714			R		
Woroschuk, Andrew	Calder	306-742-4682			R	C	

AAC AWESOME - AC ANDREW

Beausoleil, Michael	Delmas	306-441-6421			R		
Blyth, Darran	Waseca	780-205-2677			R	C	
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377				C	
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714			R		

AAC BRANDON

Ackerman, Patrick	Chamberlain	306-638-3177				C	
Allan, John Garth	Corning	306-457-2729				C	
Allan, John Richard	Corning	306-457-7310				C	
Allan, Raymond N. & Ruth	Corning	306-224-4666				C	

Altwasser, Rodney & Allen R.& Dean	Yellow Grass	306-465-2727				C		
Amos, K. Wayne	Oxbow	306-483-2963				C		
Beuker, Allan Daniel	Melfort	306-752-4810			R	C		2
Blumer, Brad & Doug	Dinsmore	306-460-7744				C		
Crosson, Lee, Max & Will	Welwyn	306-434-7436				C		
Edwards, Lawrence R. & Donna & Jeff & Mike & Mason	Nokomis	306-528-2140				C		
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235				C		
Fowler, Edith	Central Butte	306-796-4652				C		
Fraser, Scott & Shawn	Pambrun	306-741-0475				C		
Gerry , Greg	Creelman	306-457-2220				C		
Goossen, Mathew	Sturgis	306-547-7432				C		
Heavin, G. Harvey & G. Ryan	Melfort	306-752-4171			R	C		
Heavin, Larry N. & L. Warren	Melfort	306-752-4020	S	F	R			
Heavin, Milton Russell	Melfort	306-752-4071				C		
Keyser, Robert Sean	Cupar	306-723-4949				C		
Lung, Leonard & Devin & Brian	Lake Lenore	306-368-2224				C		
Luscombe, Darren	Sintaluta	306-727-2222				C		
Needham, Reginald R.	Oxbow	306-483-5052				C		
Novak, Orrin	Kuroki	306-338-2021			R	C		
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912			R			
Ostafie, Robert	Canora	306-563-6244				C		
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638	S	F				
Sandercock, Eric M.	Balcarres	306-334-2958				C		
Sayers, Charlie Joseph	Delmas	306-445-6522			R			
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800				C		
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433				C		
Trowell, Kenneth & Larry & Nathan	Saltcoats	306-744-2687		F	R			
Willner, Brady E.	Davidson	306-567-4613				C		
AAC BROADACRES - AAC BRANDON								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052	S					
AAC CABRI								
Reisner, Cecil & Barry	Limerick	306-642-8666			R			
AAC CAMERON - CARBERRY								
Denis, Michel P. & Marc	St. Denis	306-258-2219				C		
Frederick Seeds	Watson	306-287-3977				C		
Mayerle, Kris	Tisdale	306-873-4261				C		
Trawin, Alan Ross	Melfort	306-752-4060				C		
Yauck, Kevin Rodney	Govan	306-484-4555				C		
AAC CIRRUS								
Girodat, Gerald	Shaunavon	306-297-2563			R			
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R	C		
Smith, Ron T.W. & Barb A.	Limerick	306-263-4944			R			
AAC CONGRESS								
Anderson, Skyler	Hazlet	306-741-6827				C		
Eckart, Tanis	Richmound	306-661-7649				C		
Johnson, Jordon	Swift Current	306-750-1701				C		
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294	S	F	R	C		
Printz, Gerald & Kurt	Gravelbourg	306-648-3511				C		
Simpson, Trevor W.	Moose Jaw	306-693-9402	S	F	R			
AAC DONLOW								
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294	S	F				
Reisner, Cecil & Barry	Limerick	306-642-8666	S	F				
AAC ELIE								
Luscombe, Darren	Sintaluta	306-727-2222				C		
AAC FORAY - AAC PENHOLD								
Wilfing, Ryan John	Meadow Lake	306-236-6811				C		
AAC GOLDRUSH								
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R			
AAC GRAINLAND								
Anderson, Skyler	Hazlet	306-741-6827			R			
Condie Seed	Regina	306-569-7333			R			
Ellert, David & Christopher	Rockglen	306-476-7623			R			
Fowler, Edith	Central Butte	306-796-4652			R			

Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F		C		
Friesen, Greg & Brea; Leavins, Brent & Betty Mae & Robert & Courtney	Elrose	306-378-7785			R			
Printz, Gerald & Kurt	Gravelbourg	306-648-3511	S	F		C		
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402			R			
AAC HODGE								
Condie Seed	Regina	306-569-7333	S					
AAC HODGE - BW5044								
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602	S				1	
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939	S				1	
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235	S				1	
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377	S				1	
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714	S				1	
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423	S				1	
AAC JATHARIA - CARBERRY								
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638			R			
AAC LEROY - AAC REDBERRY								
Amos, K. Wayne	Oxbow	306-483-2963			R			
Anderson, Skyler	Hazlet	306-741-6827				C		
Blumer, Brad & Doug	Dinsmore	306-460-7744			R			
Bodnaryk, John E., Ian & Vangen, Stacy	Rhein	306-273-4263				C		
Boyd, Clare W. & Dale A.	Melfort	306-752-2564				C		
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939			R	C		
Crosson, Lee, Max & Will	Welwyn	306-434-7436		F	R			
Dangstorp, Brian & Perry	Redvers	306-452-3443			R			
Denis, Michel P. & Marc	St. Denis	306-258-2219				C		
Fedoruk, Michael J.	Kamsack	306-542-4235		F		C		
Johnson, Jordon	Swift Current	306-750-1701				C		
Kemper, Russell & Donna	Fulda	306-682-4929				C		
Kerber, Greg	Rosthern	306-232-4474				C		
Kondratowicz, Frank	Unity	306-228-3684				C		
Lindgren, Jordan & Jennifer	Norquay	306-594-7644				C		
Lung, Leonard & Devin & Brian	Lake Lenore	306-368-2224				C		
Luscombe, Darren	Sintaluta	306-727-2222			R			
Mayerle, Kris	Tisdale	306-873-4261			R	C		
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				C		
Pavo, Keith	Birsay	306-227-8537			R			
Pratchler, Leander	Muenster	306-682-3317				C		
Printz, Gerald & Kurt	Gravelbourg	306-648-3511			R			
Rempel, Blair Allan	Nipawin	306-862-3573				C		
Rude, Stanley & Assie, Craig	Naicam	306-874-2359				C		
Sayers, Charlie Joseph	Delmas	306-445-6522				C		
Tomtene, Steven & Brad	Birch Hills	306-749-3447			R	C		
Wiens, Brennan R.	Herschel	306-377-2002				C		
Wiid, Petrus	Watson	306-287-3977			R			
Wylie, Leslie Dale	Biggar	306-948-2807		F		C		
Yauck, Kevin Rodney	Govan	306-484-4555				C		
AAC MAGNET								
Condie Seed	Regina	306-569-7333				C		
Danielson, Lionel & Bonnie	Norquay	306-594-7417			R			
Fedoruk, Rod M. & Cathy	Kamsack	306-542-4235			R			
Fenton, Robin Paul	Tisdale	306-873-3234			R			
Heggie, Kyle Robert	Leross	306-795-7208			R			
Sand, Evan	Limerick	306-263-4944		F	R			
Sayers, Charlie Joseph	Delmas	306-445-6522			R			
Shwaga, Jeff W.	Wroxton	306-742-4590				C		
Smith, Kyle	Limerick	306-263-4944		F				
AAC PARAMOUNT - AC ANDREW								
Herle, Gregory & Andrew E.	Wilkie	306-843-2934				C		
Mattus , Ronald	Central Butte	306-353-7556				C		
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984		F	R			
AAC PENHOLD								
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058				C		

Wilfing, Ryan John	Meadow Lake	306-236-6811				C		
AAC PREVAIL - CDC PLENTIFUL								
Wiens, Brennan R.	Herschel	306-377-2002				C		2
AAC REDBERRY								
Anderson, Skyler	Hazlet	306-741-6827				C		2
Bodnaryk, John E., Ian & Vangen, Stacy	Rhein	306-273-4263		F		C		
Crosson, Lee, Max & Will	Welwyn	306-434-7436			R			
Crosson, Lorne & Glen	Welwyn	306-645-3337			R			
Ennis, Garnet, Neil & Schmidt, Jordan	Glenavon	306-429-2793				C		
Fedoruk, Michael J.	Kamsack	306-542-4235		F		C		
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438			R	C		
Goossen, Mathew	Sturgis	306-547-7432				C		
Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516		F		C		
Lueke, Dennis	Humboldt	306-682-5170				C		
Luscombe, Darren	Sintaluta	306-727-2222				C		
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433				C		
Warkentin, Michael, Toews Bruce & Shawn	Porcupine Plain	306-814-7705				C		
Wiid, Petrus	Watson	306-287-3977			R			
Wilfing, Ryan John	Meadow Lake	306-236-6811				C		
Winterhalt, Tim	Unity	306-228-3170				C		
AAC REDSTAR								
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377	S	F				
AAC RUSSELL - AAC BRANDON								
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F				
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235	S	F				
Herle, Gregory & Andrew E.	Wilkie	306-843-2934	S	F				
Tomtene, Steven & Brad	Birch Hills	306-749-3447	S	F				
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423	S	F				
AAC SPITFIRE								
Ackerman, Patrick	Chamberlain	306-638-3177				C		
Blumer, Brad & Doug	Dinsmore	306-460-7744				C		
Wiens, Brennan R.	Herschel	306-377-2002				C		
AAC STARBUCK - AAC BRANDON								
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F				
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602		F	R			
Blumer, Brad & Doug	Dinsmore	306-460-7744				C		
Boldt, Garry	Osler	306-239-2071		F				
Boyd, Clare W. & Dale A.	Melfort	306-752-2564	S	F				
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696	S	F				
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939			R			
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236		F				
Crosson, Lorne & Glen	Welwyn	306-645-3337			R			
Dangstorp, Brian & Perry	Redvers	306-452-3443			R			
Dear, Jonathon	Saskatoon	306-222-0666			R			
Fedoruk, Michael J.	Kamsack	306-542-4235		F	R			
Goossen, Mathew	Sturgis	306-547-7432			R			
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339			R			
Heavin, G. Harvey & G. Ryan	Melfort	306-752-4171			R			
Heavin, Larry N. & L. Warren	Melfort	306-752-4020	S	F	R			
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694			R			
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S	F				
Lung Seeds Ltd.	Lake Lenore	306-368-2414		F		C		
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R			
Mcarthur, Brennan	Watrous	306-230-9853			R			
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991		F				
Nakonechny Donald , Coral & Lance	Ruthilda	306-932-4409	S	F				
Novak, Orrin	Kuroki	306-338-2021			R			
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912	S		R			

Olynick, Marlon	Quill Lake	306-383-2920				R		
Rempel, Blair Allan	Nipawin	306-862-3573				R		
Rempel, Nicole	Nipawin	306-812-7209				R		
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638	S	F				
Seed Source Inc.	Archerwill	306-323-4402	S	F				
Smysniuk, Delon	Ituna	306-795-7691				R		
Sopatyk, Jeffery & Patti	Saskatoon	306-227-7867	S	F				
South, Winston & Richard & Bradley	Melfort	306-752-9840	S			R		
Tebbutt, Gregg & Blake D.	Nipawin	306-862-9730				R		
Tomtene, Steven & Brad	Birch Hills	306-749-3447				R		
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377	S	F				
Wilfing, Ryan John	Meadow Lake	306-236-6811	S			R	C	
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423		F				
Wylie, Leslie Dale	Biggar	306-948-2807		F				
Yauck, Kevin Rodney	Govan	306-484-4555	S	F				
AAC STRONGHOLD								
Anderson, Skyler	Hazlet	306-741-6827				R	C	
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F	R			
Condie Seed	Regina	306-569-7333					C	
Dear, Jonathon	Saskatoon	306-222-0666					C	
Fowler, Edith	Central Butte	306-796-4652					C	
Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F	R		C	
Hyndman, Glen	Balcarres	306-331-8168					C	
Moen, Jim	Cabri	306-587-7452				R		
Noble, Garry	Mossbank	306-354-2679					C	
Reisner, Cecil & Barry	Limerick	306-642-8666					C	
Sand, Evan	Limerick	306-263-4944					C	
Smith, Kyle	Limerick	306-263-4944				R	C	
AAC SUCCEED - CDC ALLOY								
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236	S	F	R			
Earth First Plastics Inc	Moosomin	306-434-5534					C	
Fraser, Scott & Shawn	Pambrun	306-741-0475					C	
Garratt, Lyle C. & K.c.	Milestone	306-436-2178			R			
Gellner, Clayton S.	Southey	306-726-4323			R			
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R			
Riviere, Paul	Radville	306-869-7629				C		
Sand, Evan	Limerick	306-263-4944				C		
Smith, Kyle	Limerick	306-263-4944				C		
Smith, Ron T.w. & Barb A.	Limerick	306-263-4944				C		
Smith, Wayne D.	Limerick	306-263-4944				C		
AAC TISDALE								
Edmunds, Greg & Glen	Tisdale	306-873-4780				C		
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339				C		
Marcotte, Raymond W.	Kinistino	306-864-2948				C		
Reisner, Cecil & Barry	Limerick	306-642-8666				C		
Willner, Brady E.	Davidson	306-567-4613		F	R	C		
AAC VIEWFIELD								
Beuker, Allan Daniel	Melfort	306-752-4810				C		2
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939			R	C		
Condie Seed	Regina	306-569-7333				C		
Dear, Jonathon	Saskatoon	306-222-0666			R			
Fedoruk, Michael J.	Kamsack	306-542-4235				C		
Fraser, Scott & Shawn	Pambrun	306-741-0475				C		
Heggie, Kyle Robert	Leross	306-795-7208		F		C		
Heggie, Robert Thomas	Leross	306-795-7493				C		
Herle, Gregory & Andrew E.	Wilkie	306-843-2934				C		
Hyndman, Glen	Balcarres	306-331-8168				C		
Lindgren, Jordan & Jennifer	Norquay	306-594-7644				C		
Littman, Allan Blake & L. Robert & Adam	Saltcoats	306-744-2554				C		
Luscombe, Darren	Sintaluta	306-727-2222				C		
Mc Carthy, Brent	Corning	306-224-4848				C		
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R	C		
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				C		
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800				C		

Shwaga, Jeff W.	Wroxton	306-742-4590				C		
Toman, Rick & Randy	Guernsey	306-365-8386				C		
Trawin Seeds	Melfort	306-752-4060				C		
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714			R			
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984				C		
Wiens, Brennan R.	Herschel	306-377-2002			R			
Wiid, Petrus	Watson	306-287-3977				C		
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423			R	C		
Wylie, Leslie Dale	Biggar	306-948-2807			R			
AAC WARMAN - AAC TISDALE								
Boldt, Garry	Osler	306-239-2071			R			
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377	S	F	R			
AAC WHEATLAND - AAC BRANDON								
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415		F	R			
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939	S	F	R			
Condie Seed	Regina	306-569-7333			R			
Crosson, Lee, Max & Will	Welwyn	306-434-7436			R			
Crosson, Lorne & Glen	Welwyn	306-645-3337			R			
Dangstorp, Brian & Perry	Redvers	306-452-3443			R			
Denis, Michel P. & Marc	St. Denis	306-258-2219		F				
Dutton, David H.& George	Paynton	306-441-6799			R			
Fedoruk, Michael J.	Kamsack	306-542-4235			R			
Fowler, Edith	Central Butte	306-796-4652			R			
Goossen, Mathew	Sturgis	306-547-7432			R	C		
Herle, Gregory & Andrew E.	Wilkie	306-843-2934			R			
Josuttes, Brock	Paradise Hill	306-248-7077			R			
Kondratowicz, Frank	Unity	306-228-3684			R			
Lung Seeds Ltd.	Lake Lenore	306-368-2414		F	R			
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991			R			
Moroz, Troy	Pelly	306-595-4622			R			
Nakonechny Donald , Coral & Lance	Ruthilda	306-932-4409			R			
Novak, Orrin	Kuroki	306-338-2021			R			
Olynick, Marlon	Quill Lake	306-383-2920				C		
Osiowy, Bruce M.	Abernethy	306-335-2777			R			
Ostafie, Robert	Canora	306-563-6244		F				
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638		F	R			
Shewchuk, Lorne & Terry & Michael	Blaine Lake	306-497-2800		F	R			
Shirriff, Keith & Harle, Doug	Regina	306-533-0046			R			
Toman, Rick & Randy	Guernsey	306-365-8386			R			
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714		F				
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984			R			
Wilfing, Ryan John	Meadow Lake	306-236-6811			R			
AAC WHITEFOX								
McDougall, Ken & Craig	Moose Jaw	306-693-3649			R			
AAC WILDFIRE								
Fraser, Scott & Shawn	Pambrun	306-741-0475				C		
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402			R	C		
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423			R			
AC ANDREW								
Blumer, Brad & Doug	Dinsmore	306-460-7744				C		
Dutton, David H.& George	Paynton	306-441-6799				C		
Frederick Seeds	Watson	306-287-3977				C		
Herle, Gregory & Andrew E.	Wilkie	306-843-2934			R	C		
Nakonechny Donald, Coral & Lance	Ruthilda	306-932-4409	S	F				
Sayers, Charlie Joseph	Delmas	306-445-6522			R			
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984			R			
Wilfing, Ryan John	Meadow Lake	306-236-6811			R	C		
AC NAVIGATOR								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052				C		
AC SPLENDOR								
Beuker, Allan Daniel	Melfort	306-752-4810				C		w

ACCELERATE								
Crosson, Lee, Max & Will	Welwyn	306-434-7436		F	R	C		
Dutton, David H.& George	Paynton	306-441-6799				C		
Gerry , Greg	Creelman	306-457-2220				C		
Tomtene, Steven & Brad	Birch Hills	306-749-3447				C		
BOLLES								
Barlow, Bradley L. & Matthew	Griffin	306-861-6110				C		
Crosson, Lee, Max & Will	Welwyn	306-434-7436				C		
CARBERRY								
Ostapovitch, Fred G. & Glen	Theodore	306-647-2205				C		
Schmeling, Donald H.	Riceton	306-530-1052			R	C		
CARDALE								
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438				C		
Klemmer, Richard	Nipawin	306-862-3874				C		
CDC ABOUND								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052			R	C		
CDC ALLOY								
Condie Seed	Regina	306-569-7333		F	R			
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236			R	C		
Dowdeswell, Donald D.	Pennant	306-750-1114				C		
Fritzler, Baine A. & Adam A.	Govan	306-484-2010				C		
Girodat, Gerald	Shaunavon	306-297-2563				C		
Herle, Gregory & Andrew E.	Wilkie	306-843-2934				C		
McDougall, Ken & Craig	Moose Jaw	306-693-3649				C		
Palmier, Maurice, Jason & Anita	Lafleche	306-472-7824				C		
Printz, Gerald & Kurt	Gravelbourg	306-648-3511				C		
Reisner, Cecil & Barry	Limerick	306-642-8666				C		
Riviere, Paul	Radville	306-869-7629			R	C		
Wiens, Brennan R.	Herschel	306-377-2002			R	C		2
CDC CREDENCE								
Condie Seed	Regina	306-569-7333		F	R			
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294			R			
Petruic, Nick	Avonlea	306-550-8555			R			
Simpson, Trevor W.	Moose Jaw	306-693-9402	S	F		C		
Wiens, Brennan R.	Herschel	306-377-2002			R			2
CDC DEFY								
Ackerman, Patrick	Chamberlain	306-638-3177	S	F				
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S	F				
Blumer, Brad & Doug	Dinsmore	306-460-7744		F				
Catherwood, James	Ceylon	306-869-5423			R			
Condie Seed	Regina	306-569-7333		F				
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236	S	F				
Fraser, Scott & Shawn	Pambrun	306-741-0475	S	F				
Friesen, Greg & Brea; Leavins, Brent & Betty Mae & Robert & Courtney	Elrose	306-378-7785	S		R			
Fritzler, Baine A. & Adam A.	Govan	306-484-2010	S	F				
McDougall, Ken & Craig	Moose Jaw	306-693-3649	S	F	R			
Petruic, Joe, Cameron L., Judy & Nick	Avonlea	306-868-2294	S	F				
Printz, Gerald & Kurt	Gravelbourg	306-648-3511	S	F				
Reisner, Cecil & Barry	Limerick	306-642-8666	S	F				
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S					
Willner, Lorne E.	Davidson	306-567-4613	S					
CDC DYNAMIC								
Crone, Megan, Kehlsie, Braeden, Vaughn & Tammie	Moose Jaw	306-691-5284				C		
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052				C		
CDC HUGHES - CARDALE								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052			R	C		
Nutrien Ag Solutions (Hybrid Canola) (Sk Acct)	Lethbridge	403-336-4826				C		

WHEAT

CDC LANDMARK - AAC VIEWFIELD							
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602			R		
Beuker, Allan Daniel	Melfort	306-752-4810			R		2
Buziak, Ronald Charles	Mayfair	306-445-6556				C	
Cay, Randy D., Susan, Layne & Justin	Kinistino	306-864-3696				C	
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939		F	R		
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236				C	
Fenton, Gerald A. & Robin Paul	Tisdale	306-873-5438			R		
Fraser, Edward H. & Glen & Dale	Yarbo	306-745-3830				C	
Fritzler, Baine A. & Adam A.	Govan	306-484-2010				C	
Heggie, Kyle Robert	Leross	306-795-7208				C	
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694			R		
Kerber, Greg	Rosthern	306-232-4474				C	
Laxdal, Glen M. & Blyth, Danny, Richard, Quinn	Wynyard	306-554-2078	S	F	R		
Littman, Allan Blake & L.robert & Adam	Saltcoats	306-744-2554			R		
Mc Carthy, Brent	Corning	306-224-4848			R		
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				C	
Ostafie, Robert	Canora	306-563-6244				C	
Shwaga, Jeff W.	Wroxton	306-742-4590			R		
Smith, Wayne D.	Limerick	306-263-4944				C	
Wakefield, Kristopher & Laurie G. & Monica	Maidstone	306-893-2984		F	R		
Wiid, Petrus	Watson	306-287-3977				C	
Wilfing, Ryan John	Meadow Lake	306-236-6811				C	
Woods, Dale Arthur & Daryn	Rocanville	306-645-4423				C	
Wylie, Leslie Dale	Biggar	306-948-2807				C	
CDC ORTONA							
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052	S	F	R	C	
CDC PRECISION							
Altwasser, Rodney & Allen R.& Dean	Yellow Grass	306-465-2727			R		
Blumer, Brad & Doug	Dinsmore	306-460-7744				C	
Ellert, David & Christopher	Rockglen	306-476-7623				C	
Gizen, Jason	Prelate	306-628-8127				C	
Heenan, Thomas Dale & Deb	Regina	306-522-9375			R		
Lueke, Dennis	Humboldt	306-682-5170				C	
Printz, Gerald & Kurt	Gravelbourg	306-648-3511				C	
Rennick, Joe R. & William J.	Milestone	306-436-4353		F	R		
Riviere, Paul	Radville	306-869-7629		F	R	C	
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433				C	
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S	F	R	C	
Willner, Brady E.	Davidson	306-567-4613				C	
Yauck, Kevin Rodney	Govan	306-484-4555				C	
CDC REIGN							
Wilfing, Ryan John	Meadow Lake	306-236-6811	S			C	
CDC SILEX							
Tomtene, Steven & Brad	Birch Hills	306-749-3447		F			
CDC SKRUSH							
Ardell, Terrence, Michael, Joanne, Theresa & Ives, Joshua	Vanscoy	306-668-4415	S		R		
Berscheid, K.N. & B. & E.K. & S. & C. & Kyle & Brent	Lake Lenore	306-368-2602	S		R		
Crosson, Lee, Max & Will	Welwyn	306-434-7436		F		C	
Crosson, Lorne & Glen	Welwyn	306-645-3337			R		
Danielson, Lionel & Bonnie	Norquay	306-594-7417			R		
Dear, Jonathon	Saskatoon	306-222-0666			R		
Edwards, Lawrence R. & Donna & Jeff & Mike & Mason	Nokomis	306-528-2140	S		R		
Friesen, Greg & Brea; Leavins, Brent & Betty Mae & Robert & Courtney	Elrose	306-378-7785			R		
Fritzler, Baine A. & Adam A.	Govan	306-484-2010	S		R		
Greenshields, Grant & Thomas & Callie	Semans	306-524-4339			R		

Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516			R			
Heavin, G. Harvey & G. Ryan	Melfort	306-752-4171	S					
Heavin, Larry N. & L. Warren	Melfort	306-752-4020			R			
Heavin, Milton Russell	Melfort	306-752-4071	S					
Medernach, Louis J., Kim L. & Kyle	Cudworth	306-256-3991			R			
Pratchler, Leander	Muenster	306-682-3317			R			
Rugg, Robert B., John Barry & Brian R.	Elstow	306-257-3638	S		R			
Trawin, Alan Ross	Melfort	306-752-4060	S					
Veikle, Lynne, Marshall & Jason	Cut Knife	306-398-2923			R			
Warkentin, Michael, Toews Bruce & Shawn	Porcupine Plain	306-814-7705				C		
Willner, Lorne E.	Davidson	306-567-4613	S					
CDC STANLEY								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052				C		
CDC TITANIUM - STETTLER								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052		F		C		
CDC UTMOST - HARVEST								
Kerber, Greg	Rosthern	306-232-4474				C		
Palmier, Maurice, Jason & Anita	Lafleche	306-472-7824			R	C		
Veikle, Carl E. & Brennan	Cut Knife	306-398-4714				C		
DAYBREAK								
Mayerle, Kris	Tisdale	306-873-4261			R			
DT897 - CDC PRECISION								
Barlow, Bradley L. & Matthew	Griffin	306-861-6110	S					
Printz, Gerald & Kurt	Gravelbourg	306-648-3511	S					
Thiessen Trevor & Latrace, Jackson & Jim	Lumsden	306-530-8433	S					
Watson, Wayne Donald & Calvin & Mark	Avonlea	306-868-4402	S					
ELGIN ND								
Fenton, Robin Paul	Tisdale	306-873-3234				C		2
ELLERSLIE								
Ostafie, Robert	Canora	306-563-6244		F				
GOODEVE - AC INTREPID								
Illingworth, Todd Douglas & Caden	North Battleford	306-445-5263				C		
JAKE								
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058			R			
PARATA								
Booy, Jerry N. & Murray T. & Darcy K.	Glaslyn	306-342-2058			R	C		
PASTEUR								
Hanley, Erwin & Priscilla	Regina	306-586-4509			R			
Hetland, Bill & Bohachewski, Joe	Naicam	306-874-5694			R			
Toman, Rick & Randy	Guernsey	306-365-8386				C		
REDNET								
Hicks, Dale & Barry	Mossbank	306-229-9517			R			
SADASH - AC ANDREW								
Blyth, Darran	Waseca	780-205-2677				C		
Charabin, Dale Kenneth & Ryan & Neil & Eric & Lesmeister, Rhett	North Battleford	306-445-2939			R			
Fritzler, Baine A. & Adam A.	Govan	306-484-2010		F		C		
Wilfing, Ryan John	Meadow Lake	306-236-6811	S		R	C		
SHAW - AC DOMAIN								
Fritzler, Baine A. & Adam A.	Govan	306-484-2010				C		
Huber, Daniel & Rebecca	Landis	306-658-4200				C		
SNOWBIRD								
Tomtene, Steven & Brad	Birch Hills	306-749-3447	S	F				
SPARROW - ALDERON								
Hanley, Erwin & Priscilla	Regina	306-586-4509			R	C		
Simpson, Jamie P.	Moose Jaw	306-693-9402				C		
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377				C		
SY CAST								
Nutrien Ag Solutions (Canada) (Cereals & Soybeans)	High River	403-603-6052	S	F	R			
SY ROWYN								
Rude, Stanley & Assie, Craig	Naicam	306-874-2359		F	R	C		

SY TORACH								
Crosson, Lee, Max & Will	Welwyn	306-434-7436				C		
Gregoire, Denis & Rory & Brandon	North Battleford	306-445-5516				C		
Olson, Lyndon, Lynnell, Alica & Bryon	Archerwill	306-323-4912				C		
Rude, Stanley & Assie, Craig	Naicam	306-874-2359				C		
TRACKER								
Fedoruk, Rod M.& Cathy	Kamsack	306-542-4235				C		
TRANSCEND								
Craswell, Raymond W., Kevin A. & David M.	Strasbourg	306-725-3236			R			
Girodat, Gerald	Shaunavon	306-297-2563				C		
Palmier, Maurice, Jason & Anita	Lafleche	306-472-7824				C		
Reisner, Cecil & Barry	Limerick	306-642-8666				C		
Sand, Evan	Limerick	306-263-4944				C		
WPB WHISTLER								
Van Burck, Hans, Marianne & Mira	Star City	306-863-4377	S	F				
Willner, Brady E.	Davidson	306-567-4613		F				

AC GOLIATH								
BrettYoung Seeds Ltd. (MB Acct)	St. Norbert	204-261-7932				C		
Quiring, Lyle	Carrot River	306-768-2984				C		
AC SALTLANDER								
Fraser, Scott & Shawn	Pambrun	306-741-0475				C		
FAIRWAY								
Quiring, Lyle	Carrot River	306-768-2984				C		
GREENLEAF								
Nutrien Ag Solutions (Canada) (Forages)	Carrot River	306-768-3335		F				
KIRK								
Nutrien Ag Solutions (Canada) (Forages)	Carrot River	306-768-3335				C		
Rempel, Blair Allan	Nipawin	306-862-3573				C		
REVENUE								
Lussier, Patrick D.	Arborfield	306-862-1363				C		

You can get a lot done when you're

the first one up

Get an early season advantage with broad-spectrum disease control and quick crop establishment

Some dream of cereal success, others get an early start and make it happen! Vibrance® Quattro fungicide seed treatment gives you consistently excellent protection from key early season diseases like Fusarium and Rhizoctonia. Plus, with Rooting Power®, your cereals get established and standing strong—faster.

Vibrance® Quattro

syngenta®

For more information, visit Syngenta.ca/VQ, contact our Customer Interaction Centre at 1-87-SYNGENTA (1-877-964-3682) or follow @SyngentaCanada on Twitter.

Saskatchewan

Varieties of Grain Crops 2021

Table of Contents

Symbols and Abbreviations Used:

§ Variety may not be described in 2022
--- Insufficient test data to describe
n/a = Not applicable
✪ Applied for PBR protection at time of printing (UPOV'91)
Plant Breeders' Rights (UPOV'78) at time of printing
Plant Breeders' Rights (UPOV'91) at time of printing
VUA Variety Use Agreement in effect

Relative maturity: VE = Very Early, E = Early, M = Medium, L = Late, VL = Very Late

Agronomic Rating: VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor

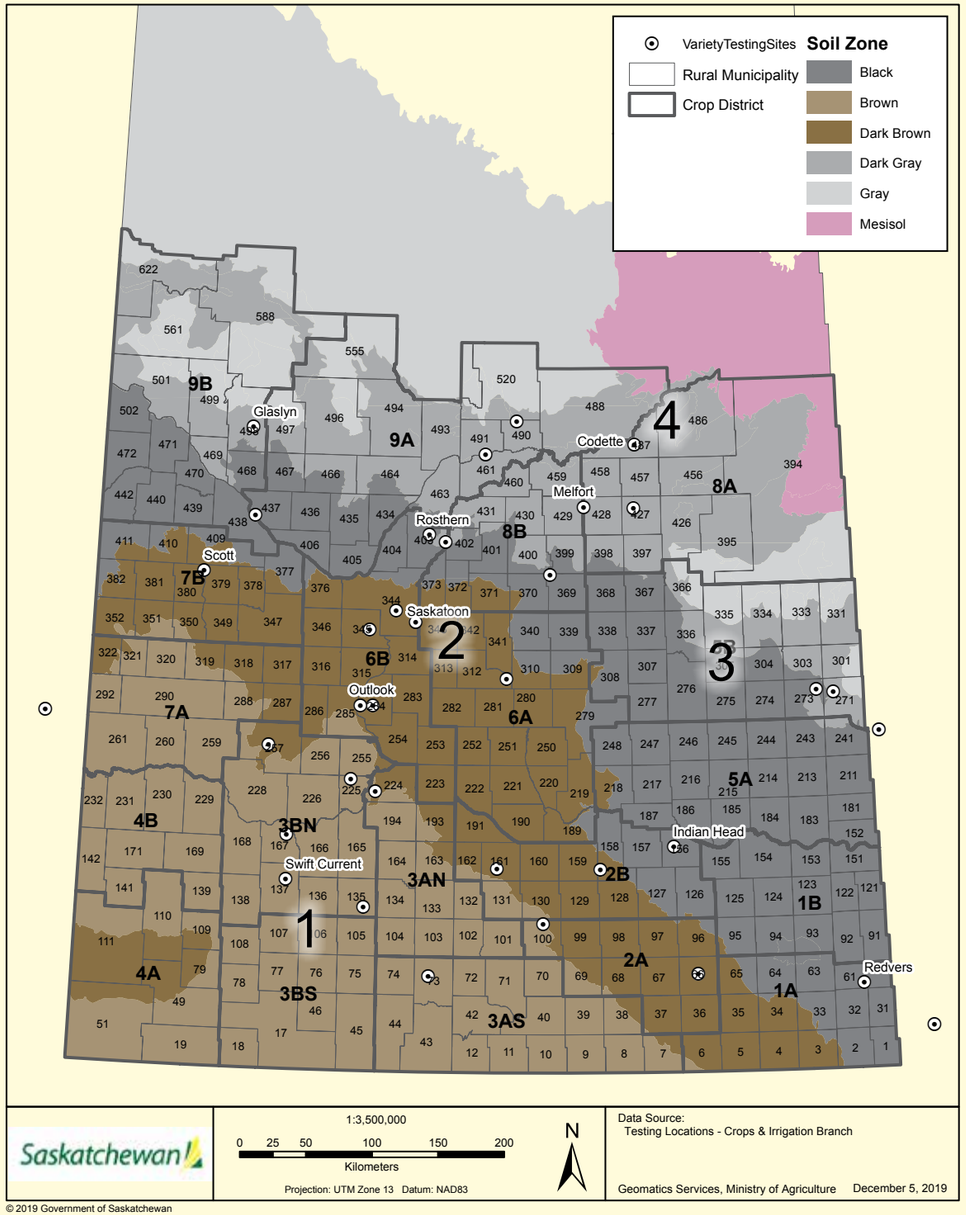
Disease Resistance: R = Resistant, MR = Moderately Resistant, I = Intermediate Resistance, MS = Moderately Susceptible, S = Susceptible

Accessing Public Release Varieties

Breeder seed of public release varieties is available to anyone (including producers and seed growers) for multiplication, increase and marketing. There are no royalties or seed marketing agency fees attached to use or sale of seed produced from breeder seed of public release varieties. While subsequent seed production may be Pedigreed, this is the buyer's choice and the buyer may increase the seed of public release varieties in any way he/she wishes (only pedigreed seed can be sold by variety name, for most major crop kinds). To purchase breeder seed of public release varieties, contact the breeding institution listed in the Breeding Institution and Seed Distributors listings on pages 38 to 40.

Legal Disclaimer

Regional Variety Testing Locations



The cropland of Saskatchewan has been divided into four areas based roughly on agro-climatic conditions. Crop yields can vary from area to area. In choosing a variety, producers will want to consider the yield data in combination with marketing and agronomic factors.

Area 1: Drought is a definite hazard and high winds are common. Sawfly outbreaks often occur in this area. Cereal rust may be a problem in the southeastern section.

Area 2: Drought and sawfly may be problems in the western and central sections of the area. Cereal rust may be a problem in the southern section.

Area 3: Sawfly can also be a problem. Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northern section.

Area 4: Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest conditions are frequent problems.

Note About Dividing Lines:

The dividing lines do not represent distinct changes over a short distance. The change from one area to another is gradual.

Regional Variety Testing in Saskatchewan relies on support from many organizations, including:

Saskatchewan Pulse Growers

Saskatchewan Winter Cereals Development Commission

SaskOats Saskatchewan Oat Development Commission

SaskWheat Development Commission

SaskBarley Development Commission

SaskFlax

SaskCanola Saskatchewan Canola Development Commission

SaskSeed Saskatchewan Seed Growers' Association

Saskatchewan

The Saskatchewan Advisory Council on Grain Crops (SACGC) and the Saskatchewan Variety Performance Group (SVPG) coordinate, supervise and review the collection, analysis and reporting of information in this booklet. Membership consists of representatives from:

- Ministry of Agriculture
- Seed Companies
- Saskatchewan Seed Growers Association
- Crop Commissions
- Agriculture and Agri-Food Canada
- Crop Development Centre
- University of Saskatchewan
- Saskatchewan Crop Insurance Corporation

SACGC and SVPG gratefully acknowledge the contributions of all individuals and organizations involved in the generation and publication of this information.

Testing Varieties in Saskatchewan

By The Ministry of Agriculture

Regional testing of crop varieties is conducted to provide producers with information on the agronomic performance of varieties under different agro-climatic conditions. Saskatchewan producers will continue to have the opportunity to evaluate the newest grain crop varieties and their suitability for production in different regions of the province. Many funders contribute to variety testing in Saskatchewan.

The Ministry of Agriculture provides $100,000 toward a testing program that is based on industry-government partnership. Technical and in-kind support is also provided by Agriculture and Agri-Food Canada, Saskatchewan Crop Insurance Corporation and *The Western Producer*, publisher of the *2021 SaskSeed Guide*.

The Saskatchewan Variety Performance Group (SVPG) administers the program for spring cereals, fall rye and flax. SVPG is composed of representatives from the seed industry, producers, breeders and government. The SeCan Association administers the funds for SVPG. Crop coordinators manage the data and provide expertise for their respective crops. An entry fee system is used, in which variety owners or companies with the distribution rights to a particular variety pay a portion of the cost of having the variety tested. The Saskatchewan Seed Growers' Association, Saskatchewan Wheat Development Commission, Saskatchewan Barley Development Commission, Saskatchewan Oat Development Commission and SaskFlax collectively provide more than $100,000 to the core program. Supplementary funds enhance the core program.

Grower dollars at work testing varieties of grain crops across Saskatchewan. Variety results are reviewed and approved by SACGC to ensure information published is based on sound scientific principles.

Saskatchewan Pulse Growers (SPG) funds the pulse and soybean regional variety trials for Saskatchewan growers. SPG funds the pulse and soybean variety trials for Saskatchewan growers. For 2020 trials, SPG provided approximately $200,000 for pulse regional variety trials and $103,000 for soybean regional variety trials. Canadian marketing agents that distribute soybean varieties in Saskatchewan pay an entry fee that covers a portion of the cost of having their varieties tested. SPG collaborates with researchers at several locations to conduct the trials, including the Crop Development Centre at the University of Saskatchewan, Agriculture and Agri-Food Canada research stations, provincial AgriARM sites and the Canada-Saskatchewan Irrigation Diversification Centre.

Canola Performance Trials represent the next generation in variety evaluation for Western Canadian canola growers. The three Prairie canola grower groups – Alberta Canola Producers Commission, Saskatchewan Canola Development Commission (SaskCanola) and the Manitoba Canola Growers Association – fund the program. The Canola Council of Canada delivers the program on their behalf.

The results from all variety trials of all crop kinds tested are reviewed by the Saskatchewan Advisory Council on Grain Crops (SACGC), which also updates disease and other agronomic information and approves the data prior to inclusion in this publication.

Relative yield of varieties

Trials are conducted using uniform protocols and standard check varieties. Data is collected from as many sites as are available and statistically analyzed. Results in this publication are aggregated over a number of years and on an area basis for most crops.

Grain yield is a function of genetic and non-genetic factors. Variety trials are designed to measure yield differences due to genetic causes. It is important to minimize variability due to non-genetic factors such as moisture, temperature, transpiration, weeds, diseases and other pests. Experimental design uses replication (repeated plantings of the varieties) and randomization (the position of the varieties within the test is assigned by chance) to estimate the precision with which the genetic factors can be measured.

Relative yield is the yield of one variety expressed as a percentage of the check variety. Yields obtained in these trials are not identical to those obtained in commercial production. However, the relative ranking of these varieties compared to the check variety, obtained over a number of years at several locations, would remain the same regardless of whether the grain yield was measured in small plots or large-scale fields. Relative yield is the best estimate of expected yield advantage in the areas indicated.

Considerations For New Variety Selection

There are various factors to consider when selecting a new variety and it all depends on what your main priority is. Some factors to consider include:

- Market – Identify your target market and make sure the variety selected matches the specifications and quality expected by your buyers, such as seed size, colour, functionality and other attributes.
- Maturity – Identify realistic expectations on maturity needed to achieve optimum yield and quality in your region.
- Disease resistance – Select varieties with better resistance for high-risk areas or fields. Resistance helps with disease management, but may or may not reduce the reliance on fungicide application.
- Herbicide tolerance – Consider the weeds or volunteers that may be present in the field to determine if herbicide-tolerant options are a good choice.
- Seed size – If seed size does not affect the market choice, then consider the seeding costs of the variety. Smaller-seeded varieties are usually cheaper to seed and have fewer production issues with plugging seeding equipment and other operations. Faba beans are a good example where seed size may be an important consideration.
- Crop growth habit and other physiological factors – Factors such as growth habit (determinate or indeterminate), plant height, standability, harvest management and quality parameters such as resistance to sprouting, seed coat breakage and bleaching.
- Yield – This is often the highest priority, as it directly relates to the ultimate goal of net return. In some cases, the advantages and higher performance of new varieties may not necessarily translate into higher yield, due to environment or management practices. If all other factors have been considered, then use yield potential as the deciding factor.

What Are Plant Breeders' Rights?

By The Ministry of Agriculture

The goal of Plant Breeders' Rights (PBR) legislation is to encourage investment and development in the crops sector. There are many ways to accomplish this, but UPOV-based PBR balances the interests of the farmer and the breeder. This gives the farmer fair access to the use of purchased seed, and the breeder can expect a royalty from every new farmer buying seed of the breeder's variety.

The royalty and protections under PBR assure that companies and institutions that invest in plant breeding are able to keep reasonable control of their varieties and secure fair compensation for their efforts. Some of the benefits of PBR include:

- Access to new and improved plant varieties, improving the bottom line for producers. Enhanced protection under the revised PBR will encourage the release of new varieties from other countries (once registered in Canada), as well as stimulate increased investments in variety development here in Canada.
- Farmers are allowed to save seed for their own use, on their own farms, if the original seed was obtained legitimately.
- No negative impacts for those who legitimately purchase seed.

When a plant breeder develops a new variety for use in Canada, they may apply under the *Plant Breeders' Rights Act* to obtain certain controls over the multiplication and sale of the seed of that variety. Sale, trade or any other transfer of the seed for propagation purposes is prohibited by law without the written permission of the breeder or their agent.

UPOV is the International Union for the Protection of New Varieties of Plants. To be a member, a country must have legislation that aligns with a ratified UPOV convention. There are 76 UPOV member countries, 59 of which have ratified UPOV'91-compliant legislation.

Varieties protected by PBR are identified with one of two logos. Varieties protected prior to Feb. 27, 2015, are identified by:

PBR
Progress through Research

and those protected after Feb. 27, 2015, are identified by:

91
Progress Through Research
Le progrès grâce à la recherche

Varieties previously protected by PBR remain under the same rules as before. Varieties protected since Feb. 27, 2015, are protected under the new PBR Act.

The new PBR Act extends the right of the breeder, giving them further opportunity to protect their variety and ensuring that those who benefit from the technology are paying for it.

It has always been illegal to sell PBR-protected seed without consent of the breeder. Now, it will also be illegal to purchase seed, meaning both the seller and purchaser can be liable if the seed sale is not approved. To be sure, the best way to know if the seed being purchased is an approved sale is to purchase certified seed. Producers should look for the blue certified seed tag and keep it in their records as long as they grow grain derived from that original seed purchase.

The first 10 years of Canada's PBR Act brought improved access to varieties, new investment in varieties, and new and improved genetics for farmers. With the new PBR, producers will benefit from greater access to new varieties for the crops they grow, and breeders will be able to better protect the investment made in the development of new varieties so they can continue to develop new varieties.

For more information, visit *www.pbrfacts.ca* or contact the PBR Office at 613-773-7188.

Plant Breeders' Rights status can change throughout the year. Significant efforts are taken to ensure the correct logo is applied at the time of printing this guide. The PBR Office maintains an online database (*www.inspection.gc.ca)* that can be accessed to verify accuracy and/or changes to PBR status.

VUA Pilot Program

The Canadian Plant Technology Agency (CPTA) launched a pilot program in the February 2020 to test how the Variety Use Agreement (VUA) will work in the real world. At the same time, the Canadian Seed Trade Association (CSTA) formed a working group with producer and industry representation, to provide transparency on the pilot program and create opportunities for collaboration. These combined efforts are the best approach to get the information required on how the VUA will work, give customers more confidence and provide an opportunity to address any concerns.

VARIETY USE AGREEMENT
VUA™

CPTA has been hard at work ensuring that the pilot program's varieties are available to producers. Contracts have been signed and pilot varieties were seeded in the 2020 growing season. If you are interested in learning more about the varieties offered in the pilot program, please contact the distributor directly.

CPTA's working group consists of representatives from the seed industry and various producer organizations. They are meeting on a monthly basis.

The key principles of value creation (transparency, choice and value) remain at the core of these efforts. For more information visit: www.seedvaluecreation.ca/en/pilot-program/.

Seed Quality and Seeding Rates Are Crucial to a Good Plant Stand

By The Ministry of Agriculture

Seed quality and seeding rates are important for establishing good plant stands and—unlike the weather, are two factors we can control. Plant population sets the stage for the yield potential of a crop. Research has shown that each crop has an optimum plant density range that producers should target when seeding their crop. Rates may be adjusted depending on the conditions in the field, date of seeding, weed pressure, seed-placed fertilizer and other pressures that may affect emergence or plant stand.

Determining the quality of the seed starts with a seed test prior to buying seed or seeding the crop. Sending a seed sample to a qualified lab can provide information on germination, vigour, diseases present, purity and thousand kernel weight (TKW). All of these factors help inform growers of whether the seed is suitable for planting and influence seeding rates for that seed lot. Germination tells us how many seeds are expected to germinate and vigour gives an indication of how well the seedlings will thrive under stressful conditions. TKW provides the seed size, which is vital when calculating seeding rates to target optimum plant populations. Average TKW for varieties are listed in the *Varieties of Grain Crops,* but individual seed lots can vary tremendously. Having the actual TKW for the seed lot being grown is important for the accuracy of seeding rates.

There are upcoming changes in the canola seed industry that might require you to pay closer attention to seeding rates, or to change how you approach seeding. At least one company has begun selling seed based on categories of seed size, represented by thousand seed weight (TSW).

Crop	Target Plant Population (per m^2)	Target Plant Population (per ft^2)	TKW (grams)
Wheat – hard red spring	250	24	31 – 38
Wheat – CPS	250	24	39 – 50
Durum	210 – 250	20 – 24	41 – 45
Wheat – SWS	210 – 250	20 – 24	34 – 36
Barley – 2 row	210 – 250	20 – 24	40 – 50
Barley – 6 row	210 – 250	20 – 24	30 – 45
Oat	350	35	30 – 45
Triticale – spring	310	29	42 – 48
Brown and Oriental Mustard	70 – 120	7 – 11	2 – 3
Yellow Mustard	70 – 120	7 – 11	5 – 6.5
Canola	60 – 100	6 – 9	2.5 – 7.5
Flax	300 – 400	30 – 40	5 – 6.5
Pea	85	8	125 – 300
Fababean	45	4	350 – 425
Lentil	130	12	30 – 80
Chickpea	44	4	220 – 450
Soybean[1]	44 – 57	4 – 5	n/a
Canary seed[2]	n/a	n/a	6 – 7
Camelina	210	20	1.3
Hemp (green)	100 – 125	10 – 12	12 – 18
Hemp (fibre)	300 – 375	30 – 35	12 – 18
Quinoa[2]	n/a	n/a	2.8

[1] Soybeans are seeded based on seeds per acre and it is recommended to target 200,000 seeds per acre with air drills and 180,000 seeds per acre with planters. The soybean emergence rates are higher with planters than airdrills due to airflow causing some damage to sensitive seeds.
[2] Target plant stands are not well established for Canary seed and quinoa. Canary seed target 35 to 45 kg/ha (500 to 750 seeds/m^2). Quinoa target 10 kg/ha (10 lbs/ac).

The majority of canola seed today falls into a TSW range of 4.0 to 5.9g. The TSW is currently listed on a bag, but each bag is equal weight and price; thus, the number of seeds between bags with different TSWs might be inconsistent. With upcoming changes, bag weights will differ between each TSW category, but the number of seeds per bag will be much more consistent across TSWs listed on the bags; germination and vigour will not differ. Pricing should remain consistent, as well, regardless of bag weight. The important consideration to note is that seeding rate must be adjusted accordingly to achieve consistent establishment (and plant stand density) across any of the TSWs.

Calculating Seeding Rates

Thousand Kernel Weight (TKW), germination rate and target plant populations are needed when calculating the seeding rate. Crops and varieties can vary significantly in seed size, especially pulses and not knowing your TKW could mean seeding too heavily and spending more on seed than needed, or seeding too lightly and limiting yield potential. Emergence rate is more difficult to estimate, as it is dependent on germination and environmental conditions.

Expected seedling survival is typically five to 20 per cent less than the germination rate with pulses and cereals — more under ideal conditions and less under adverse conditions. For canola, expected survival rates range from 40 to 60 per cent. Factors to take into account when determining the expected seedling survival are seeding date, soil temperature, moisture and texture, as well as seed quality and possible soil-borne diseases and insect pressures. The amount of seed-placed fertilizer and the seeding depth are factors that can also affect seedling survival. The formula below should be used to determine the target seeding rate:

$$\textbf{Seeding Rate kilograms per hectare (kg/ha)} = \frac{\textbf{(target population per square metre x TKW* in grams)}}{\textbf{\% field emergence or survival (in whole number, i.e. 85)}}$$

To convert to pounds per acre, multiply the seeding rate (in kg/ha) by 0.89 *TKW = Thousand Kernel Weight

For example: With **CDC Amarillo** yellow peas, the target plant population is 85 plants/m^2. A seed lot with TKW of 235 grams and germination at 98 per cent under good emergence conditions (using 88 per cent emergence, which is 10 per cent less than the germination rate) would have a target seeding rate of: 85 x 235 / 88 = 227 kg/ha, or 202 lbs./ac or 3.4 bu/ac.

Interpreting Seed Test Results

By Jason Danielson, Discovery Seed Labs

Seed testing can give an indication of how fit your seed is for planting. Tests should be done for germination, vigour and disease. This package of tests can help you better understand how suitable seed will be for spring.

The germination test will give you an indication of the percentage of seeds that will grow in an ideal growth environment. The vigour test indicates the percentage of seed that will grow in adverse conditions. Even though the vigour assay is not standardized between seed labs, the results should be indicative of the seed's fitness when grown in harsher conditions. Combining the information from the germination and vigour tests will give you a good snapshot of the fitness of your seed.

Ideally, the germination rate from your sample should be higher than 85 per cent. The vigour should be close to the germination value; but if there is variation, it should be no greater than 10 percentage points. A large difference could be an indication of issues in the seed, especially if storage conditions over the winter months are not ideal.

Challenging harvest conditions can decrease the viability of the crop for seed. A germination test in the fall may not be representative of the germination in the spring, after several months of storage. A fall germination test can be helpful in determining seed needs for the upcoming year. A germination test closer to spring is recommended to ensure the seed remains sound for spring planting.

Grain dryers can be used on crops intended for seed, but the grain dryer must be kept at temperatures safe for the seed. High temperatures in grain dryers can reduce germination. For more information on grain drying and storage, visit www.*saskatchewan.ca* and search "drying grain."

If forced to use seed with a lower germination rate, you will have to increase the seeding rate to reach your target plants per square foot. Keep in mind that you cannot just increase the seeding amount by the percentage you are off from 100 per cent as not all of the seeds you are adding to the increased seeding rate will germinate. A seeding rate calculator can be a helpful tool to determine the correct seeding rate.

Significant time between when your test was completed and when seeding will occur can result in your germination and vigour values dropping. You can retest your seed in the spring to determine if germination has changed from the initial test in the fall.

When performing your own germination tests, it can be challenging to determine if a seed has germinated and is healthy, versus a seed that develops weak roots that won't grow into a plant. Other issues such as fresh and hard seeds, in addition to seed dormancy, can lead to inaccurate results. A certified seed analyst is trained to conduct seed tests.

There are different diseases of interest depending on the crop that you are seeding. For cereals, the main diseases to test for are *Cochliobolus sativus* (root rot), *Ustilago nuda* (smut) and *Fusarium* (root rot)—both *Fusarium graminearum* and total. Although *F. graminearum* is not the most aggressive *Fusarium* species for seedling blight, any areas that have not had fusarium head blight (FHB) caused by *F. graminearum* should avoid introducing it. The *Fusarium* total reported on the seed test includes *F. graminearum*.

For pulses, the diseases of interest are *Ascochyta* (leaf blight), *Anthracnose, Botrytis* (grey mould) and *Sclerotinia* (white mould). The amount of disease pressure during the last growing season will determine what you will likely have available for quality of seed.

A good practice is to always use the best seed you can source. In good years you should look for seed with little to no presence of disease. In challenging years when the disease is higher, it is important to still source the best seed available and be sure to use seed with good germination.

When using seed with high disease and low germination, more seed is needed to achieve the target plants per square foot. Increasing the seeding rate increases the amount of disease inoculum that you are adding to your soil. A seed treatment can be a good investment in a variety of scenarios, including when using seed with higher disease levels.

Soil Germination Test

It is important to communicate if the crop intended for seed has been treated with pre-harvest glyphosate. Otherwise, the seed will be tested in a normal germination test and the glyphosate may adversely affect germination. This adds an additional cost because the sample will have to be retested for germination. If there is a possibility of glyphosate on the seed, a soil germination test should be requested to "tie up" any glyphosate that might be on the outside of the seed so it does not have adverse effects when the seed is germinating.

Some crop desiccants are registered for use on crops intended for seed production. Glyphosate is not a desiccant. Glyphosate is not recommended for any crop that is to be used for seed. Glyphosate at pre-harvest can cause germination and possibly vigour problems if the herbicide was applied before the seed was fully mature. Crops sprayed with pre-harvest glyphosate may germinate, but the seedling could be stunted and deformed. Crops treated prematurely are off-label and have the potential to threaten export markets.

Seed Samples

The quantity of seed tested is minuscule compared to the size of the seed lot that it represents. Improper sampling is the greatest source of error in seed testing. Make certain the sample is representative of the entire seed lot. To collect a representative sample, gather more seed than needed for a given test. Hand sample or use a probe so that all areas of the seed lot are represented. If the seed is in a bin, sample it from the top, centre, sides and bottom. Do not take your seed sample from beside the bin door. It might be more appropriate to collect subsamples as the seed is being transferred from a truck or bin. After collecting the seed, thoroughly mix it.

Regardless of how accurately the technical work is, the results can only show the quality of the sample submitted for analysis. Consequently, every effort must be made to ensure the samples sent to the analyst accurately represent the composition of the lot in question.

Seed-Borne and Seedling Disease Management

By The Ministry of Agriculture

Use of seed from cereal crops infected with *Fusarium* species may result in poor emergence. Such seed should be treated with a registered fungicide before planting. Use of infected seed may introduce *Fusarium* diseases into unaffected areas. Tolerance for *Fusarium* vary with species. Refer to the Ministry of Agriculture publication *Seed-Borne Diseases of Cereal Crops* for more information.

Smuts that attack wheat, barley, oat and rye can be controlled by seed treatment. If seed from a crop in which bunt or smut was observed must be used for seed, seed should be tested and seed treatment should be considered. If the presence of smut is uncertain, varieties rated susceptible (S) should be treated every year, those rated moderately susceptible (MS) every second year and those rated intermediate resistance (I) every third year.

Only systemic fungicides will control true loose smut of barley and wheat and stem smut of rye. Pathogens causing the other types of smut (covered, false loose, oat smut and bunt) are carried on the outside of the seed and can be controlled by non-systemic seed treatments.

The virulent form of blackleg of canola is widespread in Saskatchewan. Seed treatment with a recommended fungicide can reduce the level of disease. Use of canola seed commercially coated with an appropriate seed treatment is a convenient alternative to on-farm seed treatment.

Pulse growers should use seed that has been tested for seed-borne diseases such as ascochyta, anthracnose and botrytis. Tolerances for seed infection vary with the pulse crop, the disease, weather conditions of the region and the availability of a seed treatment. If infection of the crop from sources other than seed is likely, using seed with low infection levels becomes less important. In regions with frequent rainfall and high humidity, tolerances will be lower.

For ascochyta blight of lentil, use of seed with up to five per cent seed infection is acceptable in the Brown and Dark Brown Soil Zones, but zero per cent is desirable in the Black Soil Zone. A seed treatment for ascochyta-infected lentil seed is available and is recommended if seed infection levels approach five per cent. In pea, up to 10 per cent seed infection with ascochyta is acceptable.

In chickpea, zero per cent ascochyta seed infection is recommended because of the high rate of transmission of the disease from the seed to the emerging seedlings and its highly destructive nature. Refer to Saskatchewan Agriculture's publication *Seed-Borne Diseases of Pulse Crops.*

Handle delicate seeds (i.e. pulses) with care, as seed coats are susceptible to damage—run augers full and slow and watch fan speeds on airseeders. Use a seed treatment if seeds have a high level of disease, show signs of mechanical damage, or the forecast is for wet, cool environmental conditions that may delay emergence. Kabuli chickpeas must have seed treatment or reduced emergence will occur.

Root rots can include a complex of pathogens such as *Fusarium spp*., *Rhizoctonia solani*, or *Pythium spp*. and, more recently, *Aphanomyces euteiches*. There is no indication of differences in susceptibility between varieties or crops for most of the root rot pathogens, with the exception of *Aphanomyces*. Currently all pea and lentil varieties are susceptible to *Aphanomyces* root rot. Current faba bean and chickpea varieties have partial resistance and, along with soybean, could be considered other nitrogen-fixing crops that have resistance to *Aphanomyces*.

With soybeans, the best management practices for *Phytophthora* stem rot include selecting varieties with genetic resistance and using a seed treatment that is labeled for control.

Wireworms that attack all grain crops, pea leaf weevil in pea and faba beans and flea beetles that attack canola and mustard can be controlled by seed treatments containing insecticides.

The degree of control with seed treatments depends on five factors:

1. active ingredients
2. rate of application
3. seed- and soil-borne fungal diseases or insects present
4. environmental conditions
5. quality of seed coverage

Check individual product labels for specifics. Adequate coverage is important to ensure each seed is protected and the seeds are completely covered (especially important with contact type seed treatments).

Read the label carefully before using any seed treatment. Information on their use and recommended rates is found in the Ministry of Agriculture publication *Guide to Crop Protection*. Carryover stocks of treated seed should be tested for germination before planting. Treated seed must not be delivered to an elevator or used for feed.

Seed-Borne and Seedling Diseases and Actions to Minimize Impact

Crop	Disease Pathogen	Economic Threshold	Action If Over Threshold
Field Peas Lentils	Root Rot: *Aphanomyces euteiches*	Soil-borne only	Consider seed treatment if disease history is present
Field Peas	*Ascochyta complex*	10% on seed	Use seed treatment
Lentils	*Ascochyta lentis*	5% on seed	Use seed treatment
		10% on seed	Do not use seed
	Stemphylium blight	May be detected on seed tests	Unknown
	Anthracnose	May be detected on seed tests	Not considered high risk of seed to seedling transmission
Chickpeas	*Ascochyta rabiei*	0.3% on seed	Do not use seed
Faba Beans	Anthracnose Seed rot/damping off: *Fusarium, Pythium, Rhizoctonia*	Unknown	Consider seed treatment if disease history
Soybeans	Seed rot/damping off: *Fusarium, Pythium, Rhizoctonia, Phamapsis, Phytophythora*	Unknown	Consider seed treatment if disease history
Field Peas Chickpeas Lentils	Seed rot/seeding blight (pathogens unspecified)	Unknown	Use seed treatment
	Seed rot/damping off: *Botrytis* + *Fusarium*	10% on seed	Use seed treatment
	Seed rot/damping off: *Rhizoctonia, Botrytis, Fusarium, Pythium*	Soil-borne only	Consider seed treatment if disease history and/or will be seeding under cool, moist soil conditions

Source: Guideline for Seed-Borne Diseases of Pulse Crops, Ministry of Agriculture

Plant Disease Resistance

By The Ministry of Agriculture

Resistance to the most important diseases in Western Canada is assessed in most crops as part of the variety registration process. The methods used to assess resistance in each crop are different. In some cases, spores of the pathogen are applied to plants in the greenhouse or in the field. In other cases, assessment is based on naturally occurring infection in the field. Each variety is rated on a five-point scale of Resistant (R), Moderately Resistant (MR), Intermediate Resistance (I), Moderately Susceptible (MS) and Susceptible (S).

Because of variation in disease levels from year to year, each new variety is assigned a rating relative to a few existing varieties that serve as disease level standards or checks. Varieties differ in resistance because of differences in their genetic makeup and/or differences in the genetic makeup of the pathogen that causes the disease. However, the genetic makeup of a pathogen can change over time and can enable the pathogen to overcome the resistance in a variety. In such cases, a variety with good resistance can quickly display poor resistance to a particular disease. Unfortunately, because not all varieties are tested side-by-side every year, the ratings of older varieties may be less reliable.

Preserving the efficacy of disease resistance genes in current crop varieties is the most economical method of plant disease control. Disease resistance can be prolonged with good agronomic and integrated pest management practices. Crop type, variety and fungicide rotation are important methods of preserving the effectiveness of disease resistance genes and fungicides. Disease resistance genes usually become ineffective due to short rotations and the prolonged use of one crop variety on a large acreage.

A number of factors can affect the level of disease symptoms observed at a given location in a given year. Environmental conditions such as moisture and temperature, the genetic makeup of both the variety and the pathogen and the amount of the pathogen present can all affect the level of disease. Although a variety with Intermediate (I) resistance can show disease symptoms under favourable conditions, a Susceptible (S) variety would have much more disease under the same conditions.

For example, ascochyta blight of chickpea is a very aggressive fungal disease. It can completely kill Susceptible (S) varieties within two weeks of symptoms first appearing. Chickpea varieties currently grown commercially in Saskatchewan have Intermediate (I) ascochyta blight ratings. This resistance weakens as plant development nears the flowering stage.

Fusarium-Damaged Kernels

By The Ministry of Agriculture

Fusarium head blight has recently become more common in Saskatchewan. Producers will find out the level of fusarium-damaged kernels (FDK) and perhaps DON (deoxynivalenol) on their grain from the elevator. However, *Fusarium* infection levels are needed to determine seed quality.

FDK does not provide the whole story regarding *Fusarium* infection. FDK is a measure of grain quality, not seed quality. Seed can be infected by *Fusarium* even when FDK are not present.

Fusarium spp. can infect the plant at different stages of the kernel development. Early infection may lead to an aborted floret, while later infection may leave spores on the kernel without showing visual symptoms. Tombstone kernels (FDK) are infected between those extremes.

Because there is no correlation between FDK and *Fusarium* infection of the seed, FDK cannot be used to predict *Fusarium* infection levels. A disease test is needed to determine if seed has *Fusarium* spores on it that could cause seedling blight or root rot.

Fusarium infection on the seed can sometimes be managed with a seed treatment. *Fusarium graminearum* is a particularly aggressive form of fusarium head blight, so recommendations are to prevent its introduction into new areas.

Seed treatments are used to manage seedling blights caused by *Fusarium spp.* The primary source of fusarium head blight infection is infected residue. Seed is not considered a contributing factor to fusarium head blight.

In areas where *F. graminearum* is not established, seed with more than five per cent *F. graminearum* is not recommended for planting. Seed with two to five per cent *F. graminearum* should be treated with an appropriate seed treatment.

F. graminearum now has a wide distribution in Saskatchewan, so, for most producers, a seed treatment should be used when total *Fusarium* species is greater than 10 per cent.

If seed is tested early in winter, germination should be retested again in the spring, especially if disease is present. Germination can decrease during storage.

For more information, refer to the Ministry of Agriculture publication *Seed-Borne Diseases of Cereal Crops.*

Relative Maturity

By The Ministry of Agriculture

Ratings

Maturity is measured from seeding to swathing ripeness. The actual number of days to reach maturity depends on local climatic conditions and, to some extent, on management practices.

Some of the tables in this booklet express the relative maturity in days while others use a five-category scale: VE, E, M, L and VL (very early, early, medium, late, very late). The limits for each category can vary from crop to crop. In barley, for example, AAC Synergy would be M, with L and E varieties plus or minus one to two day and VL and VE varieties beyond this range.

Comparisons

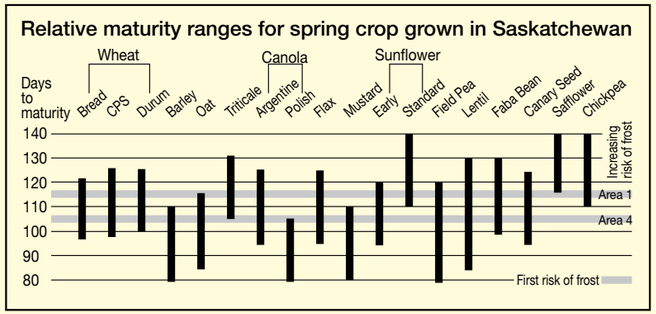
The relative maturity of varieties of different crops is important when making plans for seeding.

The chart on the right compares the relative maturity ranges for crops grown in Saskatchewan. Within each crop there are early and late maturing varieties. Whether a crop matures before the first killing frost depends on seeding date, management practices and environmental factors. Not all crops have a wide area of adaptation.

It is noted that climatic conditions can cause a wide variability in crop maturity.

Understanding Soybean Maturity Ratings

Soybean maturity ratings are currently based on three approaches: corn heat units, maturity groupings and days to maturity. The preferred ways to measure soybean maturities are through maturity group classifications or days to maturity. The maturity group (MG) rating system classifies soybean varieties from MG 000 in northern areas to MG IX in southern areas of North America, based on latitude ranges and photoperiod sensitivity. Each MG region covers one or two degrees of latitude, or about 200 to 300 km from north to south. For Saskatchewan, soybeans are most suited with 00 and 000 MG. Each MG can have subgroupings with a 0 to 9 decimal number following the group (or zone) number and these decimal places equate to slight increases in maturity. In the 00 maturity ratings, a subgroup of 00.1 would be earlier maturing than 00.9. Note that these MG ratings are not entirely standardized between seed companies. Check with your seed supplier to better understand MG ratings. Days to maturity is a direct measure of the days each variety takes to reach physiological maturity and is averaged across locations. The lower the number, the earlier-maturing the variety was across the sites tested. This value is obtained through the Regional Variety Testing Program and is an independent rating. Growers are advised to use all maturity information available to choose appropriate varieties for their area.



Peas	Medium (M) = 90 days; add three to four days for each rating beyond medium
Lentils	Early (E) = 100 days; Very Late (VL) = 110 days based on May 1 seeding
Chickpeas	Kabuli 110 – 120 days; Desi 110 days
Faba Beans	104 – 107 days
Dry Beans	E = 100 days; Late (L) = 110 days based on May 20 seeding
Soybeans	118 – 128 days

General Seed Facts

PEDIGREED SEED

Use certified seed regularly. This assures that the seed has high genetic purity and high germination and is relatively free from weeds and other crop seeds.

RE-USE OF HYBRID SEED

Seed grown from a hybrid variety (regardless of crop or variety) should not be re-used, since a 20 to 25 per cent yield reduction can occur in the next generation. This reduction is due to loss of hybrid vigour and possible occurrence of male-sterile plants. Lack of uniformity for maturity and quality traits can also occur.

SEED CLEANING

Seed should be cleaned carefully to remove weed seeds, trash, small or broken kernels, ergot and sclerotia. Not all seed-cleaning plants are equipped to clean grain to acceptable seed standards.

CROP ROTATION

Seeding into stubble of the same crop kind will increase disease risk, particularly in higher rainfall areas. Residue of infected crops may harbour disease pathogens. Maintain a diverse crop rotation.

ERGOT

Ergot attacks all varieties of rye, triticale, wheat and barley, as well as most common grass species. Oat is rarely attacked and all broadleaf species are immune. Grain containing 0.1 per cent ergot is considered poisonous and should not be used for food. Refer to the Ministry of Agriculture publication *Ergot of Cereals and Grasses*.

DAMP AND FROZEN SEED

Seed that is stored damp or tough may be low in germination and may lack adequate vigour. Grain that will be used for seed should be dried, if necessary, soon after harvest. The drying temperature should be below 37C for batch driers and 43C for recirculating and continuous driers. Ensuring the grain is dried at a low temperature will help to maintain a viable embryo and germination rates. Frozen grain should always be tested for germination by a seed-testing laboratory before planting. Such grain will frequently produce a high percentage of abnormal seedlings.

WHEAT MIDGE

All wheat classes, including durum and triticale, are susceptible to wheat midge. Producers in infested areas should be prepared to spray fields with recommended insecticides if necessary, unless varieties are midge-tolerant. Consider the use of midge-tolerant varieties. Refer to the Ministry of Agriculture publication *Wheat Midge*.

Crop	Recommended Minimum Average Soil Temperature at Seeding Depth (°C)	Estimated Seeding Dates for Saskatchewan	Recommended Seeding Depth in Inches (cm/inches)
Peas	5	Mid-April to Mid-May	3 – 8 / (1.2 – 3.2)
Lentils	5	Mid-April to May	2.5 – 7.5 / (1 – 3)
Chickpeas—Kabuli	7	Prior to May 25	3.5 – 6 / (1.5 – 2.5)
Chickpeas—Desi	10	Prior to May 25	3.5 – 6 / (1.5 – 2.5)
Faba Beans	3 - 5	Mid-April to Mid-May	5.1 – 7.6 / (2 – 3)
Dry Beans	12	May 25 to June 5	5 – 6 / (2 – 2.5)
Soybeans	10	May 10 to May 25	1.9 – 3.8 / (.75 – 1.5)

Source: Ministry of Agriculture

Safe Rates of Seed-Placed Fertilizer

Phosphorus (P) is an important plant nutrient. Phosphorus promotes the development of extensive root systems and vigorous seedlings. Encouraging vigorous root growth is an important step in promoting good nodule development and nitrogen fixation for all legumes and growth of all crops. It also plays an important role in promoting earlier and more uniform maturity in all crops. Maximum safe rates of actual seed-placed phosphate fertilizer vary by crop and are based on knife openers with a one-inch spread, nine-inch row spacing and good to excellent soil moisture. For wider rows and/or narrower seed spread behind the opener, or under dry conditions, the maximum safe rates would be lower. These recommendations are based on monoammonium phosphate (11-52-0), which has a relatively low salt index and should not be used for other fertilizers. The table at right summarizes the maximum safe rates of seed-placed phosphorus (P_2O_5) fertilizer in narrow row systems based on knife openers with a one-inch spread, nine-inch row spacing and good to excellent soil moisture. Wider row spacing and/or narrower seed spread openers would have reduced tolerance and safe rates should be adjusted lower.

Crop	Actual P_2O_5 (lbs./ac)
Cereals	50
Canola	25
Canary seed	30
Flax	15
Pea	15
Faba Bean	40
Lentil	20
Mustard	20
Chickpea	20
Soybean	20
Dry Bean	30

* Source: *Guidelines for Safe Rates of Fertilizer,* Ministry of Agriculture

CEREAL CROPS

Wheat

Main Characteristics of Varieties

Category and Variety	Years Tested	Yield (%) Area 1 & 2	Yield (%) Area 3 & 4	Yield (%) Irrigation	Protein	Resistance To[2] Lodging	Sprouting	Stem Rust	Leaf Rust	Stripe Rust	Loose Smut	Bunt	Leaf Spot	FHB	Head Awnedness	Rel. Maturity (days)	Seed Weight (mg)	Volume Wt.[3] (kg/hL)	Ht. (cm)
CWRS[1]		--- Relative to Carberry ---														---- Relative to Carberry ----			
Carberry	6	100	100	100	14.5	VG	F	MR	R	MR	MR	R	MS	MR	Y	102	35.8	80.3	83
CDC Adamant VB	5	107	112	---	-0.2	P	F	R	I	MS	S	S	MS	I	Y	-2	-1.8	+0.2	+3
AAC Alida VB	3	106	107	---	-0.2	VG	VG	R	R	MR	R	I	MS	MR	Y	-1	+1.6	+0.3	+6
Bolles	2	107	105	---	+0.5	VG	---	MR	R	MR	---	S	---	I	Y	-1	+1.0	-1.2	+1
CDC Bradwell §	5	101	108	---	-0.1	VG	F	MR	R	MS	MR	R	MS	I	Y	-1	-2.2	+0.6	+8
AAC Brandon	6	107	106	---	-0.3	G	P	R	R	MR	MR	S	I	MR	Y	0	+0.4	+0.1	-1
SY Brawn VB	2	109	110	---	-0.2	F	F	MR	R	I	---	MR	---	I	Y	-3	-3.0	-1.4	+9
AAC Broadacres VB	1	111	112	---	-0.6	VG	F	R	R	MR	---	R	---	I	Y	-1	+1.5	0.0	+2
AAC Cameron VB	5	108	118	---	-0.6	F	F	MR	MR	S	S	R	I	I	Y	-2	+2.8	-0.4	+17
Cardale	5	99	101	---	-0.1	F	G	R	R	S	I	MR	MS	MR	Y	-2	-1.5	-1.2	+3
SY Cast	2	106	106	---	0.0	VG	G	R	R	R	---	R	---	I	Y	-1	0.0	-0.9	0
SY Chert VB	4	101	108	---	-0.5	G	F	R	R	R	R	MS	I	Y	-1	-0.7	-0.7	+7
AAC Connery	5	101	100	---	+0.2	VG	G	R	MR	R	MR	I	I	MR	N	-2	-0.1	-0.8	+3
SY Crossite	2	112	111	---	-0.6	F	G	R	R	R	---	MS	---	MR	Y	-1	+1.4	-0.9	+8
Daybreak **VUA**	1	111	108	---	-0.6	F	---	R	MR	MR	---	S	---	I	Y	-2	+2.6	0.7	+6
AAC Elie	5	105	105	---	-0.2	G	F	R	R	MR	I	I	I	I	Y	+1	-0.3	0.0	-2
Ellerslie	2	104	105	---	-0.1	VG	G	R	MR	R	---	S	---	I	N	-3	-1.9	-2.0	+7
SY Gabbro	3	108	105	---	0.1	VG	F	MR	R	I	R	I	MS	MR	Y	-2	+3.2	-0.2	+7
AAC Hodge VB	1	113	118	---	-0.7	G	G	R	R	R	---	R	---	MR	Y	-1	-0.5	+0.7	+7
CDC Hughes VB	5	102	110	---	-0.2	G	G	R	MR	I	MR	MS	I	I	Y	-1	+2.0	+0.2	+2
Jake	2	97	101	---	+0.7	F	---	R	MR	R	---	MR	---	MS	Y	-3	-2.6	-0.6	+7
AAC Jatharia VB	5	108	114	---	-0.2	F	G	I	R	I	S	MS	I	I	Y	-1	+0.6	+0.8	+15
CDC Landmark VB	5	109	112	---	-0.2	G	G	R	MS	MR	MR	MS	I	I	Y	-1	+1.0	+0.8	+3
AAC LeRoy VB	2	111	113	---	-0.6	F	G	MR	MR	MR	---	I	MS	MR	Y	-2	+0.3	+0.3	+6
AAC Magnet	2	103	106	---	+0.2	VG	F	R	R	I	---	S	MS	MR	Y	-1	+2.3	-1.0	+5
SY Obsidian	4	101	104	---	-0.4	VG	F	MR	R	MR	R	MS	I	MS	Y	-1	+1.2	0.0	+3
CDC Ortona	3	104	107	---	-0.2	G	G	R	R	R	---	S	---	I	N	-2	-3.4	-1.5	+8
Parata	4	98	103	---	+0.2	F	F	R	MR	MR	MR	S	I	I	Y	-3	-2.1	-0.1	+9
CDC Plentiful	5	105	104	---	-0.2	G	P	R	R	MR	R	I	I	MR	N	-3	-2.2	-0.4	+9
AAC Redberry	5	105	107	---	-0.3	F	G	R	R	R	R	I	MS	I	Y	-3	-1.1	+0.8	+5
Rednet	2	101	107	---	0.0	P	F	R	R	R	---	S	---	MR	Y	-2	-1.1	-0.4	+14
AAC Redstar	1	95	113	---	-0.3	F	G	R	MR	MR	---	MR	---	MR	Y	-3	+0.5	-0.8	+7
AAC Russell VB	2	108	111	---	-0.4	G	F	MR	R	R	---	MR	---	MR	Y	-1	+2.1	+0.1	+4
Shaw VB	6	112	114	103	-0.5	F	G	R	MR	I	S	MR	MS	MS	N	-1	+0.3	-0.5	+19
Sheba	1	105	103	---	-0.6	G	---	R	R	R	---	MR	---	I	N	0	-1.9	0.0	+8
CDC SKRush	2	111	114	---	-0.4	G	P	MR	R	MR	---	I	---	MR	Y	-2	-2.8	-0.7	+8
SY Sovite	5	98	103	---	0.0	F	F	MR	R	R	R	MS	MR	MR	Y	-1	+2.2	-0.1	+7
CDC Stanley	6	102	105	100	-0.1	G	VG	R	MR	I	MR	S	I	MS	N	-2	-2.6	-1.7	+12
AAC Starbuck VB	3	113	118	---	-0.5	F	F	I	MR	MR	MR	S	S	MR	Y	0	+0.3	+0.5	+2
Stettler	6	105	107	100	+0.2	F	G	MR	MS	MR	R	MR	MS	MS	Y	0	-0.7	-0.4	+8
AAC Tisdale	5	102	105	---	+0.6	F	F	R	R	S	MR	MR	MS	MR	Y	-2	+0.7	-0.4	+8
CDC Titanium VB	5	106	110	---	+0.5	P	P	I	R	R	MS	I	MS	MR	Y	-2	+0.9	-0.2	+10
SY Torach	3	101	104	---	+0.2	VG	F	MR	R	MS	R	MS	MS	MR	Y	-1	-4.0	+0.1	-1
Tracker	2	100	103	---	+0.1	F	G	R	R	R	---	S	---	I	N	-3	-3.3	-1.6	+6
CDC Utmost VB	6	108	112	107	-0.3	F	G	MR	R	I	MS	S	I	MS	N	-3	-0.9	-1.4	+10
AAC Viewfield	5	111	109	---	-0.5	G	G	R	MR	R	S	MR	I	I	Y	-1	-1.7	+0.9	-3
AAC Warman VB	3	102	108	---	-0.2	P	F	R	R	MS	MR	S	I	MR	Y	-2	-1.4	+0.2	+13
Waskada §	6	108	107	101	0.0	P	VG	R	I	MS	MR	R	MS	MR	Y	-1	+0.5	+0.7	+16
AAC Wheatland VB	3	112	114	---	-0.5	VG	G	R	R	I	R	MR	S	I	Y	-1	-0.2	0.0	+2

Wheat (cont'd)

Category and Variety	Years Tested	Yield (%) Area 1 & 2	Yield (%) Area 3 & 4	Yield (%) Irrigation	Protein	Resistance To[2] Lodging	Sprouting	Stem Rust	Leaf Rust	Stripe Rust	Loose Smut	Bunt	Leaf Spot	FHB	Head Awnedness	Rel. Maturity (days)	Seed Weight (mg)	Volume Wt.[3] (kg/hL)	Ht. (cm)
CPSR[1]		--- Relative to Carberry ---														---- Relative to Carberry ----			
Accelerate **VUA**	2	111	119	---	-1.3	G	---	R	R	R	---	S	---	I	Y	-1	-3.5	-0.4	-4
AAC Castle VB	2	114	119	---	-0.8	F	F	R	R	MR	---	R	---	I	Y	0	+8.0	+0.4	-1
AAC Crossfield	5	114	113	---	-1.4	F	P	MR	R	R	I	S	I	I	Y	-1	+2.1	-1.7	0
AAC Entice	5	113	112	---	-1.2	P	P	R	R	R	MS	S	MS	I	Y	-1	+0.7	-2.3	+1
AAC Foray VB	5	116	120	122	-1.6	F	P	MR	R	I	MS	I	MS	I	Y	+1	+7.8	-1.4	+5
AAC Goodwin §	4	116	114	---	-0.6	G	G	I	R	R	MS	I	I	I	Y	-1	+1.1	+0.2	+2
AAC Penhold	5	108	111	108	-0.9	VG	VG	MR	R	MR	I	R	I	MR	Y	-2	+5.0	-0.2	-9
CDC Reign	2	107	117	---	-0.8	G	---	MR	R	I	---	S	---	I	Y	+1	-0.5	-0.4	+2
SY Rorke	1	110	118	---	-1.2	F	F	R	R	S	---	MS	---	I	Y	+1	-2.6	-0.9	0
SY Rowyn	5	102	108	---	-1.0	F	F	R	R	MR	I	S	I	MR	Y	0	-4.2	-0.5	-5
CDC Terrain §	5	116	114	108	-1.6	P	G	MR	R	R	MR	MR	I	MS	Y	0	+4.8	-2.1	+3
CWRS[1] moving to CNHR Aug. 1, 2021																			
AAC Redwater §	5	102	101	---	0.0	F	VG	R	R	MR	MS	I	MS	I	Y	-4	-3.7	-1.3	+8
CNHR[1]																			
Faller §	5	113	121	---	-1.6	F	F	I	MR	MS	---	I	MS	I	Y	-1	+2.4	-1.2	+2
Prosper	5	115	120	---	-1.6	F	F	MR	MR	S	---	I	I	I	Y	0	+2.9	-1.2	+3
CWSWS[1]																			
AC Andrew	5	130	137	---	-3.2	VG	P	MR	MS	I	S	S	---	I	Y	+1	+0.6	-3.0	0
AAC Chiffon VB*	5	136	137	139	-3.5	P	VP	S	I	MR	S	S	---	S	Y	+2	+2.2	-3.4	+12
AAC Paramount VB*	5	130	131	139	-3.4	VG	P	I	I	R	MR	S	---	MS	Y	+1	+1.4	-2.6	+7
Sadash VB*	5	137	139	---	-3.8	VG	P	MR	I	R	I	S	---	S	Y	+1	-0.3	-2.6	+3
CWSP[1]																			
Alderon	5	134	131	---	-3.2	VG	F	MR	R	MR	---	MS	I	MS	N	+4	+0.9	-7.3	-5
AAC Awesome VB*	5	134	136	---	-3.2	F	P	R	MR	R	I	I	I	I	Y	+1	+5.0	-1.4	+7
CDC Kinley §	5	103	108	---	-0.3	G	P	I	MR	I	MS	MR	I	I	Y	-1	-0.9	0.1	5
Pasteur	5	127	133	---	-2.2	VG	G	MR	R	MR	MS	S	I	I	N	+2	+1.1	-1.1	+4
Sparrow VB	5	133	135	---	-2.8	VG	G	MR	R	MR	---	I	I	---	N	+4	+0.6	-4.1	0
WPB Whistler	1	115	133	---	-3.2	VG	---	R	R	R	---	I	---	MS	---	+3	+3.0	-4.4	-4
CWHWS[1]																			
AAC Cirrus	3	102	101	---	0.0	VG	F	MR	R	R	R	I	I	I	Y	-1	-4.6	+0.2	+4
AAC Whitefox §	5	103	106	---	-0.9	F	F	MR	MR	MS	MS	MS	MS	I	N	-3	-1.5	-0.4	+16

[1] Includes direct and indirect comparisons with **Carberry**.
[2] Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.
[3] Multiply by 0.8 = lbs. per bushel (lbs./bu)
VB = varietal blend.

***AAC Awesome VB**, **AAC Chiffon VB**, **AAC Paramount VB** and **Sadash VB** were recently discovered to be midge -tolerant varieties with the *Sm1* gene. Producers with seed purchased prior to 2018 should check with their seed grower to ensure they have a stewardship agreement in place in order to preserve the single gene resistance. New seed may be needed to preserve the gene. More information is available at *www.midgetolerantwheat.ca*.

Durum Wheat

Category and Variety	Years Tested	Yield (%) Area 1 & 2	Yield (%) Area 3 & 4	Yield (%) Irrigation	Protein	Resistance To[1] Lodging	Sprouting	Stem Rust	Leaf Rust	Stripe Rust	Loose Smut	Bunt	Leaf Spot	FHB[2]	Head Awnedness	Rel. Maturity (days)	Seed Weight (mg)	Volume Wt.[3] (kg/hL)	Ht. (cm)
CWAD		--- Relative to Strongfield ---														-- Relative to Strongfield --			
Strongfield	6	100	100	100	14.3	P	F	R	R	MR	R	MR	I	S	Y	102	43.3	79.5	89
CDC Alloy	5	107	109	107	-0.4	F	F	MR	R	R	I	R	MS	MS	Y	+1	-0.7	+0.8	+3
Brigade	5	106	114	110	-0.9	F	F	R	R	MR	S	R	I	MS*	Y	+2	+0.4	+0.4	+8
AAC Cabri §	5	105	103	103	-0.4	P	F	MR	R	R	MR	R	I	MS	Y	+1	-0.6	+0.7	+4
CDC Carbide VB	5	106	107	103	-0.2	P	P	R	R	R	MS	R	MS	MS	Y	0	-1.5	+0.2	+2
AAC Congress	5	109	107	113	-0.5	P	F	MR	R	R	MR	R	MS	MS	Y	+1	-0.9	+0.4	+2
CDC Covert	2	108	112	---	-0.6	G	G	R	R	R	---	R	---	S	Y	+1	-5.1	+0.5	-1
CDC Credence	5	108	110	102	-0.7	F	F	MR	R	MR	MR	R	I	MS*	Y	+1	-0.8	0.0	+7
CDC Defy	2	111	111	---	-0.9	G	F	MR	R	I	---	R	---	MS*	Y	0	-4.0	+1.3	+4
AAC Donlow	2	110	107	---	-0.7	F	G	R	R	R	---	R	---	MS*	Y	+1	-4.1	+1.0	0
CDC Dynamic	5	105	106	110	+0.1	F	G	MR	R	MR	I	R	I	MS	Y	0	-1.1	+0.6	+1
CDC Flare	3	103	101	---	-0.3	VG	F	MR	R	MR	R	R	I	MS	Y	-1	+0.5	-0.8	0
CDC Fortitude	5	104	103	98	-0.2	F	F	MR	R	R	MS	R	MS	MS	Y	+1	-1.4	+0.2	-2
AAC GoldNet	2	111	111	---	-0.3	G	G	MR	R	R	---	R	---	S	Y	+1	-4.1	+0.7	+4
AAC Grainland	3	105	110	---	-0.3	F	G	MR	R	R	R	R	MS	MS	Y	+1	-0.4	-0.6	+1
AC Navigator	6	97	91	---	-0.6	F	G	R	R	R	MS	R	S	S	Y	+1	+1.8	+0.1	-11
CDC Precision	5	108	110	109	-0.5	G	F	MR	R	R	MS	R	MS	MS	Y	+1	-0.9	+1.0	+2
AAC Spitfire	5	108	110	111	-0.4	G	F	R	R	R	MS	R	MS	S	Y	0	-0.1	-0.2	-2
AAC Stronghold	5	101	100	112	-0.3	VG	G	R	R	MR	R	I	I	MS	Y	+2	+0.8	+0.6	-3
AAC Succeed VB	4	106	110	102	-0.2	F	F	MR	R	I	R	R	MS	MS	Y	0	+1.5	-0.4	+2
Transcend	5	102	105	93	-0.2	F	G	R	R	R	S	R	I	MS*	Y	+1	-1.2	0.0	+6
CDC Verona	5	102	106	103	-0.2	G	F	R	R	R	MS	R	MS	MS	Y	+1	-0.8	-0.2	+2

[1] Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.
[2] Although no varieties are considered to have Intermediate resistance, varieties with MS* rating generally express lower fusarium head blight symptoms compared to other MS rated cultivars.
[3] multiply by 0.8 = lbs./bu.
VB = varietal blend.

ADDITIONAL INFORMATION

Producers are strongly encouraged to use a combination of the Canadian Food Inspection Agency's List of Registered Varieties (*www.inspection.gc.ca*) and the Canadian Grains Commission's Variety Designation Lists (*www.grainscanada.gc.ca*) to determine the registration and grade eligibility status of varieties.

Grain yield, protein content, time to maturity, seed weight, volume weight and plant height of all varieties of common wheat and durum wheat are compared to **Carberry** and **Strongfield**, respectively. In 2020, the spring wheat varieties supported for registration since 2016 were grown in replicated trials at 14 locations.

Most varieties have been rated for their relative resistance to pre-harvest sprouting. Under wet post-maturity conditions varieties rated poor have a reduced ability to retain high Hagberg Falling Number values relative to those rated good or very good. Varieties with high test weight retain grade better under adverse harvest weather than those with low test weight. During wet harvest weather, grades drop more rapidly due to sprouting in swathed than in standing crops.

New races of leaf rust and stripe rust continue to evolve. Therefore, the rust resistance in varieties may change from year to year. The seed guide contains the most up-to-date information on rust resistance in current varieties. Early seeding may minimize risk of crop losses for varieties sown in southeastern Saskatchewan that are rated poor or very poor to leaf rust. Field scouting throughout the growing season is encouraged so that timely corrective action can be undertaken if required.

All varieties are at least moderately resistant to shattering. All varieties have moderately good resistance to common root rot.

Seed of varieties rated moderately susceptible and susceptible for bunt and loose smut should be treated with a recommended fungicide. Please refer to the Seed Facts section of this booklet or the most recent *Guide to Crop Protection*.

All wheat and durum varieties exhibit similar susceptibility to ergot infestation.

Varietal Blend ("VB") designated varieties possess the same "*Sm1*" gene, which confers tolerance to Orange Wheat Blossom Midge. To manage against the build-up of midge resistance to the *Sm1* gene, an interspersed refuge is used commercially. These varieties are not immune to wheat midge and can suffer some midge damage when high midge infestation levels occur. More information on midge tolerant wheat cultivars and interspersed refuge can be found at: *www.midgetolerantwheat.ca*.

CANADA WESTERN RED SPRING (CWRS)

AAC Redwater will be moving to the CNHR class as of August 1, 2021.

CDC Adamant VB, **CDC Hughes VB** and **CDC Landmark VB**, have partially solid to solid stems which may provide protection against the wheat stem sawfly.

Seed of new variety **Daybreak** is available. Seed of varieties **AAC Broadacres VB**, **AAC Redstar**, **AAC Russell VB** and **Sheba** is expected to be available in limited quantities fall 2021. Seed of new varieties **SY Brawn VB**, **SY Cast**, **SY Crossite**, **AAC Hodge VB** and **CDC SKRush** is expected to be available in limited quantities fall 2022.

CANADA PRAIRIE SPRING RED (CPSR)

Seed of the variety **Accelerate** is available. Seed of new varieties **CDC Reign** and **SY Rorke** is expected to be available in limited quantities fall 2021.

CANADA WESTERN HARD WHITE SPRING (CWHWS)

Varieties in the Hard White market class are intended for whole wheat bread and yellow alkaline noodle markets.

WHEAT ADDITIONAL INFORMATION (CONT'D)

CANADA WESTERN SOFT WHITE SPRING (CWSWS)

Soft white spring wheat may be used as a feedstock in the production of ethanol. Soft white spring wheat varieties are susceptible to pre-harvest sprouting. The leaf spot pathogens that affect other wheat classes also affect soft white cultivars and therefore recommendations for leaf spot control are similar.

CANADA WESTERN SPECIAL PURPOSE (CWSP) SPRING

Varieties in the Special Purpose Market class have no defined quality attributes and may have specific end-uses. Most varieties are intended for ethanol and livestock feed purposes. Producers are encouraged to contact the variety distributor or developer regarding uses of these varieties.

CANADA WESTERN AMBER DURUM (CWAD)

AAC Cabri, **CDC Fortitude**, **AAC Grainland**, **AAC Raymore** and **AAC Stronghold** have a solid stem which can provide protection against the wheat stem sawfly.

Seed of new varieties **AAC Donlow**, **CDC Flare**, **AAC GoldNet** and **CDC Defy** is expected to be available in limited quantities fall 2021.

CDC Flare is tolerant to the CLEARFIELD® herbicides Adrenalin SC and Altitude FX.

CWAD varieties are generally more susceptible than CWRS varieties to fusarium head blight. Growing varieties with improved resistance is recommended to reduce infection and disease propagule production as part of an integrated management strategy. Although no varieties are considered to have Intermediate resistance, **Brigade**, **CDC Credence**, **CDC Defy**, **AAC Donlow**, and **Transcend** generally express lower fusarium head blight symptoms compared to other MS rated cultivars. These varieties are noted in the table with an MS* rating for fusarium head blight resistance. Mycotoxin (DON) production by FHB fungi is generally lower for **CDC Defy**, **AAC Donlow** and **Transcend**.

All durum varieties are susceptible to two new races of loose smut.

Triticale

Main Characteristics of Varieties

Variety	Years Tested	Yield (%) Area 1 & 2	Yield (%) Area 3	Test Weight (kg/hL)	Seed Weight (mg)	Height (cm)	Maturity (days)	Resistance To[1] Lodging	Stem Rust	Leaf Rust	Bunt	Root Rot	Ergot	FHB
Spring Habit		--- Relative to AC Ultima ---												
AC Ultima	20	100	100	72.7	43.3	101	104	G	R	R	R	I	MS	I
Brevis	14	110	111	3.1	-0.5	-7	1	VG	R	R	R	---	I	I
Bunker	4	92	97	3.0	1.1	5	1	G	MR	R	R	I	I	MR
AAC Delight	8	104	104	0.6	4.2	-2	2	VG	R	R	R	---	I	I
Pronghorn	20	98	100	-0.3	0.5	7	2	G	MR	R	R	I	I	MR
Sunray	11	104	103	-1.2	-0.4	-1	1	G	R	R	R	---	MR	MS
Taza	9	103	97	-0.8	0.5	6	2	G	R	R	R	---	I	S
Tyndal	9	98	101	0.8	-1.2	-6	0	G	R	R	R	---	---	MS
Winter Habit		--- Relative to Pika ---												
Pika	6	100	100	68	---	125	E	F	---	---	---	---	---	---
Luoma	5	100	96	-1	---	1	L	F	---	---	---	---	---	---
Metzger	5	96	101	-1	---	-14	E	G	---	---	---	---	---	---

[1] Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

ADDITIONAL INFORMATION

Spring triticale matures two to four days later than **AC Andrew** CWSWS wheat; therefore it should be planted as early as possible. Newer triticale varieties yield two to 10 per cent higher than **AC Andrew**. Susceptibility to fusarium head blight is at least as great in triticale as in wheat. **AC Ultima** has an improved Hagberg Falling Number. **Brevis** has shorter and stronger straw. **AAC Delight**, **Tyndal** and **Bunker** are spring forage types and along with **Taza** have reduced awns.

Winter triticale has winter hardiness equal to that of winter wheat. **Luoma** and **Metzger** have reduced awns. **Metzger** is shorter and with stronger straw.

All triticale cultivars are susceptible to ergot infection and similar in reaction. Severe infestation of ergot can occur in any of the available cultivars if environmental conditions are favourable. **Sunray** represents an improvement in ergot resistance.

Winter Wheat

Main Characteristics of Varieties

Category and Variety	Years Tested	Yield (%) Area 1 & 2	Yield (%) Area 3 & 4	Protein (%)	Winter Survival	Resistance To [2] Lodging	Stem Rust	Leaf Rust	Stripe Rust	Bunt	FHB	Head Awnedness	Maturity Rating	Seed Weight (mg)	Volume Wt.[3] (kg/hL)	Height (cm)
CWRW[1]		-- Relative to CDC Buteo --											------- Relative to CDC Buteo -------			
CDC Buteo	21	100	100	12.3	VG	F	I	I	S	S	MR	Y	M	32.8	81.0	91
CDC Chase	9	105	109	0.3	F	F	R	R	MR	S	MS	Y	M	-0.5	-0.2	3
AAC Elevate	10	107	102	-0.3	G	VG	MR	I	S	MR	I	Y	M	4.3	-2.2	-7
Emerson	10	99	95	0.7	G	G	R	I	MR	S	R	Y	M	-4.1	-0.8	-5
AAC Gateway	11	98	99	0.5	F	VG	MR	I	MR	S	I	Y	M	-0.1	-1.5	-14
AAC Goldrush	8	106	108	0.2	VG	G	MR	R	I	S	I	Y	M	0.3	-1.7	-4
Moats	14	104	102	0.3	G	F	R	R	MR	MS	S	Y	M	-1.1	-0.6	1
AAC Network ✪	5	100	101	0.4	G	VG	R	MR	R	MR	I	Y	L	-2.0	-1.5	-12
Radiant	21	102	102	-0.3	VG	VG	S	S	MS	S	S	Y	L	1.7	-1.9	0
AAC Wildfire	9	112	116	0	VG	G	S	I	MR	MR	MR	Y	VL	2.6	-1.2	-5
CW Experimental																
AAC Icefield	8	100	99	-0.9	F	VG	R	MR	MR	S	I	Y	M	-1.7	-1.5	-10
CWSP[1]																
CDC Falcon	21	102	98	-0.8	F	VG	MR	MR	S	S	S	Y	E	-3.0	-1.9	-16
Pintail	8	108	111	-1.7	VG	F	MS	MS	MR	S	S	N	M	-4.2	-3.4	-3

[1] Includes direct and indirect comparisons with **CDC Buteo**
[2] Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.
[3] Multiply by 0.8 = lbs./bu.

ADDITIONAL INFORMATION

Winter wheat can be grown successfully in most areas if seeded into standing stubble within the optimal seeding date period (generally before Sept. 15) and if there is adequate snowfall.

Winter wheat will often escape fusarium head blight and orange wheat blossom midge damage if recommended seeding dates are followed.

CANADA WESTERN RED WINTER (CWRW)

AAC Network is a new variety that may be available in limited quantities in fall 2021.

Radiant and **AAC Elevate** have tolerance to the wheat curl mite vector that transmits Wheat Streak Mosaic Virus. To preserve the effectiveness of this wheat curl mite tolerance gene, agronomic practices that eliminate the "green bridge" of plant material that provides a reservoir for the mite should be followed whenever possible.

AAC Wildfire expresses tolerance to some biotypes of the Russian wheat aphid. Radiant and **AAC Wildfire** express bronze chaff at maturity.

CANADA WESTERN EXPERIMENTAL

AAC Icefield is a hard white winter wheat that is eligible for experimental grades under an Identity Preserved system to facilitate market research. **AAC Icefield** expresses high milling yield of bright-white, low-ash flour with good gluten strength at lower protein concentrations that may be of interest in some niche markets. For more information contact FP Genetics.

CANADA WESTERN SPECIAL PURPOSE (CWSP)

Varieties in the Special Purpose market class have no defined quality attributes and may have specific end uses. Most varieties are intended for ethanol and livestock feed purposes. Producers are encouraged to contact the variety distributor or developer regarding specialty uses of these varieties.

The awnless head of **Pintail** may improve palatability when harvested for forage or silage.

Fall Rye

Main Characteristics of Varieties

Variety	Years Tested	Yield (%) Area 1 & 2	Yield (%) Area 3 & 4	Protein (%)	Resistance To[1] Winter Survival	Lodging	Shattering	Ergot[2] (%)	Heading Date[3] (days)	Maturity[4] (days)	Seed Weight (mg)	Volume Weight[5] (kg/hL)	Height (cm)	Falling Number (sec.)
Open-Pollinated		- Relative to Hazlet -							---------- Relative to Hazlet ----------					
Hazlet	17	100	100	11.2	VG	G	VG	1.1	Jun 8	Aug 2	36.8	73.1	100	175
Prima	17	84	94	0.4	G	G	F	-0.3	-1	-3	-5.1	-0.8	11	+51
Danko	4	102	94	0.6	VG	VG	---	---	-2	-2	-3.7	0.5	0	---
Hybrid Varieties														
KWS Bono	8	127	127	-1.1	G	G	---	0.2	1	0	-4.9	-0.3	-12	+112
Brasetto	6	113	122	-0.9	VG	G	---	0.7	0	1	-3.5	-1.7	-10	+107
KWS Daniello ✪	6	118	117	-0.7	VG	VG	---	-0.6	0	0	-4.4	-1.4	-9	+120
KWS Gatano ✪	6	121	123	-1.1	G	G	---	-0.5	0	1	-5.8	-0.4	-12	+106
KWS Serafino[6] ✪	4	127	130	-1.0	G	VG	---	-0.6	0	0	-4.7	-0.7	-10	+136
KWS Trebiano[6] ✪	4	124	127	-0.6	G	VG	---	-0.7	0	0	-1.6	-0.4	-7	+122

[1] Ratings: VG = Very Good; G = Good; F = Fair.
[2] Ergot bodies in grain as percent of total weight during registration testing. All varieties are susceptible to ergot. Current testing does not suitably differentiate genetically controlled resistance to ergot infection (varietal differences) from other factors such as weather, crop development stage, inoculum load and management.
[3] Average heading date relative to **Hazlet**. Flowering typically occurs seven to 14 days after heading, depending on weather conditions.
[4] Average maturity date relative to **Hazlet**. Wet and cool conditions can prolong maturity beyond these dates.
[5] Multiply by 0.8 = lbs./bu
[6] **KWS Serafino** and **KWS Trebiano** are new registrations.

ADDITIONAL INFORMATION

Fall rye is much more cold tolerant than winter wheat or winter triticale, with field survival being approximately 30 to 100 per cent better than winter wheat for current fall rye varieties.

A major factor in marketing rye grain into the milling market is sprouting. This is generally measured using the Hagberg falling number test and is measured in seconds. Typically, a falling number of 180 seconds or greater is preferred by the rye milling market. Falling number is heavily influenced by moisture around harvest time and producers must make sure rye is harvested in a timely manner, similar to wheat crops. There is considerable variation in fall rye varieties for falling number; this must be considered if the milling market is the targeted end-user for rye grain.

Very little recent information on shattering in rye has been obtained, as it has not been observed in field trials recently, thus no information is available for recently released varieties.

Forage Rye

KWS Propower is a hybrid rye variety that is suited for silage use.

Wheat Classes Changes

By The Ministry of Agriculture

The Canadian Grain Commission (CGC) Wheat Class Modernization was initiated in 2015. Revised quality standards (established in May 2015) led to a review of the suitability of all western Canadian wheat varieties for their current market classification. The review was in part due to some concerns about declining gluten strength in Canadian wheat shipments.

The observed weaker gluten strength was due to a number of factors, including the predominance of some varieties that were on the lower end of the range of gluten strength for CWRS (Canada Western Red Spring). Customers require higher gluten strength from CWRS for their products to perform consistently. CGC reviewed the quality standards expected for CWRS and CPSR (Canada Prairie Spring Red) wheat classes so that the performance of those classes are more consistent with customer expectations.

The wheat class review was comprehensive. The initial 29 varieties were moved out of CWRS and CPSR Aug. 1, 2018 to the Canada Northern Hard Red (CNHR) class. **AC Crystal** moved out of CPSR to CNHR Aug. 1, 2019.

Additional varieties have been identified. **AC Domain**, **Muchmore**, **AAC Redwater**, **Vesper VB** and **5605HR CL** will move out of CWRS to CNHR Aug. 1, 2021.

Varieties that will be moved to CNHR can continue to be grown, but must be marketed in their new class after the transition date.

> Producers are strongly encouraged to use the Canadian Grain Commission's (CGC) Variety Designation Lists (*www.grainscanada.gc.ca*), which indicate the varieties belonging to each class of wheat in Canada and the complete list of varieties being designated to another class, effective Aug. 1, 2018 and beyond. For complete and up-to-date information on the Canadian Wheat Class Modernization initiative, visit CGC's website. It is also recommended producers use the Canadian Food Inspection Agency's List of Registered Varieties (*www.inspection.gc.ca*) to determine registration status of varieties.

Malting Barley

Main Characteristics of Varieties

Category[1] and Variety	Years Tested	2 or 6 Row	Awns[2]	Yield (% AAC Synergy) Area 1 & 2	Yield (% AAC Synergy) Area 3 & 4	Relative Maturity[3]	Resistance To[4] Lodging	Netted Net Blotch[5]	Spotted Net Blotch[5]	Spot Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	FHB
Malting Acceptance: Recommended																
AAC Synergy	7	2	R	100	100	M	F	MR	R	R	S	S	I	I	MR	I
CDC Bow	7	2	R	94	93	M	VG	S	MR	I	MS	S	I	MS	MR	MS
AAC Connect	6	2	R	98	93	M	G	I	MR	MR	S	S	R	MS	MR	MR
CDC Copeland	7	2	R	92	93	M	F	I	I	S	MS	MS	I	I	MR	I
CDC Fraser	7	2	R	100	98	M	G	MR	R	MR	MS	R	R	MS	MR	I
AC Metcalfe	7	2	R	87	86	M	F	S	I	I	MS	R	I	I	MR	I
Malting Acceptance: In Development or Limited Demand																
Bentley	7	2	R	99	96	L	G	MS	R	I	MS	MS	MR	I	MR	I
AB BrewNet ✪	4	2	R	101	101	L	G	MS	I	MS	I	MS	MR	---	MR	MR
CDC Churchill ✪	5	2	R	103	102	M	G	MR	MR	I	S	MS	MR	---	MR	MS
CDC Copper	5	2	R	102	98	M	G	MR	MR	I	MR	I	MR	---	I	MS
Lowe	7	2	R	98	95	L	F	I	MR	I	MR	R	R	---	S	MR
Newdale §	6	2	R	98	97	M	G	I	MR	I	MS	S	MR	MR	MR	I
CDC PlatinumStar[7]	7	2	R	94	88	M	F	I	MR	S	S	S	R	S	I	MR
Celebration §	7	6	S	95	91	M	VG	S	MR	MR	S	R	R	MS	I	MS
Legacy	6	6	S	90	85	M	G	S	MR	MR	MS	I	MR	MR	MR	MS
Other[6]																
AAC Goldman	7	2	R	95	94	M	G	I	R	I	I	S	I	---	I	MR
CDC Goldstar[7]	6	2	R	101	97	M	G	I	MR	I	S	I	R	S	MR	MS

[1] These categories are established annually by the Canadian Malting Barley Technical Centre (Call 204-984-4399 for more information).
[2] R=Rough, S=Smooth.
[3] Relative maturity: the relative maturity of the check, **AAC Synergy**, is M (on average, 94 days from seeding to swathing ripeness).
[4] Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible.
[5] There are two forms of net blotch, netted (*Pyrenophora teres f. teres*) and spotted (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan, the netted form is more prevalent.
[6] Although not on the CMBTC list, a malting barley market may exist for these varieties.
[7] **CDC PlatinumStar** and **CDC Goldstar** are available only through a closed loop Identity Preserved program offered by Prairie Malt Limited/Sapporo Breweries and their agents.

ADDITIONAL INFORMATION

Growers are reminded that the malting and brewing industry is cautious about using new varieties. The Canadian Malting Barley Technical Centre prepares a list of recommended varieties annually. The recommended list is available on page VR20.

Growers are cautioned that most malting varieties, especially two-row barley, are more susceptible to sprouting. Harvesting grain over 16 per cent moisture and then using aeration bins for drying can lead to sprouting and embryo death. Seed with reduced germination is undesirable for seed or malting.

Lines Tested for Malting and Brewing Quality

Small-scale tests are a good measure of malting potential, but are not sufficient to determine the commercial acceptability of malting varieties. Final acceptance is given only after two years of successful plant scale evaluation. Several carload lots of barley are malted and brewed. The beer is then given the ultimate test—a taste panel. This process normally takes a minimum of three years, since a crop grown in one year will be malted in January-February, brewed in May-June, and aged and tasted in October-November of the following year.

Feed and Food Barley

Main Characteristics of Varieties

Category and Variety	Years Tested	2 or 6 Row	Awns[1]	Yield (% AAC Synergy) Area 1 & 2	Yield (% AAC Synergy) Area 3 & 4	Relative Maturity[2]	Resistance To[3] Lodging	Netted Net Blotch[4]	Spotted Net Blotch[4]	Spot Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	FHB
Hulled																
Altorado	7	2	R	104	99	M	G	S	MR	S	S	MR	MR	MR	MR	I
CDC Austenson	7	2	R	102	103	M	G	MS	R	MR	S	S	R	I	I	I
Brahma	7	2	R	100	99	M	G	S	I	S	MS	MS	R	MR	MR	I
Canmore	7	2	R	96	99	L	G	MS	MR	I	MR	R	R	I	MS	I
Claymore	7	2	R	103	98	L	VG	S	I	I	S	S	R	I	MR	MR
CDC Coalition	7	2	R	97	98	M	VG	S	MR	I	MS	R	MR	I	MR	I
CDC Cowboy	6	2	R	85	89	L	F	I	MR	I	MS	MS	MR	I	MR	MR
CDC Maverick	6	2	S	79	83	M	F	I	MR	I	MS	S	R	I	MR	MR
Oreana	7	2	R	98	93	L	VG	S	MR	I	S	S	R	I	I	S
Sirish	7	2	R	95	91	M	VG	MS	MS	MS	MR	S	R	---	S	MS
AB Wrangler ✪	4	2	R	105	99	M	F	I	I	MR	MS	MS	MR	---	R	MR
AB Advantage ✪	5	6	S	104	99	VL	VG	MS	I	I	I	MR	I	---	I	S
Amisk	7	6	SS	97	98	M	G	I	MR	MR	I	S	MS	MS	MR	S
AB Cattlelac ✪	5	6	SS	99	97	L	VG	MS	MR	MR	I	I	R	---	I	S
AC Rosser	11	6	S	101	99	M	G	I	MR	MR	S	MS	MR	MR	MR	S
AB Tofield ✪	3	6	S	104	105	L	G	MS	I	I	I	---	MR	---	R	S
Hulless																
CDC Ascent	7	2	R	85	83	M	G	S	MR	I	MS	MR	MR	I	I	MR
CDC Carter	7	2	R	79	84	M	G	I	MR	I	MS	R	R	S	I	MR
CDC Clear	7	2	R	78	89	L	G	MS	R	I	MS	R	R	I	MR	MR
CDC McGwire	8	2	R	84	83	M	G	I	MR	I	I	MS	MR	MR	I	MR

[1] R = Rough, S = Smooth, SS = Semi-Smooth.
[2] Relative maturity: The relative maturity of the check, **AAC Synergy**, is M (on average, 94 days from seeding to swathing ripeness).
[3] Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible.
[4] There are two forms of net blotch: netted (*Pyrenophora teres f. teres*) and spotted (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan, the netted form is more prevalent.

ADDITIONAL INFORMATION

Most available varieties are susceptible to one or more types of smut. Therefore, seed of susceptible varieties should be treated with a registered fungicide on a regular basis.

Two-row barley varieties are generally more resistant to shattering than six-row varieties.

Forage Barley

AB Advantage, AB Cattlelac and **AC Ranger** are six-row forage varieties. **CDC Cowboy** and **CDC Maverick** are two-row forage varieties.

Hulless

In hulless varieties the hull is left in the field; therefore, comparable yields are nine to 12 per cent lower. Hulless seed is more susceptible to damage than hulled seed, so handling should be minimized.

Hulless Food

CDC Ascent, **CDC Fibar**, **CDC Marlina** and **CDC Rattan** are high beta-glucan, waxy starch varieties. **CDC Hilose** is a high beta-glucan, high amylose starch variety. All are available for specialty markets.

CDC Carter, **CDC McGwire** and **Roseland** are two-row, normal starch, hulless barleys suitable for food use.

Irrigation

Disease resistance, straw strength and maturity are more critical when barley is grown under irrigation. Growers should select early, strong-strawed, disease-resistant varieties.

CMBTC™ 2021-2022 RECOMMENDED MALTING BARLEY VARIETIES

CANADIAN MALTING BARLEY TECHNICAL CENTRE

THE CANADIAN MALTING BARLEY TECHNICAL CENTRE (CMBTC) RECOMMENDED LIST provides producers with an indication of which malting barley varieties have the greatest potential for selection and marketing. Each variety on the recommended list has been pilot scale tested at the CMBTC and all exhibit good malting and brewing characteristics. All varieties on the list are registered with the Canadian Food Inspection Agency (CFIA).

VARIETIES RECOMMENDED

VARIETY	TYPE	MARKET COMMENTS	SEED DISTRIBUTOR
CDC Copeland	2 Row	Established Demand	SeCan
AC Metcalfe	2 Row	Established Demand	SeCan
AAC Synergy	2 Row	Established Demand	Syngenta
AAC Connect	2 Row	Growing Demand	CANTERRA SEEDS
CDC Bow	2 Row	Growing Demand	SeCan
CDC Fraser	2 Row	Growing Demand	SeCan

In addition to the varieties listed, there are also contracting opportunities for the following:

- **Bentley**, **Celebration** and **CDC PlatinumStar** (CANTERRA SEEDS)
- **Legacy**, **Newdale**, **Tradition** (FP Genetics)
- **Cerveza** (Mastin Seeds)
- **Lowe** (SeCan)

The CMBTC recommends that producers have a contract for all barley varieties being grown for malt

VARIETIES IN DEVELOPMENT

These newly registered varieties are undergoing seed propagation and commercial market development. Contact the seed distributor for opportunities to trial these promising new varieties.

VARIETY	TYPE	SEED DISTRIBUTOR
CDC Churchill	2 Row	SeCan
CDC Copper	2 Row	FP Genetics
AB BrewNet	2 Row	SeedNet

THE CMBTC AND ITS MEMBERS RECOMMEND

Talk with your grain company representative, local elevator operators, malting companies, or the representative seed company about opportunities in your area to grow and market malting barley.

Use certified seed to ensure varietal purity, reduce incidence of disease and increase the likelihood of selection for malt.

cmbtc.com

Canada

For inquiries please contact the CMBTC by email at cmbtc@cmbtc.com or call 204-984-4399

@MaltAcademy @MaltAcademy

Oat

Main Characteristics of Varieties

Variety	Years Tested	Yield (% CS Camden) Area 1 & 2	Yield (% CS Camden) Area 3 & 4	Test Weight (g/0.5L)	% Hull	Hull Colour	% Plump	Relative Maturity[1]	Height (cm)	Resistance To[2] Lodging	Stem Rust	Crown Rust	Smut
CS Camden	7	100	100	242	24.3	White	82	L	94	VG	S	MS	I
CDC Arborg	6	106	106	250	20.1	White	85	M	108	VG	S	I	R
CDC Boyer	7	88	90	232	23.3	White	85	M	105	G	I	I	MS
CDC Dancer	7	88	88	253	19.8	White	86	M	103	G	I	I	R
Derby	7	87	92	247	22.9	White	79	M	107	G	S	S	MS
AAC Douglas ✪	4	105	99	245	20.7	White	81	M	98	G	I	MR	R
CDC Endure ✪	5	107	107	245	21.2	White	89	M	102	VG	S	MR	R
CDC Haymaker	5	82	85	225	24.9	White	87	VL	111	G	S	S	MR
CDC Minstrel	7	95	97	245	21.0	White	92	L	98	VG	I	MS	R
AC Morgan	7	100	102	236	25.1	White	82	L	101	VG	S	S	I
CDC Morrison	7	91	86	248	24.4	Yellow	83	L	95	VG	I	MS	R
CDC Nasser §	7	98	97	233	21.8	White	79	VL	106	G	MS	S	R
CDC Norseman	7	95	95	241	20.0	White	81	M	102	G	S	MR	MS
ORe3541M	7	94	90	257	21.5	White	90	L	93	VG	S	R	R
ORe3542M	7	97	92	247	22.5	White	95	L	93	VG	S	R	R
Pinnacle §	7	102	99	244	23.6	White	89	VL	101	F	I	S	R
CDC Ruffian	7	101	97	247	20.4	White	88	L	95	G	S	I	R
CDC Skye ✪	4	100	97	250	19.9	White	85	M	99	G	S	R	R
Souris	7	97	93	253	21.5	White	72	M	98	VG	MR	MS	R
Summit	7	93	95	256	21.6	White	81	M	94	G	I	I	R
Triactor	7	103	108	240	22.8	White	80	L	99	G	S	MR	I
Varieties being tested for adaptability in Western Canada													
Akina	5	102	100	242	22.5	White	---	M	95	G	---	R	R
Alka ✪	3	108	101	247	22.8	White	---	L	95	G	S	I	R
Kara	5	102	100	247	23.2	White	---	M	88	G	---	MR	MR

[1] Maturity rating L = 98 days.
[2] Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

ADDITIONAL INFORMATION

Although disease pressure is lower in eastern Saskatchewan than in Manitoba, crown rust races capable of attacking most varieties, except those with an MR or R rating, are increasing in southeast Saskatchewan. Early seeding will reduce the likelihood of severe infection.

Producers growing oats for the milling market are advised to check the "approved" varieties list available from the various oat millers.

Feed Oat

CDC SO-I and **CDC Nasser** are specialty feed oat varieties with higher digestible energy for cattle.

Forage Oat

CDC Baler, **CDC Haymaker** and **Murphy** are forage oat varieties available for annual forage production in Saskatchewan.

Hulless Oat

AC Gwen is a hulless variety available for production in Saskatchewan. The hull is part of normal oat yield, thus hulless types yield less. They are difficult to handle and store and should be stored at less than 12 per cent moisture.

False Oats or Fatuoids

False wild oats, or fatuoids, are off-types within common oat fields that have an appearance similar to wild oat, most notably a prominent, dark awn and increased hairiness at the base of each floret. They are thought to result from the infrequent cross-pollination between common oat (*Avena sativa*) and true wild oat (*Avena fatua*). As such, their presence will likely be observed more often in fields planted from farm-saved seed. They have been reported within fields of common oat at rates up to one per cent and occur within all oat varieties.

OTHER CROPS

BUCKWHEAT

Buckwheat is sensitive to high temperatures and dry weather conditions in the blossom stage, which can reduce seed set and yields. New self-pollinated varieties are being released. Buckwheat is very susceptible to frost at all stages of growth. Delayed seeding is advisable to avoid spring frost.

CARAWAY

Caraway is a biennial spice crop, producing seed in the second year and sometimes in the third year. Seedlings are small, slow in developing and compete poorly with weeds. The crop is usually swathed because of its indeterminate growth habit and seed shattering.

SAFFLOWER

Safflower is an annual oilseed or birdseed crop that can be grown successfully in the Brown Soil Zone. Safflower must be sown early (late April).

Saffire matures in about 120 days. Seed should be planted shallow but into a firm, moist seedbed at about 30 kg/ha (27 lb./ac). **Saffire** has moderate resistance to sclerotinia head rot and alternaria leaf spot. Contract production is advised.

CORIANDER

Coriander is an annual spice crop. Seedlings are small, slow to develop and compete poorly with weeds. The large seeded type is earlier maturing than the small seeded type. **CDC Major** is a large-seeded variety and **CDC Minor** is a small-seeded variety. The crop is usually straight-cut to avoid wind damage in swaths. For more information, consult the Ministry of Agriculture publication *Coriander*.

FENUGREEK

Fenugreek is a leguminous spice crop adapted to dryland conditions in the Dark Brown and Brown Soil Zones. The crop should be seeded early to avoid yield and quality loss from fall frost. Contract production is advisable, as markets are limited.

Quinoa

Quinoa (*Chenopodium quinoa*) is a long season (about 120 days to maturity) broadleaf pseudocereal that can be grown on a wide range of soil types. Early in the growing season, it is sensitive to excessive moisture. It also has a significant moisture requirement similar to other broadleaf crops. Quinoa is frost-tolerant both as a seedling and at maturity. An earlier seeding date into a well-prepared seedbed is considered best practice due to the long growing season required by the crop. Quinoa can be direct seeded at a 1.5 cm (0.5 in.), though at least one tillage pass prior to planting is preferred for even emergence.

With sufficient moisture, quinoa is tolerant to high temperatures and is resistant to lodging. Quinoa has an indeterminant growth habit. Heights will vary depending on fertility and environmental conditions, but average about 100 cm tall. Quinoa should be straight cut at maturity.

Quinoa is grown exclusively under total production contract, with the seed marketed as whole seed, as ingredients and in value-added markets.

NorQuin **NQ94PT** is a golden seeded variety with high seed yield and uniform, earlier maturity. NorQuin **NQRed** is a red-seeded quinoa variety with high seed yield and earlier maturity. NorQuin **NQRainbow** is a composite blend of several quinoa plant types with high seed yield and slightly later maturity.

For more information on quinoa, contact NorQuin at 306-933-9525 or *www.quinoa.com*.

Canary Seed

Main Characteristics of Varieties

Variety	Type	Site Years Tested	Yield[1] (%)	Days to Heading	Days to Maturity	Height (cm)	Test Weight (kg/hL)[2]	Seed Weight (g/1000)
			Relative to CDC Bastia					
CDC Bastia	glabrous	13	100	56	98	102	70.8	8.0
CDC Calvi	glabrous	9	105	2	3	4	0.7	0.3
CDC Cibo	glabrous	9	106	0	-1	-9	-0.4	0.2
CDC Lumio	glabrous	5	117	2	1	3	-0.6	0.4
Cantate	hairy	13	113	1	2	-3	-7.0	0.5
Keet	hairy	13	126	4	3	4	-6.1	-0.2

[1] Yield data not collected by Area, 2007-2019
[2] Multiply by 0.8 = lbs./bu

ADDITIONAL INFORMATION

The seed of annual canarygrass, more commonly called Canary seed, is used as food for caged and wild birds. **Elias** and **Keet** pedigreed seed has not been produced in recent years.

Seed hulls of **CDC Bastia**, **CDC Calvi**, **CDC Cibo** and **CDC Lumio** do not have the small sharp hairs that cause irritation when Canary seed is threshed and handled and are called glabrous. **CDC Cibo** is yellow-seeded while the other varieties produce brown seed.

Glabrous varieties that have been dehulled are approved for human consumption in Canada and the United States, but markets are currently limited.

Canary seed plants have a dense, shallow root system and growing the crop on sandy soils is not recommended. Canary seed may be grown successfully on stubble, providing adequate moisture is available for rapid germination and emergence. The recommended seeding rate is 34 kg/ha (30 lb./ac) with germination greater than 85 per cent. Reduced emergence might be expected if Canary seed is seeded below five cm depth.

Canary seed is subject to damage by English grain aphid and bird cherry oat aphid. Aphid populations build up rapidly on leaves and stems, inside the boot and panicles of the plant in July and August and may require an insecticide application to prevent yield loss. Information from the United States indicates that infestations of 10 to 20 aphids on 50 per cent of the stems prior to soft dough stage may cause enough damage to warrant insecticide application. The aphids often hide in the dense head of the Canary seed plant. Damage may occur at populations below these levels.

Canary seed leaf mottle is a foliar disease that can cause yield losses. Leaf mottle is caused by a fungus, *Septoria triseti,* that only affects Canary seed. The disease is inconspicuous at early stages because there is little visual contrast between healthy and diseased leaf area. Stubble-borne inoculum is the source of infection, thus crop rotation is key in limiting the severity of leaf mottle.

In recent years *Fusarium spp*., particularly *F. graminearum*, were commonly found in a majority of the Saskatchewan Canary seed fields surveyed. The average incidence within fields was generally low (three to four per cent). In most instances there were no obvious infection symptoms and seed plating was required to detect the fungus. In some cases an orange discoloration arising from fusarium infection is visible on the infected panicles in the field.

Canary seed is resistant to shattering. It may be straight-combined or swathed when fully mature. For more information on Canary seed, consult the Ministry of Agriculture publication *Canary Seed*.

PULSE CROPS

Lentil

Main Characteristics of Varieties

Variety	Herbicide Tolerance[1]	Years Tested[2]	Yield (% CDC Maxim) Area 1 & 2	Yield (% CDC Maxim) Area 3 & 4	Height (cm)	Days to Flower	Maturity Rating[3]	Resistance To: Ascochyta Blight	Resistance To: Anthracnose Race 1	Seed Coat Colour	Cotyledon Colour	Seed Weight (g/1000)
Small Red												
CDC Maxim	CL	14	100	100	34	51	E/M	MR	MR	gray	red	40
CDC Carmine		10	111	106	34	54	E/M	MR	MR	gray	red	40
CDC Coral		7	110	103	33	55	E/M	MR	MR	gray	red	37
CDC Dazil	CL	12	97	92	33	53	E/M	MR	I	gray	red	35
CDC Impulse	CL	11	107	100	37	52	E/M	MR	MR	gray	red	44
CDC Karim ✪	CL	5	102	100	35	55	E/M	MR	MR	gray	red	39
CDC Nimble ✪	CL	7	109	107	35	52	E/M	MR	MR	gray	red	38
CDC Proclaim	CL	10	105	100	34	51	E/M	MR	MR	gray	red	40
CDC Redcoat		7	105	93	33	50	E/M	MR	MR	gray	red	39
CDC Redmoon		10	114	104	33	52	E/M	MR	MR	gray	red	41
CDC Simmie ✪	CL	6	109	103	34	53	E/M	MR	MR	gray	red	39
Extra Small Red												
CDC Imp ✪	CL	7	95	93	35	52	E/M	MR	MR	gray	red	30
CDC Impala	CL	13	84	82	30	51	E	MR	MR	gray	red	31
CDC Roxy		10	103	97	34	53	E/M	MR	MR	gray	red	32
Large Red												
CDC KR-2	CL	10	104	90	37	52	M	MR	MR	gray	red	55
CDC Sublime ✪	CL	5	116	104	38	54	E/M	MR	MR	green	red	53
Small Green												
CDC Imvincible	CL	14	94	81	33	49	E	MR	MR	green	yellow	34
CDC Kermit		11	105	95	36	49	E/M	MR	MR	green	yellow	34
CDC Jimini ✪	CL	5	108	100	36	50	E/M	---	---	green	yellow	38
CDC Viceroy		6	97	98	34	49	E	MR	MR	green	yellow	33
Extra Small Green												
CDC Asterix		11	96	91	30	48	E	MR	I	green	yellow	26
Medium Green												
CDC Imigreen	CL	11	78	71	44	50	M	MR	S	green	yellow	57
CDC Impress	CL	7	87	71	34	50	M	MR	MS	green	yellow	52
Large Green												
CDC Greenland		19	89	70	38	52	M/L	MR	S	green	yellow	64
CDC Greenstar		12	98	80	40	52	M/L	MR	I	green	yellow	73
CDC Grimm	CL	6	93	80	40	55	M/L	MR	MR	green	yellow	75
CDC Impower	CL	12	82	67	41	52	M/L	MR	S	green	yellow	64
CDC Lima	CL	8	92	85	35	51	M/L	MR	S	green	yellow	74
French Green												
CDC Marble		12	103	96	36	49	E	MR	I	green marble	yellow	34
CDC Peridot	CL	8	84	94	37	48	E	I	MS	green marble	yellow	38
CDC Pilgrim ✪	CL	5	96	91	35	52	E/M	---	---	green marble	green	33
Green Cotyledon												
CDC Imerald ✪	CL	5	88	82	35	53	E/M	---	---	green	green	54
CDC QG-1		6	80	65	42	51	M	I	I	green	green	49
CDC QG-2		10	89	88	40	48	E	I	I	green marble	green	32
CDC QG-3	CL	7	92	66	38	53	E/M	I	MR	green	green	46
CDC QG-4	CL	7	92	90	36	53	E/M	I	MR	green marble	green	33
Spanish Brown												
CDC SB-3	CL	8	90	87	35	51	E	I	MR	gray dotted	yellow	38
CDC SB-4	CL	7	102	101	34	53	E/M	I	MR	gray dotted	yellow	41

[1] CL indicates Clearfield® tolerant variety.
[2] Co-op and Regional Trials in Saskatchewan since 2006. Comparisons to the check variety, small red lentil **CDC Maxim**.
[3] Maturity ratings: Normal maturity range in days based on May 1 seeding is E = 100, VL = 110 but maturity can be much earlier in dry years, much later in cool wet years. See Page 10 for more information on maturity range in lentil.
[4] Seed or seed coat colour: B = beige; LT = light tan; T = tan.

Lentil (cont'd)

Main Characteristics of Varieties

ADDITIONAL INFORMATION

Seed supplies may be limited for recently released vairieties such as **CDC Simmie**, **CDC Sublime**, **CDC Jimini**, **CDC Pilgrim** and **CDC Imerald**.

Types of Lentils

Small red lentils are the most popular class grown in Saskatchewan. Large red lentils have red cotyledons with a much larger seed size than small red lentils.

Green lentils are classified by seed size, with the small greens sometimes referred to as Eston-type and the large greens referred to as Laird-type. They have green seed coats with a yellow cotyledon. The large green types represent the highest share of green lentil acres.

French green lentils have a green-marbled seed coat with yellow cotyledons. Seed size is small, most similar to small red lentils. French green lentils retain their shape better than small reds or greens upon cooking. **CDC Marble** has a slightly lighter colour pattern than other French green varieties.

Green cotyledon lentils have a green or marbled seed coat with green cotyledons and a small-to-medium seed size.

Spanish brown lentils have a grey-dotted seed coat with yellow cotyledons. This market class is sold primarily into Spain. Seed size is small, most similar to small reds.

Chickpea

Main Characteristics of Varieties

Variety	Years Tested	Yield (% Amit) Area 1[1]	Yield (% Amit) Area 2[1]	Ascochyta Blight[2]	Height (cm)	Days to Flower	Maturity	Seed Weight (g/1000)	Seed Shape[3]	Seed or Seed Coat Colour[4]	Tolerance to Solo ADV (imazamox) herbicide
Kabuli											
Amit (B-90)	19	100	100	4.4	47	56	L	258	Ro	B	no
CDC Alma	12	92	91	6.0	41	53	L	363	RH	B	yes
CDC Frontier	19	107	104	4.5	45	55	L	350	RH	B	no
CDC Leader	15	107	105	4.5	42	54	M	390	RH	B	no
CDC Luna	18	98	100	5.7	40	53	ML	368	RH	B	no
CDC Orion	14	105	102	5.6	44	50	L	428	RH	B	no
CDC Palmer	10	105	100	4.9	42	52	ML	415	RH	B	no
Desi											
CDC Consul	13	111	108	4.0	46	53	M	299	P	LT	no
CDC Cory	12	112	106	4.3	47	56	M	268	A/P	T	yes

[1] Area 1: Brown soil zone; Area 2: Dark Brown soil zone; see map on page 2.
[2] Ascochyta Blight at pod filling period: 0-9 scale; 0 = no symptom; 9 = plants are completely blighted. Scores 4-6 are considered intermediate resistance (I).
[3] Seed shape: Ro = Round; RH = Ram-head; P = plump; A = angular.
[4] Seed or seed coat colour: B = beige; LT = light tan; T = tan.

ADDITIONAL INFORMATION

Please refer to the *SaskSeed 2021* guide for pedigreed seed availability. For more details on production, consult the *Pulse Production Manual* published by the Saskatchewan Pulse Growers (*www.saskpulse.com*).

Field Pea

Main Characteristics of Varieties

Variety	Years Tested[1]	Yield (%) 1, 2 & South 3	Yield (%) North 3 & 4	Yield (%) Irrigation	Protein	Relative Maturity	Lodging[2] (1-9)	Vine Length (cm)	Resistance To MB[3]	Resistance To Powdery Mildew	Resistance To Fusarium Wilt	Resistance To SCB[4]	Resistance To Bleaching	Resistance To SCD[5]	Resistance To Greenness[6]	Seed Weight (g/1000)
Yellow	---- Relative to CDC Amarillo -----															
CDC Amarillo	12	100	100	100	23.0	M	3.5	85	4.5	R	MR	F	n/a	F	G	230
Abarth	7	93	90	92	-0.1	E	3.5	75	5.0	R	I	F	n/a	G	G	280
AAC Aberdeen ✪	3	107	103	---	-1.1	M	3.5	85	4.5	R	I	F	n/a	F	G	250
AAC Ardill	10	102	99	91	-1.5	M	3.5	85	4.5	R	MR	G	n/a	G	G	230
AAC Asher §	4	103	100	---	-0.5	M	4.5	75	4.5	R	I		n/a	F	G	260
CDC Athabasca	7	93	97	---	0.5	M	3.0	85	4.5	R	I	F	n/a	F	G	300
CDC Canary	8	98	98	----	0.1	E	3.5	85	4.5	R	I	G	n/a	F	F	230
AAC Carver	7	102	100	---	-1.3	E	4.0	85	5.0	R	I	G	n/a	F	G	240
AAC Chrome	6	105	101	---	-1.0	M	4.5	75	4.5	R	I	G	n/a	G	G	240
AAC Delhi	4	103	98	---	0.7	M	4.5	80	5.0	R	I		n/a	F	F	290
CDC Golden	10	92	83	90	0.7	E	4.5	75	5.0	R	I	G	n/a	G	G	230
CDC Inca	9	104	99	104	-0.6	M	4.0	85	4.5	R	I	G	n/a	G	F	230
AAC Lacombe	8	96	100	101	-0.7	M	3.5	85	5.0	R	I	F	n/a	F	F	250
CDC Lewochko	7	102	103	---	0.9	M	3.5	90	4.5	R	I	G	n/a	G	G	230
CDC Meadow	12	93	90	91	-0.5	E	4.0	85	5.0	R	I	G	n/a	G	G	220
AAC Profit ✪	4	100	108	---	0.8	M	4.5	90	4.5	R	I	G	n/a	G	G	230
CDC Saffron	12	98	92	93	-0.3	E	4.0	80	4.5	R	I	G	n/a	F	G	250
CDC Spectrum	9	104	101	---	0.7	M	3.5	85	4.5	R	I	G	n/a	G	F	240
Green																
Blueman	5	90	89	---	0.5	M	4.5	85	4.5	R	I	---	F	F	n/a	220
AAC Comfort	6	93	97	---	-0.4	M	4.5	85	4.5	R	I	G	F	G	n/a	250
CDC Forest	8	100	101	---	0.0	M	4.0	85	4.5	R	I	G	G	G	n/a	230
CDC Greenwater	11	99	93	89	-0.9	M	3.5	90	4.0	R	MR	F	G	F	n/a	230
CDC Limerick	12	96	90	91	2.9	M	3.5	85	4.0	R	I	G	G	G	n/a	210
CDC Raezer	12	82	80	95	-0.1	E	3.5	85	5.0	R	MR	G	G	G	n/a	220
CDC Spruce	10	95	98	---	0.3	M	4.0	85	4.5	R	I	F	G	F	n/a	240
CDC Striker	12	82	81	84	1.9	M	3.5	80	4.5	S	MR	VG	G	G	n/a	240
Red																
Redbat 8	6	92	85	---	1.0	M	5.0	85	5.0	R	---	G	n/a	G	n/a	200
Redbat 88	5	91	92	---	0.3	M	4.5	90	4.5	R	---	G	n/a	G	n/a	190
Maple																
CDC Acer	3	84	73	---	na	M	6.5	60	5.0	R	---	G	n/a	VG	n/a	170
CDC Blazer	5	99	98	---	1.9	M	5.0	80	5.0	R	---	G	n/a	VG	n/a	190
AAC Liscard	7	89	89	---	-0.8	M	4.0	85	5.0	R	---	G	n/a	VG	n/a	200
CDC Mosaic	4	81	74	58	na	M	4.0	85	4.5	R	---	G	n/a	VG	n/a	180
Dun																
CDC Dakota	11	100	98	95	1.7	M	3.5	85	4.5	R	---	G	n/a	VG	n/a	205
Forage[7]																
CDC Horizon	4	88	78	63	2.2	M	4.0	100	4.5	R	---	G	n/a	G	G	170
DL Delicious VUA	2	67	56	---	1.4	L	7.5	110	5.0	S	---	G	n/a	F	n/a	200
DL Goldeye ✪ VUA	2	72	66	---	1.8	L	8.0	115	5.0	S	---	G	n/a	F	G	145
CDC Jasper	4	80	81	---	2.0	M	4.5	105	4.5	R	---	G	n/a	G	G	180
DL Lacross ✪	2	83	75	---	0.4	M	7.0	110	5.0	S	---	G	n/a	F	F	170

[1] Co-op and regional trials in Saskatchewan.
[2] Lodging score (1-9) where 1 = completely upright, 9 = completely lodged.
[3] Mycosphaerella blight score (1-9) 1=no disease, 9=completely blighted.
[4] Seed Coat Breakage.
[5] Seed Coat Dimpling: VG = 0-5 per cent; G = 6-20 per cent; F = 21-50 per cent.
[6] Greenness: Good = 0-15 per cent; Fair = 16-40 per cent.
[7] Forage dry matter biomass, as % of check **40-10** (100), **CDC Jasper** (111), **CDC Horizon** (108).

Field Pea (cont'd)

Main Characteristics of Varieties

ADDITIONAL INFORMATION

For detailed production information, consult *www.saskpulse.com/growing-pulses*. The relative maturity of the check variety **CDC Amarillo** is M (Medium), which is on average, 95 days from seeding to swathing ripeness.

Types of Peas Grown in Saskatchewan

Yellow peas are the most widely grown peas in Saskatchewan, followed by green peas and then specialty types such as dun, maple, marrowfat and forage peas. Most varieties have white flowers and are suitable for human consumption or livestock feed markets. Nearly all varieties have a semi-leafless leaf type with tendrils instead of leaflets, which help provide better standability.

Marrowfat varieties have large, blocky, green seeds and are used in specialty snack food markets in Asia. They have white flowers and non-pigmented seed coats.

Forage peas are grown for biomass, typically in mixture with barley, oat or triticale, which on average produce four to five tonnes per acre of forage dry matter, similar to that of forage barley, but with greater protein concentration.

Red peas have red cotyledons. Market development is still underway.

Maple peas have purple flowers, pigmented seed coats with mottled pattern and yellow cotyledons. They are sold as whole seeds mixed with millets and other seeds into domestic bird seed markets internationally. The pigmented seed coats provide natural protection to various root rot diseases and so are typically quick to emerge with good stand establishment.

Dun peas have purple flowers, pigmented seed coats (without a mottled pattern) and yellow cotyledons. They are dehulled and sold in human consumption markets similar to yellow pea varieties. The pigmented seed coats provide natural protection to various root rot diseases and so are typically quick to emerge with good stand establishment.

The following varieties have purple flower colour and pigmented seed coats: **CDC Acer**, **CDC Blazer**, **AAC Liscard**, **CDC Mosaic**, **CDC Dakota** and **DL Delicious**. **CDC Acer**, **CDC Blazer** and **CDC Mosaic** have a maple patterned seed coat, **AAC Liscard** and **DL Delicious** have a speckled seed coat, while **CDC Dakota** has a solid dun (tan) coloured seed coat. All other varieties have white flower colour and non-pigmented seed coats. ` has normal leaf type; all other varieties have semileafless leaf type.

Lodging: How Ratings are Determined and What They Mean

Lodging ratings provide an indication of the average standability of a particular variety over years and locations. Lodging at any given location can vary from what is stated in the guide, as lodging severity is typically greater under high-yielding conditions and in situations with high winds. Lodging scores are based on visual ratings with a nine-point scale where one equals completely upright and nine equals completely lodged. Ratings are conducted near the time of crop maturity.

Seed Coat Breakage

Seed coat breakage ratings are based on an abrasive test. This rating is a test of durability of the seed coat and is not a measure of seed coat thickness.

Greenness in Yellow Peas

Yellow peas are visually rated for green colouring after harvest by an experienced person. Ratings are expressed as a percentage of the seeds in a sample that have obvious green tinge to the whole seed. The green colouring may be contained within the seed coat and/or cotyledons. Typically, a rating of Fair (F) means the variety averaged 16 to 40 per cent seeds with green colour, whereas a rating of Good (G) would have zero to 15 per cent green-tinged seeds. Greenness may be impacted by genetics, environmental conditions and harvest dates. A later-maturing variety may show more greenness in the seed sample due to less-mature seed if harvested on the same date as an earlier-maturing variety. The impact of greenness is visual and does not affect germination, but could affect grade. The Canadian Grain Commission has colour as one of the grading factors for peas, with "good natural colour" required for top grades. Too much green colouring could downgrade the sample due to a "fair colour" rating.

Seed Coat Dimpling

Seed coat dimpling refers to tiny depressions that give the seed a golfball-like appearance. Seed coat dimpling is a result of genetics and environment. Some varieties are more prone to dimpling than others. Dimpling can be found in other pulse crops, in addition to peas. It appears to be more prevalent when cool temperatures occur during seed fill. Seed coat dimpling is a measure of the percentage of seed from a harvested sample that shows dimpling. Typically, Very Good (VG) ratings have between zero and five per cent of seeds dimpled, Good (G) between six and 20 per cent and Fair (F) between 21 and 50 per cent. Buyers prefer a smooth surface to peas and grading may be impacted. Shrivelled seed is a grading factor under the Canadian Grain Commission and includes seeds that have a severely dimpled surface.

Bleaching in Green Peas

Green peas are marketed for their uniform green cotyledon colour. The main pigment responsible for the green colour is chlorophyll. Under certain conditions the chlorophyll is degraded by enzymes, which results in a lightening of the green colour, which is considered bleaching. Under complete degradation of chlorophyll, the seed becomes yellow.

Soybean (Herbicide-Tolerant)

Main Characteristics of Varieties

Variety	Canadian Marketing Agent	Company Maturity Grouping[1]	Type[2]	Hilum Colour[3]	Years Tested	Yield[4] (%) South	Yield[4] (%) North	Days to Maturity[5]
						------- Relative to TH 33003R2Y -------		
TH 33003R2Y	Thunder Seeds	00.3	RR2	BR	6	100	100	0
23-60RY	Bayer CropScience	00.2	RR2	BL	3	103	102	0
Akras R2	Elite BrettYoung	00.3	RR2	IBL	6	107	108	2
Amirani R2 ✪	Elite BrettYoung	000.5	RR2	IY	2	---	90	-7
B00071RX	Brevant Seeds (Corteva)	000.7	RR2X	TN	2	---	81	-11
B0011RX	Brevant Seeds (Corteva)	00.1	RR2X	TN	2	---	88	-4
B0030L1	Brevant Seeds (Corteva)	00.3	RR2Y	BR	2	88	66	1
B0040L1	Brevant Seeds (Corteva)	00.4	RR2Y	BR	2	103	---	3
Devo R2X	Prograin	00.2	RR2X	BR	3	92	90	-3
DKB0005-44	Bayer CropScience	000.5	RR2X	BL	3	97	97	-5
DKB0009-89	Bayer CropScience	000.9	RR2X	BL	3	99	93	-1
DKB003-29	Bayer CropScience	00.3	RR2X	BL	3	96	96	1
Fisher R2X	SeCan	000.9	R2X	BL	3	92	80	0
Fresco R2X	Prograin	000.7	RR2X	BL	2	---	93	-4
Hart R2X	SeCan	00.4	R2X	BL	2	104	---	1
Mahony R2	SeCan	00.3	RR2	BL	6	104	104	1
Nocoma R2	Elite BrettYoung	000.8	RR2	IBL	3	92	93	-5
NSC Newton RR2X	NorthStar Genetics	00.3	RR2X	BR	3	86	84	1
NSC Redvers RR2X	NorthStar Genetics	00.2	RR2X	BL	3	94	89	-1
NSC Watson RR2Y	NorthStar Genetics	000.8	RR2Y	IY	6	96	97	-6
NSC Wynyard RR2X	NorthStar Genetics	000.5	RR2X	BL	2	---	91	-7
P0007A73X	Pioneer (Corteva)	000.7	RR2X	BR	2	---	75	-10
P001A48X	Pioneer (Corteva)	00.1	RR2X	TN	2	---	97	-1
P003A97X	Pioneer (Corteva)	00.3	RR2X	G	2	90	---	1
P005A27X	Pioneer (Corteva)	00.5	RR2X	BR	3	91	108	1
P005A83X	Pioneer (Corteva)	00.5	RR2X	BL	2	100	---	0
Prince R2X	SeCan	00.1	R2X	BL	3	95	91	-1
PV 15s0009 R2X	Nutrien (Proven Seeds)	000.9	RR2X	BL	3	97	93	-1
PV 16s004 R2X	Nutrien (Proven Seeds)	00.4	RR2X	BL	3	94	92	1
Renuka R2X	Elite BrettYoung	00.3	RR2X	LBR	2	103	---	0
RX000918	Winfield United	000.9	RR2X	BL	3	93	91	-1
S0009-M2	Syngenta	000.9	RR2Y	IMY	6	97	102	-6
S003-Z4X	Syngenta	00.3	RR2X	BF	2	105	---	-2
S007-Y4	Syngenta	00.7	RR2Y	IMY	7	108	106	0
SI 001XTN	Sevita International	00.1	RR2X	black	3	97	97	-2
Sunna R2X	Elite BrettYoung	00.3	RR2X	G	3	103	101	0
TH 32004R2Y	Thunder Seeds	00.4	RR2	BL	4	105	102	1
TH 87003 R2X	Thunder Seeds	00.3	RR2X	BL	3	95	98	0
Torro R2	Prograin	00.1	RR2Y	BL	4	89	94	-2

[1] Maturity Groups are assigned by individual companies to assist growers select varieties suitable for their area; growers should not rely on only one source of information for judging maturity.

[2] All varieties in this table are Roundup Ready or Roundup Ready Xtend type.RR2/RR2Y indicates Genuity® Roundup Ready 2 Yield® soybean variety; R2X/RR2X indicates Roundup Ready 2 Xtend® soybean variety. RR1 indicates Roundup Ready 1 technology. Other varieties are commercially available. For complete list of commercial varieties see *Seed Manitoba 2019* (*www.seedmb.ca*).

[3] Hilum is the point where seed attaches to the pod. BR-Brown, Y-Yellow, IY-Imperfect Yellow, IB-Imperfect Black, BL-Black, GR-Grey, TN-Tan.

[4] Six year mean yield of the check variety **TH 33003R2Y** was 41 bu/ac: 29 bu/ac in 2020, 29 bu/ac in 2019, 36 bu/ac in 2018; 46 bu/ac in 2017: 45 bu/ac in 2016 and 51 bu/ac in 2015. Typical on-farm yields are 25-38 bu/ac.

[5] Days to maturity indicates days from seeding to 95 per cent mature pods. Only sites which reached maturity prior to a killing frost were used for calculating days to maturity. However due to the early killing frost of all trials in 2020, estimated days to maturity for most trials was not determined. From past experience, moist growing seasons result in delayed maturity. Data is from Saskatchewan sites from 2016 - 2020 (not all varieties entered into trial each year). Days to maturity for **TH 33003R2Y** is +/- 118 days.

Soybean (Conventional)

Main Characteristics of Varieties

Variety	Canadian Marketing Agent	Company Maturity Grouping[1]	Type[2]	Hilum Colour[3]	Years Tested	Yield[4] (%)	Days to Maturity
						------- Relative to OAC Prudence -------	
OAC Prudence	SeCan	00.3	Con	Y	3	100	0
TH 33003R2Y	Thunder Seeds	000.8	HT check	---	6	101	0
NSC Watson RR2Y	NorthStar Genetics	00.3	HT check	---	6	106	-7
AAC Edward	SeCan	00.4	Con	Y	3	112	-5
AAC Halli	Interlake.org Inc.	000.9	Con	Y	1	101	0
Liska	Prograin	00.6	Con	IY	2	98	3
Maxus	Prograin	00.3	Con	IY	3	94	0
Maya ✪	Prograin	00.8	Con	IY	2	84	5
PR130167Z1-02	Prograin	00.3	Con	BR	1	96	2
Siberia	Prograin	00.2	Con	IY	3	111	-1

[1] Maturity Groups are assigned by individual companies to assist growers select varieties suitable for their area; growers should not rely on only one source of information for judging maturity. See page VR10 for more information.

[2] Varieties tested in this trial are conventional (con) soybean varieties and do not have tolerance to glyphosate. Two glyphosate tolerant varieties are included as check varieties only.

[3] Hilum is the point where seed attaches to the pod. Y-Yellow, IY-Imperfect Yellow, CLR-Clear.

[4] Mean yield of the check variety **OAC Prudence** in 2020 was 29 bu/ac. Typical on-farm yields are 25-38 bu/ac.

ADDITIONAL INFORMATION

The soybean variety trial is coordinated by Saskatchewan Pulse Growers. Typical on-farm yields are 25 to 38 bu/ac. Soybean is not native to the Canadian Prairies and must be inoculated with soybean inoculant that contains *Bradyrhizobium japonicum* bacteria.

Soybean Seeding Tips

Calculate soybean seeding rates based on number of seeds per acre. Soybeans are sold by units of 140,000 seeds.

To obtain the desired plant stand, be aware that increased seed coat damage can occur with soybeans when seeded with drills versus planters.

Higher seeding rates with drills can assist with reaching target plant populations.

Soybeans require warm soils (10 C) for optimum germination and emergence.

Trash management to encourage some blackening of the soil can be advantageous to speed soil warming.

Soybeans are sensitive to late spring frosts once the growing point is above ground.

Delay seeding until at least May 10 or later if conditions remain cool. Soybeans are sensitive to cold water at the time of germination.

Seed when there is a warming trend in the forecast and a low risk of cold rainwater until after soybeans have germinated.

Soybeans are susceptible to several seed and seedling diseases, so seed treatments should be considered.

Soybeans are prone to iron chlorosis, particularly when grown on saturated soils, soils high in calcium carbonates or on soils with salinity problems. Choose your fields and soybean varieties accordingly.

The maximum amount of phosphate plus potassium fertilizer that can be safely placed with the seed is 20 lbs./ac. Amounts higher than 20 lbs./ac should be banded.

Pre-emergence herbicides should be considered as part of the weed control program. Soybeans are poor competitors with weeds, so keeping soybean fields free of weeds from emergence through early growth may enhance yield.

Inoculants and Nitrogen Fixation with Pulses and Soybeans

Inoculants contain the nitrogen-fixing *Rhizobium* species necessary to ensure nodulation and nitrogen fixation. *Rhizobium* species are specific to each pulse crop. Pea, lentil and faba bean inoculants contain the same *Rhizobium* species, but the individual strain of that species (similar to varieties of crops) may be more effective on one crop or another. Make sure to use the right inoculant for each crop.

Handling Inoculants

Inoculants are products that contain living organisms and should be handled accordingly. Avoid exposure to direct sunlight, heat or freeze-thaw conditions. Consider application method when using in combination with seed treatments, as fungicides can impact *Rhizobia* survival. For best results, apply seed treatments first, allow the seed to dry, then apply the inoculant if using seed-applied products (sequential application). Read inoculant and seed treatment labels for more information on seed compatibility.

Inoculant formulations consist of seed-applied technologies such as liquids, peats and powders, as well as granular formulations. Single inoculant applications are effective for peas, lentils, chickpeas and faba beans. For soybeans, it is recommended to use a double inoculation strategy such as a seed-applied product in combination with a granular formation, on land where soybeans are being grown for the first time. To date, no benefit of double inoculation on other pulse crops has been identified.

Peas, Lentils, Faba Beans	*Rhizobium leguminosarum*
Chickpeas	*Rhizobium ciceri*
Dry Beans	*Rhizobium phaseoli*
Soybeans	*Bradyrhizobium japonicum*

Faba Bean

Main Characteristics of Varieties

Variety	Years Tested	Low Vicine/Convicine	Yield (% CDC Fatima)	Height (cm)	Lodging[1] (1-9)	Maturity (days)	Seed Weight (g/1000)
Coloured Flower (normal tannin)							
Fabelle ✪	8	Yes	100	104	2.4	105	533
Taboar	5	No	91	110	3.7	107	480
FB9-4	9	No	87	95	3.7	104	680
CDC SSNS-1	10	No	86	109	3.4	105	335
186S-11	6	No	101	105	3.1	106	749
247-13 §	4	No	102	103	3.4	106	620
Vertigo ✪	4	No	105	107	3.0	106	571
White Flower (low tannin)							
Snowbird	14	No	100	95	3.0	104	448
Imposa	4	No	105	99	2.4	107	695
CDC Snowdrop	9	No	89	97	2.8	104	325
Tabasco	5	No	96	93	1.9	106	496
DL Rico ✪	4	Yes	84	107	3.5	109	566
DL Tesoro ✪ VUA	5	No	103	90	3.8	110	511
219-16	9	No	102	94	3.6	106	328

[1] Lodging score (1-9) where 1 = completely upright, 9 = completely lodged.

ADDITIONAL INFORMATION

Faba bean regional trials began in 2006 to accommodate growing interest in this crop as a nitrogen-fixing high protein food and feed grain in moist areas. White-flowered types are zero tannin. All coloured flower types have seed coats that contain tannins and may be suitable for export food markets if seed size and quality match customer demand. Maturity ratings are based on days until swathing maturity but will vary depending on seeding date . Low vicine white flower types have expanding demand in the plant-based protein extraction industry.

Plant breeders in the faba bean industry are moving rapidly to risk elimination of the antinutritional compounds vicine and convicine (vc) through the introduction of a gene in new varieties that reduces vc by 99 per cent. Vicine-convicine causes rapid onset of anemia in a small percentage of the human population. Low vc status may become mandatory as soon as possible for faba beans that enter food and feed systems.

Faba bean is a partly outcrossing (four to 84 per cent under local conditions) through insect pollination (various bee species). Isolation from other varieties is necessary to maintain varietal purity, especially for flower colour and, most importantly, for maintaining low vc status in future. For seed production, isolations of two km or more are recommended at this time to maintain variety purity for low vc status and flower colour. Commercial producers who intend to save their seed should follow similar isolation practices.

Seeding Tips for Faba Bean

Calculate seeding rates based on actual thousand kernel weight of your seed as seed size of faba beans can vary tremendously from lot to lot.

Tannin and zero-tannin faba bean types should be separated by up to 500 m to prevent cross pollination.

Faba beans have a high requirement for phosphorus (P) and can tolerate up to 40 lbs/ac of seed-placed phosphorus (P_2O_5).

Seed as early as possible as faba beans have good tolerance to spring frosts and are later maturing. Seed into moisture, as the large seeds require adequate moisture to germinate.

Use seed treatment with low tannin types of faba beans.

Seeding large-seeded faba beans can be difficult due to plugging and growers may experience difficulty reaching the targeted seeding rates. A study conducted by the Prairie Agricultural Machinery Institute has identified the following tips and tricks for seeding large-seed faba beans:

- To reach high seeding rates, consider metering from multiple tanks or changing augers/rollers.

To minimize plugging:

- Slow down.
- Increase clearance from metering rollers or augers to the metering housings.
- Ensure there are no tight radiuses or sags in the distribution hoses.
- Eliminate flow obstructions, such as screws, in the distribution hoses.
- Ensure hose clamps are not overtightened, resulting in hose restrictions.
- Use openers with large-diametre seed openings and minimal change in seed flow direction or seed tube shape.
- Avoid sharp turns with the drill.

Dry Bean

Main Characteristics of Varieties

Variety	Years Tested[1]	Yield --- (% CDC Blackstrap) --- Irrigation	Yield --- (% CDC Blackstrap) --- Dryland	Days to Flower	Maturity Rating[2]	% Pod Clearance[3]	Seed Weight (g/1000)	Growth Habit[4]
Black								
CDC Blackstrap	9	100	100	53	M	85	195	II
CDC Jet	8	94	87	58	L	85	170	II
CDC Superjet	7	98	92	58	L	85	170	II
Pinto								
CDC Pintium §	9	82	85	50	E	85	350	I
Island	7	101	98	55	M	79	355	II
Medicine Hat	5	107	99	58	M	72	360	II
CDC WM-2	7	93	87	52	M	79	365	II
CDC WM-3 ✪	2	89	83	52	M	78	360	II
Navy								
Bolt	6	88	88	58	L	82	190	II
Portage	7	84	81	52	M	85	175	II
OAC Spark	4	74	88	55	L	81	163	I
AAC Shock	3	86	96	51	M	89	186	II
Small Red								
AC Redbond	3	98	82	51	M	65	290	II
flor de junio								
CDC Ray	5	113	107	56	L	70	300	III
Yellow								
CDC Sol §	7	91	87	55	L	78	399	I

[1] Co-op and regional trials grown in narrow rows. Since 2002 **CDC Pintium** had been the check variety. In 2019 **CDC Blackstrap** became the new check. Lines that did not have sufficient direct comparison data to **CDC Blackstrap** were adjusted based on relative performance to **CDC Pintium**.
[2] Maturity ratings based on E = 100 days; L = 110 days for May 20 planting to swathing maturity. See page 2 for more information.
[3] Pod clearance: percentage of pods that completely clear the cutterbar at time of swathing (~4 cm).
[4] Growth habit: I = Determinate bush; II = Indeterminate bush; III = Indeterminate vine.

ADDITIONAL INFORMATION

Dry bean production in Saskatchewan is challenging and growers are reminded that growing varieties that have not been tested in Saskatchewan comes with high risk. Only varieties tested in the Saskatchewan Variety trials have been shown to be adapted to Saskatchewan conditions. Other varieties may not be adapted to Saskatchewan due to sensitivity to long daylength, cool spring and fall temperatures and the short growing season. Days to maturity is critical. Early fall frost can severely affects yield and quality.

Dry beans are highly susceptible to diseases such as bacterial blight and bacterial wilt. These diseases are highly seed borne, therefore, dry beans should only be produced from seed that is tested and shown to be disease free.

Dry beans may not be eligible for crop insurance in your area. Contact your local Saskatchewan Crop Insurance Corporation (SCIC) office regarding insurance options on dry beans.

OILSEED CROPS

Flax

Main Characteristics of Varieties

Variety	Years Tested	Yield[1] (% CDC Bethune) Areas 1 & 2	Area 3 South	Area 3 North & 4	Irrigation	Relative Maturity[2]	Seed Size[3]	Resistance To Lodging	Powdery Mildew[4]	Fusarium Wilt[4]
Brown Seed										
CDC Bethune	13	100	100	100	100	L	M	G	MR	MR
AAC Bravo	5	103	101	99	93	L	L	G	MR	MR
CDC Buryu	5	97	105	100	88	L	M	G	MR	MR
CDC Glas	9	107	102	105	98	L	M	VG	MR	MR
AAC Marvelous	4	101	107	106	101	L	M	G	MR	MR
CDC Neela	5	105	98	99	92	L	M	G	MR	MR
CDC Plava	5	99	103	99	90	M	M	G	---	MR
Prairie Grande	3	90	93	93	94	M	M	VG	MR	MR
Prairie Sapphire	6	103	93	97	93	L	M	G	MR	MR
AAC Prairie Sunshine	3	102	99	103	---	L	M	G	---	---
Prairie Thunder	3	93	99	97	99	M	M	VG	MR	R
CDC Rowland	4	108	109	108	102	L	L	G	MR	MR
CDC Sanctuary	5	103	91	94	95	L	M	F	MR	MR
CDC Sorrel	4	96	93	97	96	L	L	G	MR	MR
Topaz	5	98	109	102	93	L	M	G	MR	MR
WestLin 60	5	95	95	94	88	M	M	G	---	MR
WestLin 71	5	99	99	98	92	L	S	VG	MR	MR
WestLin 72	5	101	105	103	95	L	S	VG	MR	MR
Yellow Seed										
AAC Bright	3	98	91	95	---	L	M	G	MR	MR
CDC Dorado	3	91	93	92	---	M	M	G	MR	MR
VT50 (NuLin 50)	5	100	102	99	93	L	S	VG	---	MR

[1] Data from Regional and Co-op yield trials.
[2] Relative maturity: The relative maturity of the check, **CDC Bethune**, is L (on average 101 days from seeding to swathing ripeness).
[3] Seed size: S = Small, M = Medium, L = Large.
[4] Disease Resistance Scale: MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant.

ADDITIONAL INFORMATION

Flax was last tested in 2020. All cultivar descriptions other than yield are based on data from the Linseed Co-operative Tests. All cultivars are immune to rust. Frozen flax should be analyzed by a feed-testing laboratory to determine if it is free of prussic acid before using it as a livestock feed.

Varieties of all crop types included in the tables of the *Varieties of Grain Crops* in the *SaskSeed Guide* are reflective of current varieties in the marketplace that have been tested in our trials. A comprehensive database of all registered varieties for each crop kind requiring variety registration can be found at *www.inspection.gc.ca*.

Camelina

Camelina, also known as false flax, is a short-season crucifer oilseed that can be grown on a wide range of soil types. It is well adapted to dryland conditions and does not tolerate excessive soil moisture. Camelina seed is fairly small (1.0 – 1.8 g/1000 seed) and requires shallow seeding. Reduced emergence may be expected when camelina is seeded deeper than a half inch. Camelina plants are resistant to blackleg disease and flea beetles and possess good shatter resistance. Camelina may be straight-combined at full maturity or swathed when pods have turned color from green to yellow. Camelina is grown almost exclusively under contract; both camelina oil and meal are marketed for food, feed and industrial applications. Crop insurance is available for camelina crops grown in Saskatchewan. For more information on camelina, consult the Ministry of Agriculture publication, *Camelina*.

SES0787LS (tradename: **Cypress**) is a spring-type camelina cultivar that combines high seed yield, high seed oil content, resistance to downy mildew, improved shatter resistance as well as improved seed size (on average 30 per cent and up to 50 per cent larger than seed of **MIDAS™** camelina). Its natural height is medium to tall (on average 84 cm); it flowers after about 46 days and generally reaches maturity, depending on the weather conditions, 85 – 105 days after seeding. In trials (CV < 15 per cent) conducted from 2015 to 2020 on the Canadian Prairies, **SES0787LS** yielded on average 42 bu/ac. Expected yields in Saskatchewan are 35 – 40 bu/ac on fallow and 25 to 35 bu/ac on stubble.

Mustard

Main Characteristics of Varieties

Type and Variety	Yield[1]	Plant Height (cm)	Hydroxylbenzyl Glucosinolate (µmol/g seed)	Allyl Glucosinolate (mg/g seed)	Mucilage[2] (cS*ml/g seed)	Resistance to White Rust[3] 2a	2v	Fixed Oil (% seed)	Protein (% Seed)	Seed Weight (g/1000)	Maturity (days)
Open-Pollinated Yellow (% Andante)											
Andante[4]	100	102	145	n/a	55.7	R	R	28.4	35.1	6.0	93
AAC Adagio[5]	102	+1	-6	n/a	41.1	R	R	+1.7	-2.1	-0.9	+1
AAC Yellow 80[6]	109	+26	-4	n/a	23.2	R	R	+1.4	-0.8	-0.5	-1
AC Pennant[4]	99	-6	+3	n/a	-11	R	R	+1.1	-0.8	-0.3	-1
Open-Pollinated Brown (% Centennial Brown)											
Centennial Brown[4]	100	117	n/a	10.4	n/a	S	S	36.3	30.1	3.1	92
Amigo[7]	93	-8	n/a	+3.5	n/a	R	S	-2.1	+0.6	-0.4	+6
AAC Brown 120[8]	112	+8	n/a	+1.6	n/a	R	R	+1	-0.3	+0.6	+2
Hybrid Brown (% Centennial Brown)											
AAC Brown18[9]	119	+4	n/a	-0.5	n/a	R	S	+2.1	-1.5	-0.1	+1
Open-Pollinated Oriental (% Cutlass)											
Cutlass[4]	100	115	n/a	11.6	n/a	R	S	41.0	29.1	2.8	91
Forge[4]	97	+10	n/a	+0.6	n/a	S	S	-2.1	+0.5	-0.2	+1
AAC Oriental 200[8]	106	+9	n/a	+0.1	n/a	R	S	-4.0	+0.9	-0.1	+1
AC Vulcan[4]	98	+1	n/a	+0.8	n/a	R	S	-0.4	+0.4	+0.1	0

[1] Yield data not collected by area.
[2] Mucilage in yellow mustard is a measurement of viscosity of aqueous extracts from seed.
[3] Varieties are rated S (Susceptible) or R (Resistant) to White Rust strains.
[4] Data from 1999-2012 Co-operative Mustard Test. Yield per cent of check: 124 station years for yellow mustard and 117 station years for brown and oriental mustard.
[5] Data from 2009-2012 Co-operative Mustard Test (29 station years).
[6] Data from 2019 Co-operative Mustard Test (11 station years).
[7] Data from 2008-2010 Co-operative Mustard Test (21 station years).
[8] Data from 2016-2018 Co-operative Mustard Test (22 station years).
[9] Data from 2017-2018 Co-operative Mustard Test (14 station years).

ADDITIONAL INFORMATION

Three types of mustard are grown in western Canada: yellow (*Sinapis alba*) and brown and oriental (*Brassica juncea*). Mustard is typically grown under contract, where the contractor specifies the variety to be grown to meet industry specifications for product quality. All mustard varieties have good resistance to blackleg disease and mature, on average, in 91 to 98 days.

A unique feature of yellow mustard is high mucilage content. Mucilage is valued by the mustard industry as a stabilizer in prepared food products.

Brown mustard is grown primarily for the Dijon mustard market. **AAC Brown 120** and **AAC Brown 18** were registered in September 2017 and August 2018, respectively. **AAC Brown 120** is not available commercially. **AAC Brown 18** is a hybrid variety. Growers are required to buy new seed for the hybrid variety **AAC Brown 18** every year.

Canola (Small-Scale Straight Cut Trials)

Main Characteristics of Varieties

Variety[1] (*B. napus*)	Distributor	Overall Average[1] (16 locations)				Long Season Zone[1] (5 locations)				Mid Season Zone[1] (8 locations)				Short Season Zone[1] (3 locations)				Disease Toler-ance[3]
		Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	
Liberty Link																		
B3010M	Brevant	100	93	1.9	117	94	91	1.3	119	107	92	2.1	117	100	93	2.3	117	BL/CR
DKLL 82 SC	DEKALB	101	93	2.2	109	103	92	1.7	112	106	92	2.2	109	84	99	2.9	104	BL/CR
L233P	BASF - InVigor	110	91	2.0	112	112	90	1.6	112	111	90	2.2	112	104	98	2.4	117	BL/CR
L234PC	BASF - InVigor	102	92	2.1	112	101	90	1.8	112	106	91	2.2	112	94	99	2.3	117	BL/CR
L255PC	BASF - InVigor	110	95	1.5	117	107	93	1.2	117	114	94	1.7	114	106	101	1.7	122	BL/CR
L345PC	BASF - InVigor	110	92	2.3	119	113	91	1.7	119	106	98	2.4	109	111	93	3.3	117	BL/CR
LSD(%)[4]		*10*				*8*				*12*				*8*				
Roundup Ready																		
45CM39[5]	Pioneer Hi-Bred	100	94	2.3	114	100	93	1.9	114	100	93	2.4	112	100	101	2.4	114	BL/CR
6090 RR	BrettYoung	89	95	2.1	127	85	94	1.5	130	88	94	2.3	125	101	100	2.7	119	BL/CR
75-65 RR	DEKALB	99	92	2.5	112	96	90	2.1	112	101	91	2.6	114	99	98	2.8	112	BL
LSD(%)[4]		*11*				*9*				*13*				*7*				
TruFlex																		
CS2600 CR-T	CANTERRA SEEDS	102	92	3.0	112	98	90	2.6	112	104	92	3.0	112	102	99	3.8	109	BL/CR
DKTF 96 SC	DEKALB	104	93	1.7	112	101	93	1.3	114	109	92	1.9	112	97	99	2.0	109	BL
DKTFLL 21 SC[6]	DEKALB	105	92	2.5	109	103	92	2.0	109	109	91	2.6	109	96	99	2.8	109	BL
PV 760 TM	Proven Seeds	104	92	2.1	114	99	90	1.8	114	108	91	2.3	114	100	99	2.3	117	BL
PV 761 TM	Proven Seeds	104	94	1.9	125	103	93	1.4	122	106	93	2.1	125	100	100	2.0	122	BL
LSD (%)[4]		*11*				*9*				*13*				*7*				

[1] From Canola Performance Trials grown across Prairie provinces, 2020.
[2] Lodging is measured on the degree of lean to the lower stem of the plant on a 1 to 5 scale (1=erect, 5=flat).
[3] Indicates genetic disease resistance with an "R" or resistant rating to BL = Blackleg, CR = Clubroot and improved tolerance to sclerotinia "S", as based on variety descriptions submitted to CFIA.
[4] LSD = least significant difference (five per cent level) within herbicide system.
[5] Average yield (bu/ac) of the check **45CM39** for long season zone, mid-season zone and short-season zone in 2020 was 55, 54 and 65, respectively.
[6] Indicates varieties with glyphosate and glufosinate herbicide tolerance. Visit www.canolaperformancetrials.ca for more details.

CANOLA ADDITIONAL INFORMATION

Variety descriptions summarize the performance of varieties tested in the 2019 Canola Performance Trials. Data was provided by the Canola Performance Trials Committee. For more information visit, *www.canolaperformancetrials.ca*.

All varieties, except one, in the preceding tables have a resistant (R) rating for Blackleg. Lesions and yield loss can still occur, based on the level of inoculum and blackleg pathotype in the field, in combination with evironmental conditions conducive for disease development.

Clubroot is a long-lived disease in the soil that can impact canola performance. Using clubroot-resistant varietes early, before clubroot symptoms are seen or the pathogens are detected, is highly recommended as a risk mitigation tool. Soil testing is necessary to know for sure if fields have the clubroot pathogen present, which can give an early indication of risk prior to finding galls in the fields.

Least Significant Difference
When comparing average zone yields for varieties in the small plot data, the least significant difference is about 7 to 20 per cent. If variety A yielded 95 per cent of the check and variety B yielded 101 per cent of the check, they would be considered statistically the same. This is based on a confidence level that significant differences would occur by chance less than five per cent of the time. In the small plot design used, varieties were grouped by herbicide system, which means that the least significant difference shown strictly applies to comparisons between varieties of the same herbicide system.

More importantly, comparisons between varieties within the same herbicide system reveal only genetic differences, whereas variety comparisons between herbicide systems compare the net effect of both genetic and herbicide effects (weed control and crop tolerance).

Where can you get the Canola Performance Trial results?
Results are available through an online interactive tool at *www.canolaperformancetrials.ca*. The interactive tool allows growers to explore many agronomic factors and to search for trial data in specific geographic areas near their farming operations. Details on management, operations and environmental data for each individual site are reported online. The online tool has an economic calculator that includes the costs associated with growing the selected variety to assist growers in determining potential profitability. Data is also available in booklet form and will be distributed through various publications or can be obtained from a local agri-retailer.

Canola (Small-Scale Trials)

Main Characteristics of Varieties

Variety[1] (*B. napus*)	Distributor	Overall Average[1] (16 locations)				Long Season Zone[1] (5 locations)				Mid Season Zone[1] (8 locations)				Short Season Zone[1] (3 locations)				Disease Toler-ance[3]
		Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	Yld.	Mat. (days)	Ldg.[2] (1-5)	Ht. (cm)	
Liberty Link																		
L234PC	BASF - InVigor	100	92	2.3	112	106	89	1.9	112	99	92	2.6	112	95	99	2.2	117	BL/CR
L241C	BASF - InVigor	99	93	1.6	117	106	91	1.3	114	96	92	1.8	117	97	99	1.7	117	BL/CR
L352C	BASF - InVigor	108	96	2.3	119	117	94	1.8	122	103	95	2.4	122	104	101	2.9	117	BL/CR
P501L	Pioneer Hi-Bred	105	92	2.2	117	114	90	1.8	117	102	91	2.5	117	98	97	2.1	117	BL/CR
PV 680 LC	Proven Seeds	102	95	1.6	125	114	94	1.2	125	96	95	1.9	127	97	100	1.8	122	BL/CR
PV 681 LC	Proven Seeds	101	91	2.3	117	108	90	2.0	114	100	90	2.6	117	95	98	2.3	117	BL/CR
LSD(%)[4]		*10*				*12*				*11*				*7*				
Roundup Ready																		
1028RR[5]	Brevant	98	95	2.2	117	102	92	1.8	112	96	94	2.4	119	98	99	2.2	135	BL/CR
45CM39[6]	Pioneer Hi-Bred	100	95	2.5	117	100	92	2.3	117	100	94	2.6	117	100	101	2.7	114	BL/CR
45CS40	Pioneer Hi-Bred	102	93	2.1	127	109	91	1.8	122	99	92	2.2	132	98	98	2.1	130	BL/CR/S
45H37	Pioneer Hi-Bred	94	91	2.6	122	103	90	2.1	119	91	91	2.8	122	87	96	2.7	119	BL/CR
6076 CR	BrettYoung	95	96	2.3	125	96	94	1.8	122	93	95	2.6	125	99	102	2.5	125	BL/CR
CP20R3C	WinField United	97	97	1.8	127	102	96	1.6	125	92	97	2.0	130	102	103	1.8	130	BL/CR
CS2300	CANTERRA SEEDS	100	96	2.2	127	104	95	1.9	127	97	95	2.4	127	102	102	2.4	127	BL
D3155C	Brevant	95	94	2.6	127	101	92	2.0	119	91	93	2.8	130	98	99	3.1	135	BL/CR
LSD(%)[4]		*10*				*12*				*10*				*8*				
TruFlex																		
BY 6204TF	BrettYoung	101	94	2.2	122	107	93	1.8	117	99	93	2.3	122	98	100	2.3	125	BL/CR
DKTF 98 CR	DEKALB	101	93	2.6	112	102	90	2.1	107	99	92	2.8	117	103	100	3.1	109	BL/CR
LSD (%)[4]		*10*				*12*				*10*				*8*				
Clearfield																		
BY 5105CL	BrettYoung	---	---	---	---	94	89	2.1	125	97	89	2.4	122	---	---	---	---	BL/CR
P502CL	Pioneer Hi-Bred	---	---	---	---	102	87	2.2	119	96	87	2.7	117	---	---	---	---	BL
LSD (%)[4]						*20*				*19*								

[1] From Canola Performance Trials grown across Prairie provinces, 2020.
[2] Lodging is measured on the degree of lean to the lower stem of the plant on a 1 to 5 scale (1=erect, 5=flat).
[3] Indicates genetic disease resistance with an "R" or resistant rating to BL = Blackleg, CR = Clubroot and improved tolerance to sclerotinia "S", as based on variety descriptions submitted to CFIA.
[4] LSD = least significant difference (five per cent level) within herbicide system.
[5] Indicates varieites with specialty oil profiles and premiums associate with pricing. Visit www.canolaperformancetrials.ca for more details.
[6] Average yield (bu/ac) of the check **45CM39** for long season zone, mid season zone and short season zone in 2020 was 58, 57 and 59, respectively.

Sunflower

Main Characteristics of Hybrids

Hybrid	Herbicide Tolerance	Years Tested	Yield (% 63A21)	Average Maturity (days)	Harvest Moisture (%)
Oilseed EM (Early Maturing)					
63A21 §		9	100	109	18.6
Honeycomb NS[1]		5	114	105	13.6
AC Sierra		9	67	105	15.7
Oilseed (Late Maturing)					
Cobalt II	Clearfield ®	3	76	115	30.4
Talon	ExpressSun ®	2	92	113	30.1
8N 270 §	Clearfield ®	8	93	114	24.0

Varieties not appearing in this table will require more than 125 days to reach maturity

ADDITIONAL INFORMATION

Sunflower requires 105 to 125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black Soil Zones in southeastern Saskatchewan.

Harvest moisture is a good indication of how quickly these hybrids will be ready to combine in the field. The EM varieties are adapted to production in most areas of Saskatchewan. **AC Sierra** is open pollinated and not a hybrid.

The Saskatchewan Sunflower Committee has been conducting trials in Saskatchewan for the purpose of registration and demonstration since 1983. Sunflowers no longer require three years of yield testing to be sold in Saskatchewan. Saskatchewan Sunflower Committee will publish results from each year. For the complete data set, please email or call Sherri Roberts with Ministry of Agriculture at sherri.roberts@gov.sk.ca or 306-848-2856.

Understanding Clubroot Resistance and the Classification System

By Sask Canola

Growers farming in areas where clubroot has been detected, or if they are concerned about clubroot, the following management tips are recommended:

- Minimize soil movement by restricting the entry of vehicles that have not been sanitized, minimizing tillage and creating a separate exit as far as possible from the field entrance.
- Post multiple “no-trespassing” signs.
- Extend crop rotations to a minimum three to four year rotation, including at least a two-year break between susceptible crops, even when resistant varieties are utilized.
- Grow clubroot-resistant varieties early before clubroot symptoms are seen, or the pathogen is detected.
- Control volunteers and canola-related weeds throughout the rotation.
- Scout canola crops by examining the roots for the presence of swollen root tissue (galls). Focus on field entrances, low areas and suspicious patches.
- Consider DNA-based soil testing to help detect the pathogen, even when there are no visible symptoms or in fields that have other crops (wheat, barley, etc).

Clubroot-resistant canola varieties are key tools used to delay clubroot establishment and manage clubroot disease on the farm. However, to prevent rapid genetic shifts in clubroot populations and subsequent loss of effective resistance in clubroot-resistant varieties, this valuable resource must be used judiciously in an integrated management approach. An integrated approach includes practicing a diverse crop rotation — ideally three years between susceptible crops in infested areas — while effectively managing weeds, sanitizing equipment and minimizing soil movement. This approach allows for reduction of soil inoculum levels and minimizes the risk of selecting for clubroot pathotypes that can overcome current resistant (R) varieties.

Clubroot resistance in a variety should be substantiated through standard testing procedures outlined in the Western Canada Canola/Rapeseed Recommending Committee (WCC/RRC) guidelines and protocols. Varieties are compared to the susceptible check variety for clubroot infection and are assigned resistant (R), intermediate (I) or susceptible (S) ratings.

Resistant (R) ratings indicate less than 30 per cent infection compared to susceptible checks in disease tests. It is important to remember that **resistant (R) varieties are not immune**, but highly restrict the development of clubroot symptoms in fields with low to moderate disease pressure from resting spores in the soil. Under heavy pressure in severely infested fields, a resistant (R) variety can show significant root galling, but may develop fewer and smaller galls than a susceptible variety. Under these heavy pressure situations and frequent use of clubroot-resistant varieties, clubroot populations rapidly evolve to overcome the genetic resistance. **To delay this shift in clubroot strains and loss of clubroot-resistant variety efficacy, clubroot-resistant varieties should not be grown in short rotations.**

Intermediate (I) ratings indicate between 30 and 50 per cent infection compared to susceptible checks in disease tests. This rating will mainly be used for adding rating labels to the base resistant (R) label in multiple resistance gene varieties to specify moderate resistance against certain new strains. Varieties with additional intermediate (I) labels can provide marginally better disease protection on fields with presence of new corresponding strains, but should not be grown in fields where resistance to predominant strains has been widely defeated.

If there is no clubroot label on a variety, assume it is susceptible to clubroot. An extreme buildup of spores can occur very quickly when susceptible varieties are grown in short rotation on slightly infested fields. Susceptible varieties should not be grown in clubroot-infected fields, or those at higher risk of becoming infected.

A base (R) resistance label requires that the variety is resistant to the predominant clubroot strains or pathotypes in Western Canada. Additional ratings can be appended to the base (R) label to describe resistance to specific uncommon or new pathotypes. To date, no clubroot-resistant varieties, including new ones with multiple resistance genes, are resistant to all of the clubroot pathotypes detected in Western Canada.

Careful scouting in all host crops, including (R) rated canola crops, is extremely important to help detect early infestations. Waiting to use (R) varieties until significant infestations have developed will result in high soil spore loads and increase the probability for pathogen shifts, which can rapidly defeat variety resistance.

Visit *www.clubroot.ca* to learn more.

FORAGE CROPS

Annual Forages

Main Characteristics of Varieties

Variety[1,2]	Site Years	Days to Heading	Lodging Score (1-9)	Forage DM Yield (kg/ha)	Nutritional Data					
					CP (%)	ADF (%)	NDF (%)	TDN (%)	Ca (%)	P (%)
Barley										
CDC Austenson	8	59	1	8917	8.77	29.2	48.5	67.3	0.20	0.19
AB Advantage	8	58	2	9100	8.35	28.1	48.3	66.3	0.24	0.20
AB Cattelac	8	57	1	8731	8.62	28.0	48.2	68.2	0.24	0.19
CDC Copeland	8	60	1	8823	8.25	30.6	48.7	66.7	0.23	0.19
Statistically Significant P=0.05		Yes		No	No	No	Yes	Yes	Yes	No
Oat										
CDC Arborg	8	56	1	9536	9.17	33.2	52.4	63.1	0.19	0.20
CDC Haymaker	8	59	2	9875	8.96	35.8	57.6	60.4	0.20	0.18
CDC Baler	8	62	1	9648	8.63	35.9	58.4	60.3	0.21	0.18
Statistically Significant P=0.05		Yes		No	No	Yes	Yes	Yes	No	Yes
Wheat										
AAC Awesome VB	8	58	1	8652	8.18	30.8	50.9	65.1	0.10	0.17
AAC Chiffon VB	8	58	1	8655	8.80	29.9	49.1	66.3	0.10	0.18
Statistically Significant P=0.05		Yes		No	No	No	Yes	No	No	No
Triticale										
AB Stampeder	8	54	1	9600	8.9	30.1	49.5	66.5	0.12	0.19

[1] CP= crude protein, ADF= acid detergent fiber, NDF=neutral detergent fiber, TDN=total digestible nutrient. The values are based on dry matter basis.

[2] Early spring seeding at recommended rates for cereal crops. Barley harvested at soft dough stage, oats harvested at late milk stage, wheat harvested at early dough stage and triticale harvested at soft dough stage.

Perennial Forages

Variety trials for select forage perennials varieties were initiated in 2017. The project compared new varieties of economically important grass and legume species against check varieties. The goal was to provide reliable and independent regional performance information for Saskatchewan producers, seed companies and plant breeders. Plots were seeded at Swift Current (Brown Soil Zone), Saskatoon (Dark Brown Soil Zone), Melfort (Black Soil Zone) and Scott (Dark Brown Soil Zone) in the spring of 2017 and data was collected from 2018 to 2020. 48 forage entries of grasses and legumes (including check varieties) were assessed for hay yield and nutritive value. A full report is available within the resources section of the Saskatchewan Forage Council website.

Breeding Institutions and Seed Distributors of Varieties Listed in this Publication

Crop Kind, Class & Variety	Breeding Institution	Distributor
WHEAT		
Canada Western Red Spring		
CDC Adamant VB ♕	U of S - CDC	FP Genetics
AAC Alida VB ✪	AAFC (Swift Current)	SeCan Members
Bolles ✪	U of Minnesota	Seed Depot
CDC Bradwell ♕ §	U of S - CDC	SeCan Members
AAC Brandon ⛰	AAFC (Swift Current)	SeCan Members
SY Brawn VB ✪	Syngenta Seeds Canada Inc.	Proven Seed/Nutrien Ag Solutions
AAC Broadacres VB ✪	AAFC (Swift Current)	Proven Seed/Nutrien Ag Solutions
AAC Cameron VB ♕	AAFC (Brandon)	CANTERRA SEEDS
Carberry ⛰	AAFC (Swift Current)	SeCan Members
Cardale ⛰	AAFC (Winnipeg)	Seed Depot
SY Cast ✪	Syngenta Seeds Canada Inc.	Proven Seed/Nutrien Ag Solutions
SY Chert VB ♕	Syngenta Seeds Canada Inc.	Syngenta Canada
AAC Connery ♕	AAFC (Swift Current)	CANTERRA SEEDS
SY Crossite ✪	Syngenta Seeds Canada Inc.	Syngenta Canada
Daybreak ✪ **VUA**	LCRC - Limagrain Canada	CANTERRA SEEDS
AAC Elie ⛰	AAFC (Swift Current)	Alliance Seed
Ellerslie ♕	U of Alberta	SeCan Members
SY Gabbro ♕	Syngenta Seeds Canada Inc.	Richardson Intl
AAC Hodge VB ✪	AAFC (Brandon)	FP Genetics
CDC Hughes VB ♕	U of S - CDC	Proven Seed/Nutrien Ag Solutions
Jake ♕	U of Alberta	CANTERRA SEEDS
AAC Jatharia VB ♕	AAFC (Brandon)	SeCan Members
CDC Landmark VB ♕	U of S - CDC	FP Genetics
AAC LeRoy VB ♕	AAFC (Brandon)	Alliance Seed
AAC Magnet ♕	AAFC (Brandon)	FP Genetics
SY Obsidian ♕	Syngenta Seeds Canada Inc.	Richardson Intl
CDC Ortona ✪	U of S - CDC	Proven Seed/Nutrien Ag Solutions
Parata ♕	U of Alberta	SeCan Members
CDC Plentiful ⛰	U of S - CDC	FP Genetics
AAC Redberry ♕	AAFC (Swift Current)	Alliance Seed
Rednet ♕	U of Alberta	SeedNet Inc.
AAC Redstar ✪	AAFC (Brandon)	SeCan Members
AAC Russell VB ✪	AAFC (Swift Current)	FP Genetics / Proven Seed
Shaw VB ⛰	AAFC (Winnipeg)	SeCan Members
Sheba ♕	U of Alberta	Penwest Seeds
CDC SKRush ✪	U of S - CDC	SeCan Members
SY Sovite ♕	Syngenta Seeds Canada Inc.	Richardson Intl
CDC Stanley ⛰	U of S - CDC	Proven Seed/Nutrien Ag Solutions
AAC Starbuck VB ✪	AAFC (Swift Current)	SeCan Members
Stettler ⛰	AAFC (Swift Current)	SeCan Members
AAC Tisdale ♕	AAFC (Swift Current)	SeCan Members
CDC Titanium VB ♕	U of S - CDC	Proven Seed/Nutrien Ag Solutions
SY Torach ♕	Syngenta Seeds Canada Inc.	Alliance Seed
Tracker ♕	U of Alberta	CANTERRA SEEDS
CDC Utmost VB ⛰	U of S - CDC	FP Genetics
AAC Viewfield ♕	AAFC (Swift Current)	FP Genetics
AAC Warman VB ♕	AAFC (Brandon)	SeCan Members
Waskada ⛰ §	AAFC (Winnipeg)	SeCan Members
AAC Wheatland VB ✪	AAFC (Swift Current)	SeCan Members
Canada Western Special Purpose		
Alderon	KWS-UK	SeCan Members
AAC Awesome VB ♕	AAFC (Lethbridge)	SeCan Members
CDC Kinley §	U of S - CDC	Public Release U of S - CDC
Pasteur	Wiersum Plant Breeding	SeCan Members
Sparrow VB	KWS-UK	SeCan Members
WPB Whistler ✪	Wiersum Plant Breeding	SeCan Members
Canada Western Amber Durum		
CDC Alloy ♕	U of S - CDC	FP Genetics
Brigade ⛰	AAFC (Swift Current)	Proven Seed/Nutrien Ag Solutions
AAC Cabri ♕ §	AAFC (Swift Current)	SeCan Members
CDC Carbide VB ♕	U of S - CDC	Proven Seed/Nutrien Ag Solutions
AAC Congress ♕	AAFC (Swift Current)	CANTERRA SEEDS
CDC Covert ✪	U of S - CDC	Proven Seed/Nutrien Ag Solutions
CDC Credence ♕	U of S - CDC	CANTERRA SEEDS
CDC Defy ✪	U of S - CDC	SeCan Members
AAC Donlow ✪	AAFC (Swift Current)	CANTERRA SEEDS
CDC Dynamic ♕	U of S - CDC	Proven Seed/Nutrien Ag Solutions
CDC Flare	U of S - CDC	Proven Seed/Nutrien Ag Solutions
CDC Fortitude ♕	U of S - CDC	Proven Seed/Nutrien Ag Solutions
AAC GoldNet ✪	AAFC (Swift Current)	SeedNet Inc.
AAC Grainland ♕	AAFC (Swift Current)	SeCan Members
AC Navigator	AAFC (Swift Current)	Proven Seed/Nutrien Ag Solutions
CDC Precision ♕	U of S - CDC	Alliance Seed
AAC Spitfire ♕	AAFC (Swift Current)	SeCan Members
Strongfield ⛰	AAFC (Swift Current)	SeCan Members
AAC Stronghold ♕	AAFC (Swift Current)	SeCan Members
AAC Succeed VB ♕	AAFC (Swift Current)	FP Genetics
Transcend ⛰	AAFC (Swift Current)	FP Genetics
CDC Verona ⛰	U of S - CDC	Alliance Seed

Crop Kind, Class & Variety	Breeding Institution	Distributor
WHEAT (CONT'D)		
CWRS moving to CNHR - August 1, 2021		
AAC Redwater ♕ §	AAFC (Winnipeg)	SeCan Members
Canada Prairie Spring Red		
Accelerate ✪ **VUA**	LCRC - Limagrain Canada	CANTERRA SEEDS
AAC Castle VB ✪	AAFC (Lethbridge)	CANTERRA SEEDS
AAC Crossfield ♕	AAFC (Winnipeg)	CANTERRA SEEDS
AAC Entice ♕	AAFC (Winnipeg)	Proven Seed/Nutrien Ag Solutions
AAC Foray VB ♕	AAFC (Winnipeg)	SeCan Members
AAC Goodwin ♕ §	AAFC (Swift Current)	SeCan Members
AAC Penhold ♕	AAFC (Swift Current)	SeCan Members
CDC Reign ✪	U of S - CDC	FP Genetics
SY Rorke ✪	Syngenta Seeds Canada Inc.	Proven Seed/Nutrien Ag Solutions
SY Rowyn ♕	Syngenta Seeds Canada Inc.	Alliance Seed
CDC Terrain ♕ §	U of S - CDC	FP Genetics
Canada Northern Hard Red		
Faller §	NDSU	Seed Depot
Prosper ♕	NDSU	Seed Depot
Canada Western Hard White Spring		
AAC Cirrus ♕	AAFC (Swift Current)	FP Genetics
AAC Whitefox ♕ §	AAFC (Winnipeg)	SeCan Members
Canada Western Soft White Spring		
AC Andrew	AAFC (Lethbridge)	SeCan Members
AAC Chiffon VB ♕	AAFC (Lethbridge)	SeedNet Inc.
AAC Paramount VB ♕	AAFC (Lethbridge)	SeCan Members
Sadash VB ⛰	AAFC (Lethbridge)	SeCan Members
WINTER WHEAT		
Canada Western Red Winter		
CDC Buteo	U of S - CDC	SeCan Members
CDC Chase	U of S - CDC	CANTERRA SEEDS
AAC Elevate ♕	AAFC (Lethbridge)	SeCan Members
Emerson ⛰	AAFC (Lethbridge)	CANTERRA SEEDS
AAC Gateway ⛰	AAFC (Lethbridge)	Seed Depot
AAC Goldrush ♕	AAFC (Lethbridge)	FP Genetics
Moats ⛰	U of S - CDC	SeCan Members
AAC Network ✪	AAFC (Lethbridge)	SeedNet Inc.
Radiant ⛰	AAFC (Lethbridge)	CANTERRA SEEDS
AAC Wildfire ♕	AAFC (Lethbridge)	SeCan Members
Canada Western Experimental		
AAC Icefield ♕	AAFC (Lethbridge)	FP Genetics
Canada Western Special Purpose		
CDC Falcon	U of S - CDC	SeCan Members
Pintail ⛰	FCDC (Lacombe)	Mastin Seeds
TRITICALE		
Spring Habit		
Brevis	AAFC (Swift Current)	Wagon Wheel Seed Corp
Bunker ⛰	FCDC (Lacombe)	FP Genetics
AAC Delight ♕	AAFC (Lethbridge)	Fabian Seed Farms
Pronghorn	FCDC (Lacombe)	Progressive Seeds
AB Stampeder ✪	FCDC (Lacombe)	Solick Seeds
Sunray	AAFC (Lethbridge)	SeedNet Inc.
Taza ⛰	FCDC (Lacombe)	Solick Seeds
Tyndal ⛰	FCDC (Lacombe)	SeCan Members
AC Ultima	AAFC (Swift Current)	FP Genetics
Winter Habit		
Luoma ⛰	FCDC (Lacombe)	Corns Brothers Farms
Metzger	FCDC (Lacombe)	Haney Farm Ltd.
Pika	FCDC (Lacombe)	Progressive Seeds

Crop Kind, Class & Variety	Breeding Institution	Distributor
BARLEY		
Malting Two-Row		
Bentley ⛰	FCDC (Lacombe)	CANTERRA SEEDS
CDC Bow ♕	U of S - CDC	SeCan Members
AB BrewNet ✪	FCDC (Lacombe)	SeedNet Inc.
CDC Churchill ✪	U of S - CDC	SeCan Members
AAC Connect ♕	AAFC (Brandon)	CANTERRA SEEDS
CDC Copeland ⛰	U of S - CDC	SeCan Members
CDC Copper ♕	U of S - CDC	FP Genetics
CDC Fraser ♕	U of S - CDC	SeCan Members
AAC Goldman ♕	AAFC (Brandon)	EliteSeeds
CDC Goldstar ♕	U of S - CDC/Sapporo/PML	CANTERRA SEEDS
Lowe ♕	FCDC (Lacombe)	SeCan Members
AC Metcalfe	AAFC (Brandon)	SeCan Members
Newdale ⛰ §	AAFC (Brandon)	FP Genetics
CDC PlatinumStar ♕	U of S - CDC/Sapporo/PML	CANTERRA SEEDS
AAC Synergy ⛰	AAFC (Brandon)	Syngenta Canada
Malting Six-Row		
Celebration ⛰ §	Busch Ag Res. Inc.	CANTERRA SEEDS
Legacy	Busch Ag Res. Inc.	Proven Seed/FP Genetics
Hulled - Feed Two-Row		
Altorado ♕	Highland Specialty Grains	Proven Seed/Nutrien Ag Solutions
CDC Austenson ⛰	U of S - CDC	SeCan Members
Brahma ⛰	Highland Specialty Grains	Proven Seed/Nutrien Ag Solutions
Canmore ♕	FCDC (Lacombe)	CANTERRA SEEDS
Claymore ♕	Highland Specialty Grains	Proven Seed/Nutrien Ag Solutions
CDC Coalition ⛰	U of S - CDC	CANTERRA SEEDS
CDC Cowboy ⛰	U of S - CDC	SeCan Members
CDC Maverick ⛰	U of S - CDC	SeCan Members
Oreana ♕	Highland Specialty Grains	Proven Seed/Nutrien Ag Solutions
Sirish ♕	Syngenta Seeds Canada Inc.	Syngenta Canada
AB Wrangler ✪	FCDC (Lacombe)	CANTERRA SEEDS
Hulled - Feed Six-Row		
Amisk ♕	FCDC (Lacombe)	SeCan Members
AC Rosser	AAFC (Brandon)	SeCan Members
AB Tofield ✪	FCDC (Lacombe)	SeCan Members
Hulless - Food, Malting, Feed		
CDC Ascent ♕	U of S - CDC	SeCan Members
CDC Carter	U of S - CDC	SeCan Members
CDC Clear ⛰	U of S - CDC	SeCan Members
CDC Fibar ⛰	U of S - CDC	Tomtene Seeds
CDC Hilose ⛰	U of S - CDC	Tomtene Seeds
CDC Marlina	U of S - CDC	Tomtene Seeds
CDC McGwire ⛰	U of S - CDC	SeCan Members
CDC Rattan ⛰	U of S - CDC	Tomtene Seeds
Roseland	AAFC (Brandon)	Wayfinder Farms
Forage		
AB Advantage ✪	FCDC (Lacombe)	SeCan Members
AB Cattlelac ✪	FCDC (Lacombe)	Alliance Seed
AC Ranger	AAFC (Brandon)	FP Genetics
CANARY SEED		
CDC Bastia	U of S - CDC	Public release U of S - CDC
CDC Calvi ♕	U of S - CDC	CANTERRA SEEDS
Cantate	J. Joordans Zaadhandel BV	Hansen Seeds
CDC Cibo ♕	U of S - CDC	CANTERRA SEEDS
Keet	U of Minnesota; U of S - CDC	Public release U of S - CDC
CDC Lumio ✪	U of S - CDC	CANTERRA SEEDS
RYE		
KWS Bono	KWS Lochow GMBH	FP Genetics
Brasetto	KWS Lochow GMBH	FP Genetics
KWS Daniello ✪	KWS Lochow GMBH	SeedNet Inc.
Danko	Danko Plant Breeders Ltd	FP Genetics
KWS Gatano ✪	KWS Lochow GMBH	FP Genetics
Hazlet	AAFC (Swift Current)	SeCan Members
Prima	AAFC (Swift Current)	SeCan Members
KWS Propower ✪	KWS Lochow GMBH	SeedNet Inc.
KWS Serafino ✪	KWS Lochow GMBH	SeedNet Inc.
KWS Trebiano ✪	KWS Lochow GMBH	FP Genetics
CAMELINA		
SES0787LS ♕ (Cypress)	Smart Earth Camelina Corp.	Smart Earth Camelina Corp.
SUNFLOWER		
Cobalt II	Nuseed Americas	Nuseed Americas
Honeycomb NS	USDA	---
AC Sierra	AAFC (Saskatoon)	AAFC (Indian Head)
Talon	Nuseed Americas	Nuseed Americas
63A21	Pioneer Hi-Bred	Pioneer Hi-Bred
8N 270	Mycogen Seeds	Dow Seeds

Crop Kind, Class & Variety	Breeding Institution	Distributor
OAT		
Hulled		
Akina ♕	Lantmannen SW Seed	Elite Seeds
Alka ✪	Lantmannen SW Seed	Elite Seeds
CDC Arborg ♕	U of S - CDC	FP Genetics
CDC Boyer	U of S - CDC	SeCan Members
CS Camden ♕	Lantmannen SW Seed	CANTERRA SEEDS
CDC Dancer ⛰	U of S - CDC	FP Genetics/Cargill
Derby	U of S - CDC	Mastin Seeds
AAC Douglas ✪	AAFC (Brandon)	SeCan Members
CDC Endure ✪	U of S - CDC	Alliance Seed
Kara ♕	Lantmannen SW Seed	Elite Seeds
CDC Minstrel ⛰	U of S - CDC	FP Genetics
AC Morgan	AAFC (Lacombe)	SeCan Members
CDC Morrison ⛰	U of S - CDC	CANTERRA SEEDS
CDC Nasser §	U of S - CDC	T & L Seeds
CDC Norseman ♕	U of S - CDC	SeCan Members
ORe3541M ♕	Oat Advantage	SeCan Members
ORe3542M ♕	Oat Advantage	SeCan Members
Pinnacle ⛰ §	AAFC (Winnipeg)	FP Genetics
CDC Ruffian ⛰	U of S - CDC	FP Genetics
CDC Skye ✪	U of S - CDC	SeCan Members
CDC SO-I ⛰	U of S - CDC	T&L Seeds
Souris ⛰	NDSU	Seed Depot
Summit ⛰	AAFC (Winnipeg)	FP Genetics
Triactor ⛰	Lantmannen SW Seed	CANTERRA SEEDS
Hulless		
AC Gwen	AAFC (Winnipeg)	SeCan Members
Forage		
CDC Baler	U of S - CDC	FP Genetics
CDC Haymaker ♕	U of S - CDC	SeCan Members
Murphy ⛰	AAFC (Lacombe)	SeCan Members
FLAX		
CDC Bethune ⛰	U of S - CDC	SeCan Members
AAC Bravo ⛰	AAFC (Morden)	FP Genetics
AAC Bright ♕	AAFC (Morden)	SeCan Members
CDC Buryu ♕	U of S - CDC	SeCan Members
CDC Dorado ♕	U of S - CDC	SeedNet Inc.
CDC Glas ⛰	U of S - CDC	SeCan Members
AAC Marvelous ♕	AAFC (Morden)	FP Genetics
CDC Neela ♕	U of S - CDC	CANTERRA SEEDS
VT50 ⛰	Nutrien Ag Solutions	Proven Seed/Nutrien Ag Solutions
CDC Plava ♕	U of S - CDC	SeCan Members
Prairie Grande	AAFC (Morden)	SeCan Members
Prairie Sapphire ⛰	AAFC (Morden)	Alliance Seed
AAC Prairie Sunshine ♕	AAFC (Morden)	SeCan Members
Prairie Thunder ⛰	AAFC (Morden)	CANTERRA SEEDS
CDC Rowland ♕	U of S - CDC	SeCan Members
CDC Sanctuary ⛰	U of S - CDC	SeCan Members
CDC Sorrel ⛰	U of S - CDC	SeCan Members
Topaz ♕	Nutrien Ag Solutions	Alliance Seed
WestLin 60 ♕	Nutrien Ag Solutions	Proven Seed/Nutrien Ag Solutions
WestLin 71 ♕	Nutrien Ag Solutions	Proven Seed/Nutrien Ag Solutions
WestLin 72 ♕	Nutrien Ag Solutions	Proven Seed/Nutrien Ag Solutions
MUSTARD		
Brown		
Amigo	AAFC (Saskatoon)	Mustard 21 Canada Inc.
AAC Brown 18	AAFC (Saskatoon)	Mustard 21 Canada Inc.
AAC Brown 120 ♕	AAFC (Saskatoon)	Mustard 21 Canada Inc.
Centennial Brown	AAFC (Saskatoon)	Mustard 21 Canada Inc.
Oriental		
Cutlass	AAFC (Saskatoon)	Mustard 21 Canada Inc.
Forge	Colman's of Norwich	Proven Seed/Nutrien Ag Solutions
AAC Oriental 200 ♕	AAFC (Saskatoon)	Mustard 21 Canada Inc.
AC Vulcan	AAFC (Saskatoon)	Mustard 21 Canada Inc.
Yellow		
AAC Adagio ♕	AAFC (Saskatoon)	Mustard 21 Canada Inc.
Andante	AAFC (Saskatoon)	Mustard 21 Canada Inc.
AAC Yellow 80	AAFC (Saskatoon)	Mustard 21 Canada Inc.
AC Pennant	AAFC (Saskatoon)	Mustard 21 Canada Inc.
SAFFLOWER		
Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)
SOYBEAN		
see tables on page VR28 - VR29		
QUINOA		
NQRainbow		NorQuin
NQRed ✪	NorQuin	NorQuin
NQ94PT ⛰	NorQuin	NorQuin

Crop Kind, Class & Variety	Breeding Institution	Distributor
LENTIL		
CDC Asterix	U of S - CDC	Sask. Pulse Growers
CDC Carmine ♕	U of S - CDC	Sask. Pulse Growers
CDC Coral ♕	U of S - CDC	Sask. Pulse Growers
CDC Dazil	U of S - CDC	Sask. Pulse Growers
CDC Greenland	U of S - CDC	Sask. Pulse Growers
CDC Greenstar	U of S - CDC	Sask. Pulse Growers
CDC Imerald ✪	U of S - CDC	AGT Foods Canada
CDC Imigreen	U of S - CDC	Sask. Pulse Growers
CDC Imp ✪	U of S - CDC	Sask. Pulse Growers
CDC Impala	U of S - CDC	Sask. Pulse Growers
CDC Impower	U of S - CDC	Sask. Pulse Growers
CDC Impress	U of S - CDC	Sask. Pulse Growers
CDC Impulse ♕	U of S - CDC	Sask. Pulse Growers
CDC Imvincible	U of S - CDC	Sask. Pulse Growers
CDC Jimini ✪	U of S - CDC	Sask. Pulse Growers
CDC Karim ✪	U of S - CDC	Sask. Pulse Growers
CDC Kermit ♕	U of S - CDC	Sask. Pulse Growers
CDC KR-2 ♕	U of S - CDC	Sask. Pulse Growers
CDC Lima ♕	U of S - CDC	Sask. Pulse Growers
CDC Marble	U of S - CDC	Sask. Pulse Growers
CDC Maxim	U of S - CDC	Sask. Pulse Growers
CDC Nimble ✪	U of S - CDC	Sask. Pulse Growers
CDC Peridot	U of S - CDC	Sask. Pulse Growers
CDC Proclaim ♕	U of S - CDC	Sask. Pulse Growers
CDC Pilgrim ✪	U of S - CDC	AGT Foods Canada
CDC QG-1	U of S - CDC	AGT Foods Canada
CDC QG-2	U of S - CDC	AGT Foods Canada
CDC QG-3 ♕	U of S - CDC	AGT Foods Canada
CDC QG-4 ♕	U of S - CDC	AGT Foods Canada
CDC Redcoat	U of S - CDC	Sask. Pulse Growers
CDC Redmoon ♕	U of S - CDC	Sask. Pulse Growers
CDC Roxy ♕	U of S - CDC	Sask. Pulse Growers
CDC SB-3 ♕	U of S - CDC	Simpson Seeds
CDC SB-4 ♕	U of S - CDC	Simpson Seeds
CDC Simmie ✪	U of S - CDC	Sask. Pulse Growers
CDC Sublime ✪	U of S - CDC	Sask. Pulse Growers
CDC Viceroy	U of S - CDC	Sask. Pulse Growers
CHICKPEA		
CDC Alma	U of S - CDC	Sask. Pulse Growers
Amit (B-90) ⛰	ARO Volcani Centre	AGT Foods Canada
CDC Consul	U of S - CDC	Sask. Pulse Growers
CDC Cory	U of S - CDC	Sask. Pulse Growers
CDC Frontier	U of S - CDC	Sask. Pulse Growers
CDC Leader	U of S - CDC	Sask. Pulse Growers
CDC Luna	U of S - CDC	Sask. Pulse Growers
CDC Orion	U of S - CDC	Sask. Pulse Growers
CDC Palmer ♕	U of S - CDC	Sask. Pulse Growers
CANOLA		

see tables on page VR34 - VR35

Crop Kind, Class & Variety	Breeding Institution	Distributor
FIELD PEA		
Abarth ♕	Limagrain, Netherlands	FP Genetics
AAC Aberdeen ✪	AAFC (Lacombe)	Alliance Seed
CDC Acer	U of S - CDC	Sask. Pulse Growers
CDC Amarillo	U of S - CDC	Sask. Pulse Growers
AAC Ardill	AAFC	Wagon Wheel Seed Corp.
AAC Asher ♕ §	AAFC	FP Genetics
CDC Athabasca ♕	U of S - CDC	Sask. Pulse Growers
CDC Blazer ♕	U of S - CDC	Sask. Pulse Growers
Blueman ♕	DL Seeds Inc.	SeedNet Inc.
CDC Canary ♕	U of S - CDC	Sask. Pulse Growers
AAC Carver ♕	AAFC	CANTERRA SEEDS
AAC Chrome ♕	AAFC (Lacombe)	FP Genetics
AAC Comfort ♕	AAFC (Lacombe)	CANTERRA SEEDS
CDC Dakota	U of S - CDC	Sask. Pulse Growers
DL Delicious ✪ VUA	DL Seeds Inc.	FP Genetics
AAC Delhi ♕	AAFC	SeedNet Inc.
CDC Forest ♕	U of S - CDC	Sask. Pulse Growers
CDC Golden	U of S - CDC	Sask. Pulse Growers
DL Goldeye ✪ VUA	DL Seeds Inc.	Riddell Seed Co.
CDC Greenwater	U of S - CDC	Sask. Pulse Growers
CDC Horizon	U of S - CDC	Sask. Pulse Growers
CDC Inca ♕	U of S - CDC	Sask. Pulse Growers
CDC Jasper ♕	U of S - CDC	Sask. Pulse Growers
AAC Lacombe ⛰	AAFC	SeedNet Inc.
DL Lacross ✪	DL Seeds Inc.	SeedNet Inc.
CDC Lewochko ♕	U of S - CDC	Sask. Pulse Growers
CDC Limerick	U of S - CDC	Sask. Pulse Growers
AAC Liscard	AAFC	Wagon Wheel Seed Corp.
CDC Meadow	U of S - CDC	Sask. Pulse Growers
CDC Mosaic	U of S - CDC	Sask. Pulse Growers
AAC Profit ✪	AAFC	FP Genetics
CDC Raezer	U of S - CDC	Sask. Pulse Growers
Redbat 8 ♕	U of S - CDC	Sask. Pulse Growers
Redbat 88 ♕	U of S - CDC	Sask. Pulse Growers
CDC Saffron	U of S - CDC	Sask. Pulse Growers
CDC Spectrum ♕	U of S - CDC	Sask. Pulse Growers
CDC Spruce ♕	U of S - CDC	Sask. Pulse Growers
CDC Striker	U of S - CDC	Sask. Pulse Growers
DRY BEAN		
CDC Blackstrap ♕	U of S - CDC	Sask. Pulse Growers
Bolt	U of Guelph	Hensell District Co-op
Island	AAFC (Lethbridge)	Viterra Inc.
CDC Jet	U of S - CDC	Sask. Pulse Growers
Medicine Hat ⛰	Seminis Vegetable Seeds	CANTERRA SEEDS
CDC Pintium §	U of S - CDC	Sask. Pulse Growers
Portage	AAFC (Morden)	CANTERRA SEEDS
CDC Ray ♕	U of S - CDC	Rudy Agro
AC Redbond	AAFC (Lethbridge)	Viterra Inc.
AAC Shock	AAFC / U of Guelph	Hensell District Co-op
CDC Sol §	U of S - CDC	U of S - CDC
OAC Spark	U of Guelph	U of Guelph
CDC Superjet	U of S - CDC	Sask. Pulse Growers
CDC WM - 2 ⛰	U of S - CDC	Rudy Agro
CDC WM - 3 ✪	U of S - CDC	Rudy Agro
FABA BEAN		
Fabelle ✪	DL Seeds Inc.	SeedNet Inc.
FB9-4	U of S - CDC	Sask. Pulse Growers
Imposa	Limagrain Nederland	Cyre Seed Farms
DL Rico ✪	DL Seeds Inc.	Prairie Fava
Snowbird ⛰	Limagrain Nederland	Lindholm Seeds
CDC Snowdrop	U of S - CDC	Sask. Pulse Growers
CDC SSNS-1	U of S - CDC	Meier Brothers
Tabasco ⛰	DL Seeds Inc.	Riddell Seed Co.
Taboar ⛰	Globe Seeds - Netherland	Terramax
DL Tesoro ✪ VUA	DL Seeds Inc.	Riddell Seed Co.
Vertigo ✪	DL Seeds Inc.	SeedNet Inc.
186S-11 ♕	U of S - CDC	Sask. Pulse Growers
219-16 ♕	U of S - CDC	Sask. Pulse Growers
247-13 ♕ §	U of S - CDC	Sask. Pulse Growers

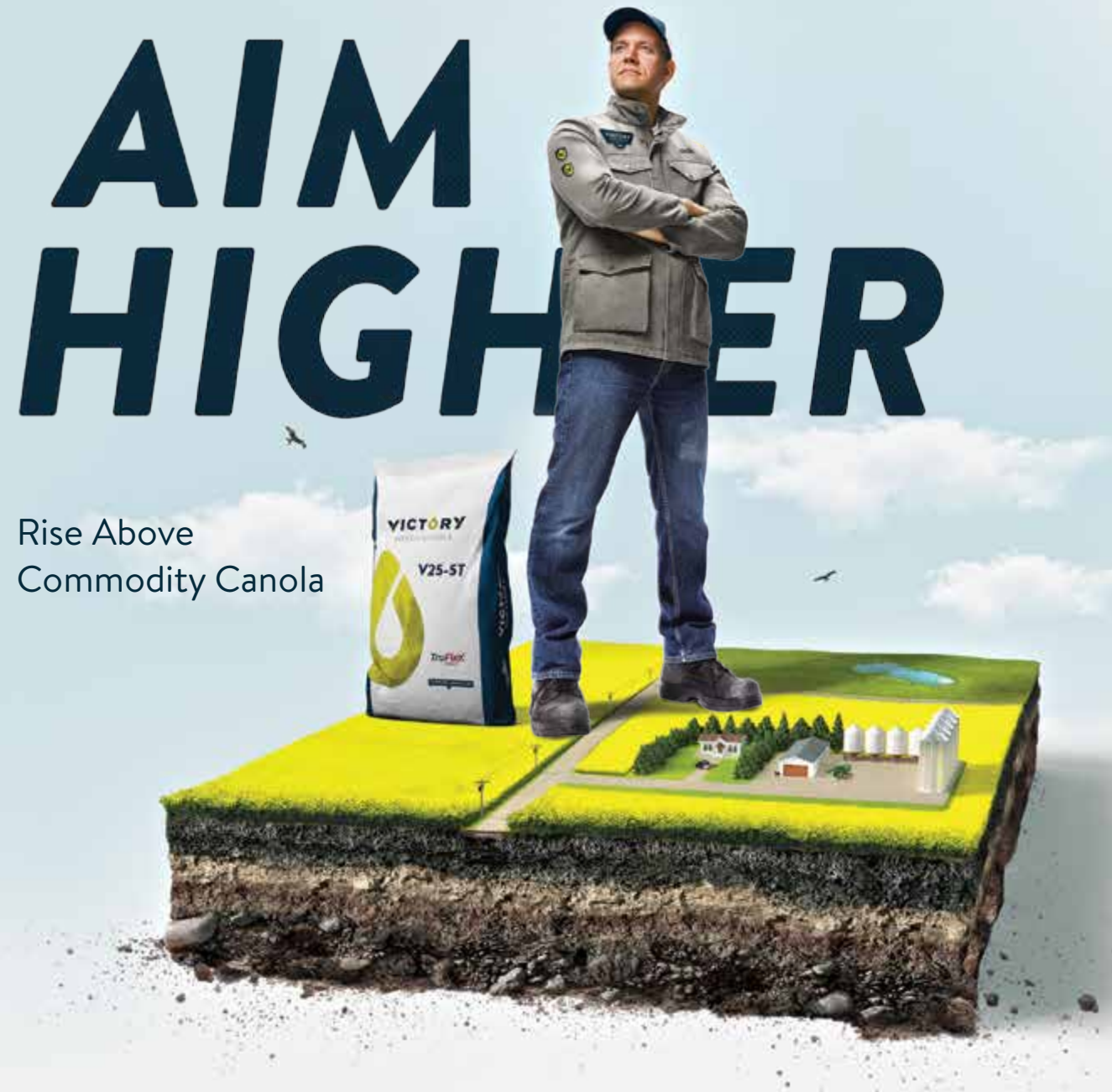
Abbreviations Used in this List

AC	Agriculture Canada (Agriculture and Agri-Food Canada)
AAC	Agriculture Canada (Agriculture and Agri-Food Canada)
AAFC	Agriculture and Agri-Food Canada
CDC	Crop Development Centre
CPS	Crop Production Services
FCDC	Field Crop Development Centre
NDSU	North Dakota State University
OAC	Ontario Agricultural College
SY	Syngenta Seeds Canada Inc.
U	University
U of S	University of Saskatchewan
USDA	United States Department of Agriculture

The distributors listed in this table have distribution rights for the variety within Saskatchewan. Those distribution rights may be different outside of Saskatchewan and/or Western Canada.

AIM HIGHER

Rise Above
Commodity Canola



VICTORY® HYBRID CANOLA
Cargill

INCREASE YIELDS. MAXIMIZE PROFITS.

Our VICTORY® hybrid portfolio delivers high gross returns and industry-leading clubroot* and polygenic blackleg resistance. Plus, we're offering two new TruFlex™ hybrids for 2021. Set your sights on victory with the Cargill Specialty Canola Program.

V14-1 | V25-3T TruFlex | V25-5T TruFlex

Talk to your Cargill or Independent Retail today to secure your acres | VICTORYCANOLA.COM Cargill

TruFlex CANOLA

*Clubroot resistance to predominant pathotypes identified in Western Canada.