

SEED MATTERS

Streamlining the registration of new crop varieties

Is Canada's system for registering new crop varieties too onerous? Does it take longer than it needs to and thereby delay new varieties getting into the hands of farmers? These are not simple questions and different players in the seed industry have differing viewpoints.

Wheat, durum, barley, canola, flax, lentils, peas, mustard and oats are subject to merit testing in the Canadian system with the entire seed industry value chain represented in registration decisions. A simpler registration system exists for soybeans, many forages, sunflowers, Canary seed and chickpeas.

Brent Derkatch, director of the Pedigreed Seed Business Unit at Canterra Seeds, is able to compare the Canadian and American systems because they have a sister seed distribution company in the U.S. called Meridian Seeds. Derkatch says the Canadian system is slower, particularly for wheat.

"Milling wheat has three years of registration trials in Canada that aren't required in the U.S.," notes Derkatch. For some other crops, registration trials are shorter. For instance, in peas and lentils, registration trials involve two years of data.

Canadian merit testing involves three expert committees to review data from these extensive small plot trials to assess quality, disease and agronomy versus one or more check varieties. While the Canadian Food Inspection Agency is responsible for variety registration, the Canadian Grain Commission handles grain grading and the Canadian wheat classification system is a complicating factor.

American spring wheat has quality requirements, but the Canadian system involves many classes of spring wheat with the largest and highest value class being Canada Western Red Spring (CWRS). In recent years, some varieties initially registered as CWRS have been demoted to Canada Northern Hard Red (CNHR), which limits buyer interest and thereby producer uptake.

"We need a high degree of quality," says Derkatch, "but I'd like to see the registration time shortened, simplified and more predictable. Other areas of the world have streamlined their processes."

Rob Graf, a long-time wheat breeder (recently retired) with Agriculture and Agri-Food Canada at Lethbridge acknowledges the more stringent registration requirements in Canada, but doesn't think it always translates into a significant delay.

"The U.S. has no registration system, but further testing is still typical," says Graf. "No one wants to go to market with a dog."

Graf also notes there is a way seed distribution companies in Canada can get to market as quickly as in the U.S. If they believe they have a winning variety, they can start seed multiplication ahead of getting registration.

From his perspective, Brent Derkatch says this is an option to consider, although it's usually limited to privately developed varieties. This more aggressive approach to commercialization rarely happens due to the financial risk when there's no certainty of registration or preferred grain classification. Graf acknowledges the risk, but notes new procedures have made the process more predictable.

Another Canadian complication

Even if a new crop variety is developed through traditional crop breeding methods, if it has a significantly different characteristic, it might be considered as a Plant with Novel Trait in the Canadian system. An example from the past is Clearfield wheat. It wasn't genetically modified (GM), but approval in Canada was through the PNT process, much the same as if it had been a GM crop.

The U.S. takes a different approach. As long as a crop is developed through regular plant breeding techniques, it isn't subject to a lot of additional scrutiny.

Observers say a new herbicide tolerant wheat is proceeding through the U.S. system, but will take much longer to reach Canadian farmers.

While it has defenders as well as detractors, Canada is the only country in the world utilizing a PNT approach. Other countries concentrate on the process involved in developing a new trait rather than the trait itself.

Possible improvements

Canadian wheat variety development became easier nearly 15 years ago when kernel visual distinguishability was removed as a requirement. With KVD, each class of wheat required a specific shape and size of kernel so inspectors could visually distinguish one class from another. It was viewed as a cornerstone of the Canadian grading system.

Now, producers declare the class of wheat they are delivering and wheat breeders have one less restriction to worry about. Wheat and durum breeder Curtis Pozniak says moving away from KVD widened the wheat crosses available and was a contributing factor to enhancing Fusarium Head Blight resistance.

Pozniak is the head of the University of Saskatchewan's Crop Development Centre in Saskatoon. He's also a former chair of the Wheat Recommending Committee and spent time examining how to streamline variety registration and provide more predictability.

"I believe three years of registration testing for quality, disease and agronomy is really what we need for wheat and I believe our variety registration system provides a Canadian advantage," says Pozniak. However, he also believes ways can be found to streamline the process.

With market classification important in western Canadian wheat, early quality assessments of upcoming lines as compared to check varieties could help define the market class in advance. Pozniak notes that registration testing requirements for the Special Purpose class of wheat have been reduced to two years since quality requirements are not required.

From the perspective of a seed distributor, Brent Derkatch hopes efficiencies can continue to be found. For instance, new technology may replace the need for field tests for some attributes.

System change to date can best be described as incremental, but the entire seed sector has a commonality of purpose. Wheat breeder Rob Graf expresses that best. "Farmers," he says, "don't want more varieties. They want better varieties." And the system has a good track record of delivering, albeit not quite as quickly as some would like.