# SEED MATTERS

## Certified seed: Your best guarantee of varietal purity

How pure is your seed? In other words, is it almost entirely seed of one specific variety or has mixing with other varieties occurred over time?

Mixing can occur in a number of ways. Perhaps volunteer plants from a previous growing season popped up in the crop. Maybe a variety mix-up occurred when the grain was binned. Maybe augers or truck boxes or semi hoppers weren't entirely cleaned out. Pedigreed seed growers have procedures and checks in place to prevent those types of contamination and to ensure they meet the strict requirements of the Seeds Regulations.

After several generations of using the same seed, the percentage of any contamination present would likely be amplified. If height and maturity are similar, you might not notice the lack of varietal purity in the field, but end users might notice.

In many grain export programs, the only requirement is that production comes from a registered variety that qualifies for the particular class of grain such as Canada Western Red Spring wheat or Canada Western Amber Durum. That's why elevator companies require designated variety declarations.

"We do come across an occasional program where a buyer requires the use of Certified seed, but I wouldn't say it's a common theme," says Nathan Bosch, a grain broker with Rayglen Commodities in Saskatoon. "However, using Certified seed can help entice better contract values as the buyer knows growers are starting with a high value input."

Malting barley is one sector where varietal purity is an important requirement.

**Greater than 95 per cent varietal purity**

Each malting barley variety has different quality and malting performance characteristics. The kernels are a somewhat different size and shape, water is absorbed at different rates, and processing times for malting vary.

Grain companies and domestic malting companies require a minimum 95 per cent varietal purity. Most malting barley buyers in international markets include this minimum in their contracts. Genetic testing is increasingly used to monitor purity throughout the value chain. A producer could see their malting barley discounted or even rejected for not meeting the standard.

"Everyone recognizes that planting Certified seed is the best way to ensure varietal purity," says Peter Watts, managing director of the Canadian Malting Barley Technical Centre in Winnipeg. "Grain companies sign a 95 per cent purity guarantee so they like to buy above 95 per cent to provide for a margin of error."

Varietal purity can be estimated using DNA tests, provided a sufficient quantity of kernels are included in the test and strict protocols are followed. However, DNA testing is relatively slow and expensive. With the use of artificial intelligence, imaging technologies that measure kernel differences to determine varieties may be the next frontier. More research is still needed though to determine if imaging will be accurate enough to get the job done.

**Ensuring purity**

To get a malting barley production contract with an "act of God" clause, Rahr Malting of Alix, Alberta requires producers to use Certified seed or farm saved seed grown from Certified seed.

"We want our producers to use fresh seed," says Kevin Sich, supply chain director for Rahr. "Before we had the requirement, we sometimes ran into purity issues with as much as 15 to 20 per cent of another variety."

To ensure the recent purchase of Certified seed, Rahr conducts random audits asking for Certified seed invoices.

For many years, AC Metcalfe was the king of malting barley varieties and in more recent years, CDC Copeland, another older variety, has been the top grown variety in Saskatchewan. Although end users are slow to accept new varieties, the acreage of old varieties such as AC Metcalfe has been declining with newer varieties such as AAC Synergy, CDC Churchill, CDC Fraser, CDC Bow and AAC Connect gaining ground.

With a slow transition to new varieties, more opportunity exists for contamination if seed isn't regularly renewed. That contamination may be with a feed barley that isn't suitable for malting, but different varieties of malting barley are also problematic because each variety malts differently.

"Since we accept one year off of Certified, we aren't requiring growers to buy all Certified seed each year for all of their acres," explains Sich. "However, the regular purchase of some Certified seed also returns royalty dollars to the couple of barley breeding programs that remain in Western Canada."

**Pea protein drives new varieties**

Roquette's protein fractionation facility at Portage la Prairie sources its yellow field peas from Manitoba as well as southeastern Saskatchewan. When Roquette started contracting, farmers were required to use Certified seed as part of its quality verification for its customers. That has been temporarily modified. Beginning with the 2023/24 season, Roquette pea contracts allow for the use of common seed.

Roquette has also established an Eligible Variety List that is adjusted every fall. In the past, CDC Amarillo was dropped because of a weak seed coat and last fall AAC Carver and AAC Chrome were removed due to low protein levels.

“Moving forward, our Eligible Variety List will contain fewer varieties as we move to varieties like CDC Lewochko that have yields competitive to other top yielding varieties, strong seed coats and are amongst the highest protein containing varieties” says Roquette agronomist Bruce Brolley. “What we’re really waiting for is a variety with good yield potential, a strong seed coat and a protein level that’s 1.5 to 2.0 per cent higher than CDC Lewochko. At that point, we’ll likely go back to production contracts requiring Certified seed.”

As varietal attributes are developed in all grains to meet the specific needs of end users, varietal purity through Certified seed is expected to become increasingly important.