

## Continued Support for Plant Breeding



*Growers want better varieties of crops they grow now, and new crops to enhance their rotations and businesses in the future. Who will answer the call?*

Farming in the Morrin area north of Drumheller, Ron Nerland has faced wetter-than-normal conditions in several recent growing seasons. These conditions have been conducive to the development of plant diseases, particularly leaf diseases in cereals.

While fungicides are an option in many situations, Nerland wants to have a more diversified defense available.

Nerland was one participant at the ACIDF Cropping Initiative Issues/Solutions Sessions who indicated that *Continued Support for Plant Breeding* is a worthy priority area. Within this area, disease resistance ranks high on his list.

“These wet years have made disease more prevalent and it would be nice to not have to spray so much fungicide,” he says. “The best control of a lot of these things is in the plant breeding itself.”

While production attributes like disease resistance are important, Nerland also made the case that plant breeding should serve the needs of Canada’s customers around the world. He cites UK-based baker Warburton’s, which has purchased identity-preserved Canadian wheat for 20 years, providing contracts for hundreds of farmers.

Nerland argues that plant breeding can and should help crop producers meet this kind of premium market demand.

“Plant breeding is important to having the yield and quality attributes for a niche product,” he says. “Maintaining quality for our markets is important.”

Need an example? Just look at canola

“If you’d told us 10 or 15 years ago about the kind of production we’d be getting in this area today, you would’ve been laughed at.”

That’s Fort St. John, B.C. producer Martin Moore, and he’s talking about how focused plant breeding and varietal development have accelerated canola production in the B.C. Peace. Moore attended the ACIDF Cropping Initiatives Issues/Solutions Session held in Spirit River.

With much of the talk centered on ways to use inputs, strategize tillage and manage residue, Moore advocated more attention right at the start of the growing season.

“In my mind, agronomy is very important, but you need a good variety to be able to take advantage of agronomy when growing a crop,” says Moore.

He marvels at how canola production has grown, thanks to locally relevant varieties, and would like some of the same devotion given to wheat and barley. He’s looking for shorter-season varieties with higher yields, to put his cereals on more even footing with canola in the farm’s income statement.

While Moore’s area is often lumped in with Alberta’s Peace Country as a growing region, he believes that’s an oversimplification. He points out that Spirit River and Rycroft have been doing well with winter wheat for years, but it’s not a crop growers in his area feel a lot of confidence planting.

This idea isn’t just relevant for the Peace; it highlights the fact that growing conditions can vary considerably even a short drive away. Variety development should reflect these differences.

“If you talk about wheat and barley, agronomy aside, I need a variety that I can plant May 15 to 20 and not be out there combining it in December,” says Moore. “I want to be finished up mid- to late-October, so to my way of thinking, we need more plant breeding.”

Moore emphasizes that plant breeding and varietal development must be seen as a long-term commitment. Even when growers have solid varieties to plant today, within a few years, the situation may have changed. Disease management is a key example. For years, growers in Moore’s area rarely saw striped rust in their cereals. Today, it’s a growing problem that needs a solution.

"Conditions are changing all the time," says Moore. "It seems like whenever somebody comes up with a new variety, along comes a new disease to attack it and a new bug that wants to eat it."

Session discussions brought to light other concerns around plant breeding and varietal development. First, who’ll do the research for crops like wheat and barley? What balance of public and private sector is best? Second, how will they balance what the market wants to buy with attributes that farmers may need to grow the crop, such as lodging resistance? Third, why can’t new varieties come packaged with specific agronomic recommendations for growers?

Martin Moore’s seen how the best minds of plant breeding and agronomy have transformed canola production over the last decade or more. If the same could be done for other crops, the sky’s the limit.

Says Moore: “I can grow just about anything if I can get it in the ground.”

#### Continued Support for Plant Breeding:

##### *Issues identified by stakeholders*

- new and improved crops and crop varieties
- new and alternative, profitable crops
- continue to drive for higher yields

#### Continued Support for Plant Breeding:

##### *Action items: what should be researched first*

- address key agronomic needs (e.g. lodging)
- plant breeding to address a-biotic stressors. Tools to manage characteristics such as tolerance of cold, drought and wet soils
- design a funding model that recognizes long-term nature of breeding research
- develop agronomic packages specific to varieties, to better meet the quality level needed by the market, manage growing and quality risks, optimize profits and manage cost of production.