

Barley project targets yield response, profitability

by Kieran Brett

Funded by the ALMA/ACIDF Feeding Initiative, this public-private research study is bringing new light to how different lines of barley germplasm respond to crop inputs.

Suppose you grow barley for a living, and you'd like to grow even more of it. You might consider applying more inputs with a view to increasing yield.



The question is, how do you know that the cost of these inputs will be recouped by extra bushels and higher quality? In the case of a crop like barley, it's hard to say. Some varieties respond vigorously to agronomic changes, while other varieties do relatively little. A producer could pour on the inputs and get either a profitable crop or a money-loser in return.

In Patricia Juskiw's experience, this kind of uncertainty comes with the territory.

"The truth is, if we didn't believe that different lines of barley -- even lines from the same cross -- would respond differently, we wouldn't be breeding," says Juskiw, Barley Breeder at the Field Crop Development Centre (FCDC) of Alberta Agriculture and Rural Development (ARD) in Lacombe.

Public-private cooperation on barley development

In 2011, the Alberta Crop Industry Development Fund (ACIDF) approved funding for a public-private barley research project. Under this three-year project, the crop protection company Syngenta partnered with FCDC and the University of Saskatchewan's Crop Development Centre (CDC) to evaluate the response of malt and feed barley germplasm to various agronomic inputs.

"The goal of this project was to develop a proof-of-concept trialing program to identify whether early-stage barley germplasm would respond positively to various seed treatment combinations," says Randy Retzlaff, Solutions Manager with Syngenta's Cereals Crop Team.

As Retzlaff sees it, the idea is to identify lines of malt and feed barley that are positively affected by both biological and chemical technologies to increase yield and profitability in farmers' production systems. Growers could achieve better alignment between a variety's genetic capabilities and their own production strategy for that variety.

In 2012, the project conducted a series of trials comparing an untreated control check with two different seed care regimes on malt barley.

Field research expands in 2013

In Retzlaff's analysis, results from the first year of research are encouraging, as some malt barley lines responded to the inputs better than others. In 2013, the plan is to add feed barley to the testing, comparing an untreated check to barley lines given extra fertility and treated with plant growth regulators and fungicides. The project will also add more trial locations.

In the long run, it could be possible for new malt or feed barley varieties to be registered, with an optimum input mix for each one known and communicated with growers.

Typically, and particularly for feed barley, public and private researchers rarely work together on variety development. This project could make an important contribution to barley development and could provide a model for public-private cooperation. Juskiw believes the experience has been positive.

“This program gave breeders at U of S and ARD an opportunity to put our lines in tests to evaluate their response to agronomic changes,” she says, “to see if there can be a superior yield response while maintaining important quality traits.”

As Retzlaff sees it, this public-private project helps a community that both groups ultimately serve: crop producers.

“The potential is evident – we just have to unlock it and better understand the relationship to increased yield and quality,” says Retzlaff. “After our third year in 2014, we will have a broader base and depth of knowledge to share with the farming community, and that is something we are very excited about.”

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