

# PEA BREEDING SEEKS TO BALANCE YIELD, PROTEIN, AGRONOMICS

Having developed 28 pea varieties since 2001, D.J. Bing hears new demands to boost protein to suit processors. In his breeding priorities, he continues to take a long-term view.



Maple pea breeding lines growing at the Ag Canada research station in Lacombe.

Pulse breeder Dr. D.J. Bing continued his long-standing and highly productive pea breeding program in 2019, against a backdrop of new processing facilities being built in Alberta and elsewhere in Western Canada. What's known is that these processors see peas answering growing Canadian and global demand for plant-based protein.

What's less clear, as Bing sees it, is how much of a protein premium these new buyers are prepared to pay to growers. He's reluctant to tinker with

two decades of breeding priorities and go whole-hog after protein.

"Our program has been pursuing breeding for high protein for the past 20 years," said Bing, who's based at the Agriculture and Agri-Food Canada (AAFC) Lacombe Research and Development Centre. "We're now in the second or third cycle of breeding for high-protein pea varieties. We also target yield, as well as the agronomic characteristics of standability, disease resistance and appropriate maturity."

This is a program that's delivered the goods year after year. In 2019, Bing developed 120 breeding lines in advanced generations and succeeded in releasing two new marrowfat pea varieties and one new maple pea variety. The previous year, Alliance Seed came to market with AAC Aberdeen, a yellow pea variety that came out of the AAFC pea breeding program in 2017. Bing is expecting to release two new yellow pea varieties in 2020.

Since 2001, in total, Bing's program has registered 18 yellow pea varieties and 10 from other pea classes. He's two years into a five-year funding commitment from the Canadian Agricultural Partnership AgriScience Program.

## A question of balance

If Bing hit the gas on *both* yield and protein, wouldn't that satisfy growers' need for saleable bushels and processors' thirst for protein? In pulse breeding, it doesn't work that way.

"It is very, very difficult to achieve high yield and high protein in one variety," he said. "My view is, if the markets are paying enough of a premium for higher protein to growers, then maybe the breeding program will shift to have more emphasis on higher-protein breeding. If the market is not paying enough premium for higher protein to growers, growers will look to varieties with high yield and good agronomics."

With one eye on his breeding lines and another on the marketplace, Bing will continue to run his program with a view to balancing different and sometimes competing attributes.

"Because breeding takes such a long time, we have to be prepared for anything, almost," he said. "I'm trying to keep the high-protein to no more than 30% of our program. We don't have a clear vision of the market yet, so I try to take the long view and be prepared for anything."