

PEA BREEDING PROGRAM DELIVERING INCREASED PROFITS TO PULSE GROWERS

A field pea breeding program in Lacombe, AB is paying dividends for the Canadian pulse growers who help fund it.

Field pea is Canada's most widely grown pulse crop. Canada also leads the world in field pea production and exports.

The research program aims to breed superior field pea varieties with greater yield, disease resistance, environmental resilience, and protein content. So far, researchers have developed or released more than 30 new varieties of field pea since 2003, in a range of market classes that include yellow, maple, and marrowfat peas (see Table 1). The study also investigated the correlation between seed yield and protein concentration in field pea.

One of the most significant outcomes of the researchers' current five-year project is a new yellow pea variety called AAC Planet, which is high-yielding and offers resistance to powdery mildew. AAC Planet is on its way to market as a result of this research program, said Agriculture and Agri-Food Canada researcher and project lead Dr. Dengjin Bing.

Powdery mildew can blemish pods, cause the plant to ripen prematurely, and result in shrunken seed, leading to smaller yields and

| VARIETY | MARKET CLASS | LICENSEES |
|---------------|---------------|---|
| AAC Lorie | Maple pea | Wagon Wheel Seed Corporation (Saskatchewan) |
| AAC Greenrich | Marrowfat pea | D Five Holdings (Saskatchewan) |
| AAC Olive | Marrowfat pea | Columbia Seed Co. Ltd. (Alberta) |
| AAC Aberdeen | Yellow pea | Alliance Seeds (Manitoba) |
| AAC Beyond | Yellow pea | Canterra Seeds Ltd. (Manitoba) |
| AAC Delhi | Yellow pea | SeedNet Inc. (Alberta) |
| AAC Julius | Yellow pea | FP Genetics (Saskatchewan) |
| AAC Planet | Yellow pea | SeedNet Inc. (Alberta) |
| AAC Profit | Yellow pea | FP Genetics (Saskatchewan) |
| AAC Asher | Yellow pea | Legume Logic (North Dakota, United States) |

Table 1. Please contact the above retailers, or visit their websites, to learn more about how these pea varieties could benefit your farm.

higher production costs for farmers choosing to attack the mildew with fungicides. That is bad news for field pea growers.

Bing and his research team registered AAC Planet with the Canadian Food Inspection Agency (CFIA) in January 2022. It has now been licensed to

SeedNet Inc. in Alberta. The certified seed of this variety should be available to interested pea growers in the next few years.

In fact, growers can expect to see a steady flow of new and improved field pea varieties like this in the coming years as a result of this

program. “Although we continue to release improved field pea varieties to Canadian pulse growers, the varieties have not yet reached a yield plateau,” Bing said.

That is even more positive news for growers, because it means researchers still see plenty of potential ahead for breeding increasingly productive traits into Canada’s pulse crops before they reach the limits of what is possible.

Not that it has been one win after another for Bing and his team. “It is frustrating that we have not yet developed more varieties with both strong yield and higher protein content,” he said. “Breeding the two features together into one variety has proven enormously difficult.”

While researchers continue to work on solving that problem, Bing noted that it may be necessary, in the end “to strike a balance between the two traits somewhere in the middle.”

Knowledge and understanding like this are as important a research outcome as new, improved varieties. Every inch of progress builds on the efforts of previous research. The breeding materials being developed today will enable tomorrow’s breeding programs to develop still better varieties—and possibly exceed the limits of what was impossible yesterday.

“Canadian pulse farmers deserve enormous credit for this progress,” Bing said. “We are dedicated to doing everything possible to ensure that the research they help fund produces new varieties that make their operations more profitable.”

The Pulse Research Cluster includes Alberta Pulse Growers, Manitoba Pulse and Soybean Growers, Ontario Bean Growers, Saskatchewan Pulse Growers and Pulse Canada and is supported by the Agriculture and Agri-Food Canada AgriScience Clusters Program under the Canadian Agricultural Partnership.



Alberta Pulse Growers’ Nevin Rosaasen checks for nodulation in a field of yellow peas.

Project

Development of genetically improved field pea varieties and germplasm for the Canadian pulse industry, and evaluation of flavour, physicochemical and functional characteristics in high protein pea breeding lines

Industry Funders

Alberta Pulse Growers, Saskatchewan Pulse Growers, Manitoba Pulse and Soybean Growers

Cost

\$2,624,461

Project Completion Date

March 31, 2023