

# Research investments yield significant crop improvements for grain farmers

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Yields of five leading Ontario grains and oilseeds crops have been on the rise the last 20 years. The reasons behind the increases are varied, but they all lead back to a common source: research.

A driving force behind that research has been farmers themselves, funding projects through Grain Farmers of Ontario (GFO) and its three legacy organizations, Ontario Corn Producers Association, Ontario Soybean Growers and Ontario Wheat Producers Marketing Board.

That grower investment has also often been complemented by funding through grant programs delivered by the Agricultural Adaptation Council (AAC), which marked its 25th anniversary in December 2020.

“One of our big goals is to help farmers be more innovative, sustainable and have profitable production systems,” says GFO CEO Crosby Devitt. “A big part of that is finding ways to improve how grain is grown through new techniques, how we adapt to changes in the field, diseases and pests – they’re all directly related to a farmer’s ability to produce a crop.”

Early research projects for grain growers were funded through the CanAdapt program, including looking at fusarium resistance in corn and developing high yield, disease resistant soybeans. The most current initiative to integrate genomics into breeding new wheat varieties is part of AAC’s Ontario Regional Priorities Partnership Program.

According to Devitt, the most significant indicator of success has been the continued increase over time of average yields in all five crops his organization represents:

corn, soybeans, wheat, barley, and oats.

For example, statistics from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) show the most dramatic change in corn yields at 105 bushels per acre in 2000, and 158 in 2019 (latest available figures). And according to GFO, land use efficiency has increased by 39 per cent in corn and the amount of energy used for corn production has dropped by 43 per cent since 1981.

“It’s not just due to one project, it’s everything pulled together,” says Devitt, adding that the research projects over the years have also combined to boost the efficiency and sustainability of grain farming through precision management. “We try to work on things farmers can’t do individually on their own farm to figure out a solution for the whole grower community.”

A particularly impactful block of research has been the numerous projects over the years dedicated to addressing fusarium in wheat. The late 1990s saw several devastating years for Ontario’s wheat crops, so much so that growers were starting to wonder if it was too risky to continue growing.

A significant research effort was launched to look at all the factors contributing to the disease and what could be done to address it. Today, a combination of new varieties with resistance, understanding of the disease cycle, new fungicide tools, and forecasting has been rolled into an integrated management package for growers that has saved Ontario’s wheat acres.

We haven’t had a major fusarium problem in wheat for a number of years; if we were still using the tools and techniques of 15 years ago, we would still have it,” Devitt said.

The types of projects AAC-delivered programs have supported have been varied over the years, although there’s always been a core focus on agronomy, weed and pest control, diseases, and plant genetics. In more recent years, there’s also been an evolution towards more emphasis on the environmental aspects of crop production.

Devitt sees GFO’s relationship with AAC as a partnership, and notes that the funding programs the organization delivers help support research capacity in the province at post-secondary institutions, OMAFRA and Agriculture and Agri-Food Canada that benefit the entire agriculture sector.

“As a result of these projects funded by farmers and through AAC, we have strong research capabilities in Ontario with built-in resilience to address new challenges when they occur,” he says.

“For our organization, every farmer dollar generates three to five dollars of partner investment and the AAC programs have been a huge part of giving farmers the critical mass to make positive outcomes happen.”

Over the past 25 years, AAC has delivered more than 30 funding programs on behalf of both federal and provincial government partners. The organization had 47 farm and agricultural organizations at its inception; today, there are 65. The goal then remains the same today: giving responsibility for project funding decisions to the industry leaders most knowledgeable about the needs of agriculture’s diverse sectors.

According to Devitt, that decision-making process has also always been supported by clear guidelines and priorities, predictable timelines, and transparent accountability, which are critical elements for stakeholders working with grant funding.

AAC is currently delivering phase two of the OMAFRA-funded Greenhouse Competitiveness and Innovation Initiative for Ontario’s greenhouse industry as well as Agriculture and Agri-Food Canada’s Emergency Processing Fund for food processors in Manitoba, Nunavut, and Ontario.

*For the Agricultural Adaptation Council*



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