CANADIAN AGRISCIENCE CLUSTER FOR HORTICULTURE 4

# Fruit and Vegetable Growers of Canada's Canadian AgriScience Cluster for Horticulture 4

## Update to Industry for October 2024

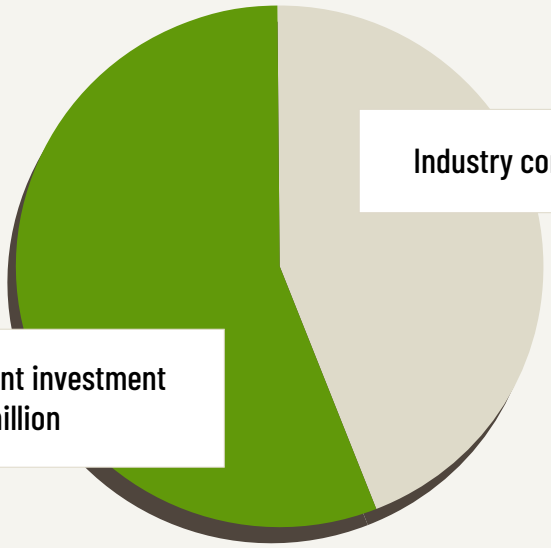
With a year now under the belt, the Canadian AgriScience Cluster for Horticulture Cluster 4 is moving along. Spanning the years 2023 to 2028, Cluster 4 contains 10 research activities focused on the innovation, competitiveness and sustainability of Canada's fruit and vegetable industry.

Cluster 4 is addressing key challenges in the Canadian horticulture industry facing the production of apples, berries, field vegetables, greenhouse vegetables and potatoes. Through the 10 research activities, researchers have started working on ways to improve operational efficiency and sustainability for growers, reduce on-farm chemical use, improve soil health, and identify more sustainable fruit and vegetable varieties for growers across the country.

This project is generously funded through the Canadian AgriScience Cluster for Horticulture 4, in cooperation with Agriculture and Agri-Food Canada's AgriScience Program, a Sustainable Canadian Agricultural Partnership initiative, the Fruit and Vegetable Growers of Canada (FVGC), and industry contributors.

Researchers have spent the 2024 growing season collecting samples and setting up various trials. Throughout this report you will find updates on preliminary research findings and plans for the off-season.

## CLUSTER 4 BY THE NUMBERS



Industry contribution of $7.7 million

Federal government investment of $9.8 million

Total Cluster 4 investment is $17.5 million

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# Apple Research Activities

There are two research activities that are part of the apple group for the Canadian AgriScience Cluster for Horticulture Cluster 4. These two activities are focused on finding ways to help apple growers across Canada protect their orchards and be more productive and sustainable.

## THE CLUSTER 4 APPLE RESEARCH ACTIVITIES ARE:

### ACTIVITY 4

**Reducing losses from apple pests with alternative control strategies**

LEAD RESEARCHER – Suzanne Blatt, research scientist in entomology with Agriculture and Agri-Food Canada at the Kentville Research and Development Centre

### ACTIVITY 5

**Apple crop load management: enhancing thinning predictability and tree response through advancements in modelling, new precision thinning products and strategies, and technology**

LEAD RESEARCHER – John A. Cline, professor of tree fruit physiology at the University of Guelph

This project is generously funded through the Canadian AgriScience Cluster for Horticulture 4, in cooperation with Agriculture and Agri-Food Canada's AgriScience Program, a Sustainable Canadian Agricultural Partnership initiative, the Fruit and Vegetable Growers of Canada (FVGC), and industry contributors.

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# Reducing Losses from Apple Pests with Alternative Control Strategies

LEAD RESEARCHER

**Suzanne Blatt**
Research scientist in entomology with Agriculture and Agri-Food Canada at the Kentville Research and Development Centre

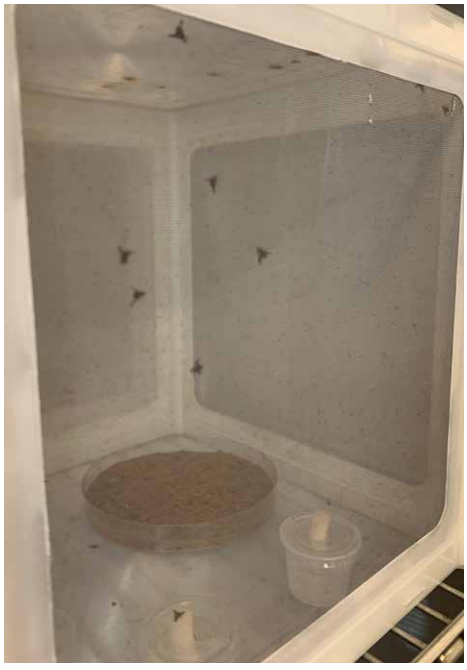
This research is working to find cultural, biological and sterile insect-release strategies to control bark beetles, leafrollers and apple magots on apple trees. To date, two of the three studies are underway including sterile insect release for control of apple maggot (SIR for AM) and cultural practices to manage ambrosia beetles. Cultural practices are management methods which are physical rather than chemical in nature, such as removing dead dying trees from an orchard.

Over the past year, as part of the SIR study, the ratios of sterile to wild flies needed to stop apples from being stung has been assessed. For the ambrosia beetles, researchers are reviewing which beetle species will attack young apple trees and what makes an orchard more susceptible to an attack. Dying apple trees have been collected from orchards with the emerging ambrosia beetles counted and identified. Researchers have also gathered beetles from dying trees in woodlots adjacent to orchards. There have been attempts to raise ambrosia beetle species for further study.

Over the winter, researchers will continue work on developing a cost-effective diet for mass rearing of apple maggots as part of the SIR work. The results from the field and laboratory ratio studies will be reviewed with next year's field trials planned accordingly. For ambrosia beetles, researchers will identify and count all collected beetles, data will be analyzed which will help with creating the plan for the next growing season.

## KEY TAKEAWAYS:

- SIR for AM — all work is being conducted on site at the AAFC Kentville Research and Development Centre in Nova Scotia.
- Ambrosia beetles — research is being done at commercial apple orchards across Ontario and in the Okanagan Valley of British Columbia.
- There are six ethanol traps set up at each of the ambrosia beetle locations in Ontario and British Columbia. Traps were checked weekly between May and September with beetles identified, counted and saved for further evaluation.
- The warm winter and early spring may have led to early emerging ambrosia beetles not being caught, as researchers didn't place traps until early or mid-May when first emergence usually happens.

FAR LEFT: A BugDorm where sterile flies emerge from sand post-sterilization in preparation for use in laboratory or field studies.
LEFT: A BugDorm containing 10 pairs of sterile flies and one pair of non-sterile flies in order to determine the ratio of sterile to non-sterile to prevent stings on apples.
Photos: Suzanne Blatt

# Apple Crop Load Management: Enhancing Thinning Predictability and Tree Response Through Advancements in Modelling, New Precision Thinning Products and Strategies, and Technology

LEAD RESEARCHER

**John A. Cline**
Professor of tree fruit physiology
at the University of Guelph

This research activity is aimed at thinning flowers or fruits on overloaded apple trees using new chemical thinners and technologies. Researchers are working to develop and use decision support systems to improve the management of apple crop loads. The researchers are also looking at artificial intelligent-based computer vision systems to aid in managing and measuring the response to crop load decisions.

At the Ontario Crops Research Centre in Simcoe, Ont. experimental treatments were applied to apple trees last spring. Throughout the growing season measurements of apple fruit growth and development were taken. Fruit was harvested in September with further data analyses happening during the winter.

At Walsh Farms in Berwick, N.S. a trial site with Gala and Honeycrisp apples was set up at a grower's orchard with the site and research activities led by Perennia. Throughout the thinning season decision support systems, RIMPro and BreviSmart, were monitored for accuracy. Thinning treatments were applied to full trees at the target fruit sizes. Fruit load of blossom clusters and the final number of fruits per cluster following natural and treatment-induced fruit drop were recorded. The research team also reported the time it took to hand-thin apples to the desired crop load.

To date it was found that the decision-support tool RIMPro's model predictions were only as reliable as forecasted. While the predictions fluctuated the models did give insights into the thinning process. The chemical thinners had notable activity in trials and throughout the industry and further evaluation will be completed this winter.

TOP: Initial counts of apple blossoms on May 15, 2024 at Walsh Farms in Berwick, N.S.
ABOVE: Apple blossom on trees at Walsh Farms in Berwick, N.S.
Photos: Michelle Cortens

Initial fruit sets on apple trees at Walsh Farms in Berwick, N.S.
Photo: Michelle Cortens

Ambrosia flowers at bloom on an apple tree at the Ontario Crops Research Centre in Simcoe, Ont. Photo: John A. Cline

## KEY TAKEAWAYS:

- The response of apple trees to experimental chemical thinners and thinning models is being evaluated.
- At the Ontario site, there was excellent bloom, heavy fruit set, and good growing conditions.
- At the Nova Scotia site, there was a good bloom and influence of chemical thinners. Model predictions were monitored and appeared to offer good insight but practical limitations were noted.

# Berry Research Activities

There is one research activity that is part of the berry group for the Canadian AgriScience Cluster for Horticulture Cluster 4. This research activity is focused on finding new berry varieties for growers across Canada.

## THE CLUSTER 4 BERRY RESEARCH ACTIVITY IS:

### ACTIVITY 6

### Canadian Berry Trial Network

LEAD RESEARCHER – Beatrice Amyotte, research scientist for small fruit germplasm development with Agriculture and Agri-Food Canada at the Kentville Research and Development Centre

This project is generously funded through the Canadian AgriScience Cluster for Horticulture 4, in cooperation with Agriculture and Agri-Food Canada's AgriScience Program, a Sustainable Canadian Agricultural Partnership initiative, the Fruit and Vegetable Growers of Canada (FVGC), and industry contributors.

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# Canadian Berry Trial Network

LEAD RESEARCHER

**Beatrice Amyotte**
Research scientist for small fruit germplasm development with Agriculture and Agri-Food Canada at the Kentville Research and Development Centre

The purpose of the Canadian Berry Trial Network (CBTN) is to look into how new and established berry cultivars will perform in the climates of typical berry growing regions of British Columbia, Ontario, Quebec and Nova Scotia. Fruit quality traits and yield potential are evaluated along with the economic competitiveness of new berry cultivars.

The CBTN has blueberry, raspberry, and strawberry varieties in replicated trials at agricultural research institutions in Nova Scotia, B.C., Ontario, and Quebec, as well in unreplicated trials at grower sites in B.C. The varieties include commercial standard cultivars, newly named cultivars, and numbered selections from Canadian and international breeding programs.

This summer, all four provinces harvested blueberry trials established during Cluster 3. There were 16 highbush blueberry varieties evaluated, including two numbered selections from the B.C. Berry Breeding Program, several recent releases from public programs and private breeding companies in Oregon, and some more well-known varieties developed in the north-eastern United States. Data collection is ongoing with preliminary yield results available this winter.

New trials of strawberries were planted in all provinces. These trials included 10 day-neutral and 10 June-bearing varieties. Strawberry trials were established in open fields in B.C., Quebec, and Nova Scotia, while in Ontario the day-neutrals were planted in a tunnel and tabletop system. The day-neutral strawberries will be harvested starting this fall while the June-bearing trials will be harvested in summer 2025.

New raspberry trials were planted in all provinces. The trials included eight floricane (summer fruiting) and 15 primocane (fall fruiting) varieties — a few varieties will be planted in 2025 as there were sourcing delays. The raspberry trials will be harvested in 2026.

Strawberry plants at the Agriculture and Agri-Food Canada Kentville Research and Development Centre in Nova Scotia.
Photo: Toban Dyck

Blueberry bushes at the Agriculture and Agri-Food Canada Kentville Research and Development Centre in Nova Scotia.
Photo: Toban Dyck

## KEY TAKEAWAYS:

- New varieties of strawberries planted this year included UC Golden Gate, UC Keystone, UCD Eclipse, UC Monarch and UC Surfline, which are new disease resistant release varieties from the University of California Davis.
- New raspberry varieties planted this year include three 'Cascade' series cultivars from the Washington State University breeding program, and 'Finnberry' developed by the USDA and Oregon State University.
- On-farm raspberry and strawberry variety trials were harvested this year.
- New advanced blueberry breeding selections were planted this year.
- The CBTN project team has been in contact with breeding programs in the U.S. to potentially access some of their new selections ahead of commercial release.

Blueberry bushes at the Agriculture and Agri-Food Canada Kentville Research and Development Centre in Nova Scotia.

Photo: Toban Dyck

# Field Vegetable Research Activities

There are two research activities that are part of the field vegetable group for the Canadian AgriScience Cluster for Horticulture Cluster 4. These two activities are focused on making soil more resilient and protecting vegetable crops against pests.

Due to changes within the research team, the report for Activity 7 — Increasing field vegetable yield and resilience to abiotic and biotic stresses through soil microbial engineering report will be posted at a later time.

## THE CLUSTER 4 FIELD VEGETABLE RESEARCH ACTIVITIES ARE:

### ACTIVITY 7

### Increasing field vegetable yield and resilience to abiotic and biotic stresses through soil microbial engineering

LEAD RESEARCHER – Herve Van Der Heyden, research scientist with Agriculture and Agri-Food Canada Saint-Jean-sur-Richelieu Research and Development Centre

### ACTIVITY 8

### Reduce risk strategies for cabbage maggot control

LEAD RESEARCHER – Renee Priya Prasad, associate professor and department head for agriculture at the University of the Fraser Valley

This project is generously funded through the Canadian AgriScience Cluster for Horticulture 4, in cooperation with Agriculture and Agri-Food Canada's AgriScience Program, a Sustainable Canadian Agricultural Partnership initiative, the Fruit and Vegetable Growers of Canada (FVGC), and industry contributors.

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# Reduce Risk Strategies for Cabbage Maggot Control

LEAD RESEARCHER

**Renee Priya Prasad**
Associate professor and
department head for agriculture
at the University of the Fraser Valley

Crucifers (crops in the cabbage family) provide numerous opportunities for Canadian vegetable growers, but are under attack by cabbage root maggots. In this research activity, the team is working to find new management tools, mainly insecticides, and strategies for how to use those insecticides with non-insecticide tools, so that growers will see decreased crop losses from cabbage root maggot.

This year four field trials were conducted from April to July in a single vegetable field in Abbotsford, B.C. This field had good pest pressure which is important for insecticide trials to be successful. Data is being analyzed from the fields.

Cabbage root maggot pupae were also collected from the different treatment plots to examine the natural enemies of cabbage root maggots. The number of pupae attached by either parasitoid beetles or wasps will be counted. This survey is to review whether some insecticide treatments are compatible with the biological control of the pupae. Compatibility of insecticides with biological control has been shown to be effective in other horticultural systems.

This winter, the team is focusing on data analysis, and developing insecticide treatment combinations for field tests starting in April 2025. This is especially important for rutabaga crops as they require season long protection from cabbage root maggots.

## KEY TAKEAWAYS:

- In 2024 field research was conducted in Abbotsford, B.C. with some field and lab work done in Agassiz, B.C. at Agriculture and Agri-Food Canada.
- Four trials were completed this year. A field day was held that was attended by 12 people, including growers and distributors.
- Crucifer crops include cabbage, kale, broccoli, Brussels sprouts, cauliflower, radishes, rutabagas and turnips.

On June 19, 2024 a field session was held in Abbotsford, B.C. to examine the field plots of the cabbage root maggot insecticide efficacy trials. Photo: Thomas Johnston

Close up of cabbage maggots on Brussels sprout roots.
Photo: Thomas Johnston

# Greenhouse Vegetable Research Activities

There are two research activities that are part of the greenhouse vegetable group for the Canadian AgriScience Cluster for Horticulture Cluster 4. These two activities are focused on protecting vegetables against pests and managing disease in tomatoes.

## THE CLUSTER 4 GREENHOUSE VEGETABLE RESEARCH ACTIVITIES ARE:

### ACTIVITY 9

**Developing a systems approach to pest management on greenhouse vegetable crops: mirid predator selection**

LEAD RESEARCHER – Roselyne Labbé, research scientist in greenhouse entomology with Agriculture and Agri-Food Canada at the Harrow Research and Development Centre

### ACTIVITY 10

**Novel approaches for the management of tomato brown rugose fruit virus (ToBRFV)**

LEAD RESEARCHER – Aiming Wang, research scientist with Agriculture and Agri-Food Canada at the London Research and Development Centre

This project is generously funded through the Canadian AgriScience Cluster for Horticulture 4, in cooperation with Agriculture and Agri-Food Canada's AgriScience Program, a Sustainable Canadian Agricultural Partnership initiative, the Fruit and Vegetable Growers of Canada (FVGC), and industry contributors.

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# Developing a Systems Approach to Pest Management on Greenhouse Vegetable Crops: Mirid Predator Selection

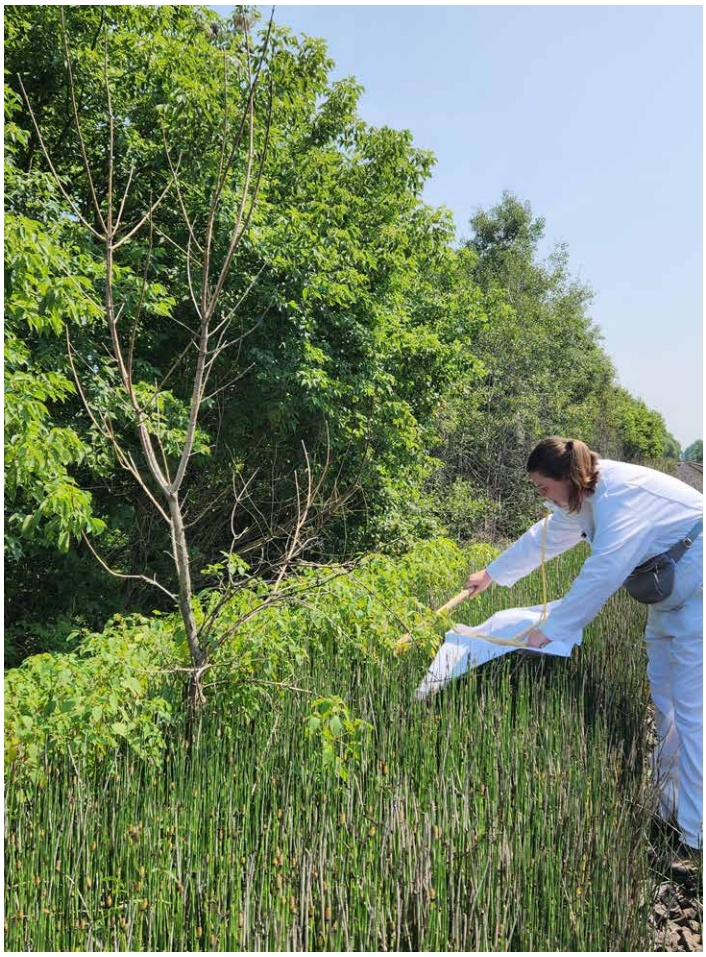
LEAD RESEARCHER

**Roselyne Labbé**
Research scientist in greenhouse entomology with Agriculture and Agri-Food Canada at the Harrow Research and Development Centre

To find new integrated pest-management strategies to protect greenhouse vegetable crops, a research team is studying three native North American mirid species: *D. discrepans*, *D. famelicus*, and *Macrolophus tenuicornis*, and one adventive species *Nesidiocoris tenuis*.

This year, colonies for three mirid species were initiated and two were bred. Over 60 lab assays were conducted to assess the zoophytophagy capacity of these predators. A greenhouse trial tested oviposition preferences and suitability of four host plant types for the four mirid species, finding promising preliminary trends. New details on host plant dynamics were found that could influence future integrated pest management programs with mirid bugs in greenhouses. There were also new mirid specimens collected from six locations in Ontario, increasing the genetic pool for future selections.

Starting this fall, there will be documentation of genetic differences among mirid colonies based on geographic origins and species done. This research will build on the Canadian National Collection's research, with further work happening next summer. This winter, breeding efforts will continue with the formation of new Isofemale lines from mirid colony sources. Phytophagy and zoophagy tests, as well as host plant suitability comparison trials, will be done.



Carly Demers, a PhD student working on the Developing a systems approach to pest management on greenhouse vegetable crops: mirid predator selection research activity, collects mirid species.
Photo: Roselyne Labbé

## KEY TAKEAWAYS:

- Collection sites are spread across Ontario and Quebec with research happening at two sites including the Agriculture and Agri-Food Canada Harrow Research and Development Centre in Ontario, and the Centre de Recherche Agroalimentaire de Mirabel in Quebec.
- To improve the success of applying selectively bred mirid species in commercial settings, commercial greenhouse trials will be conducted.
- Work is being done to create colonies of mirid predators with high pest predatory capacities and low plant damage. Laboratory bioassays are reviewing predation and plant damage — individuals with better traits in future generations are being chosen. Over six generations, selected strains will be compared to unselected ones identifying those with improved pest predation and reduced plant injury.

# Novel Approaches for the Management of Tomato Brown Rugose Fruit Virus (ToBRFV)

LEAD RESEARCHER

**Aiming Wang**
Research scientist with Agriculture and Agri-Food Canada at the London Research and Development Centre

Researchers are working to stop Tomato Brown Rugose Fruit Virus (ToBRFV) from threatening Canadian greenhouse tomatoes and peppers. This research activity is studying the infection process and working to develop novel genetic resistance to ToBRFV. Researchers want to better understand how ToBRFV overcomes broad-spectrum resistance given by Tm-22 and bring back Tm-22 -mediated resistance to ToBRFV.

To date, researchers have been able to create a tomato mutant population with more than 10,000 plants screened. There have been some promising lines found that are showing resistance or tolerance to ToBRFV infection. The ToBRFV coding sequences for P1, MP and CP have been cloned with four full-length cDNA clones created and confirmed as all being infectious on *Nicotiana benthamiana* model plant and tomato plants.

## KEY TAKEAWAYS:

- This research activity is happening at four sites including the AAFC London Research and Development Center in Ontario, AAFC Harrow Research and Development Center in Ontario, Vineland Research Farm in Ontario, and AAFC St-Jean-sur-Richelieu Research and Development Center in Quebec.
- Tomato leaf samples were collected at two tomato greenhouses in Quebec and sampling was also done at two tomato greenhouses in Ontario. The samples collected will be used to determine ToBRFV diversity.
- There have been promising tomato mutant lines with resistance or tolerance to ToBRFV identified.

Tomato plants infected with tomato brown rugose fruit virus (ToBRFV).

Tomato plants infected with typical tomato brown rugose fruit virus (ToBRFV) symptoms.

Photos: Aiming Wang

# Potato Research Activities

There are three research activities that are part of the potato group for the Canadian AgriScience Cluster for Horticulture Cluster 4. These three activities are focused on sustainability, soil health and finding new potato varieties for growers across Canada.

## THE CLUSTER 4 POTATO RESEARCH ACTIVITIES ARE:

### ACTIVITY 11

### National potato variety evaluation for sustainability, resilience and climate change

LEAD RESEARCHERS – Erica Fava, national potato variety trial coordinator and industry liaison; Jen McFarlane, soft fruits IPM coordinator and research coordinator with E.S. Cropconsult; and Katerina Jordan, associate professor at the University of Guelph

### ACTIVITY 12

### Regenerative and sustainable agriculture for climate change adaptation and carbon sequestration: rebuilding soil health and increasing crop productivity of Canadian potato production systems

LEAD RESEARCHER – Claudia Goyer, research scientist with Agriculture and Agri-Food Canada at the Fredericton Research and Development Centre

### ACTIVITY 13

### Positioning Canada's potato industry for improved sustainable production

LEAD RESEARCHER – Mario Tenuta, senior industrial research chair in 4R nutrient management and professor of soil ecology at the University of Manitoba

This project is generously funded through the Canadian AgriScience Cluster for Horticulture 4, in cooperation with Agriculture and Agri-Food Canada's AgriScience Program, a Sustainable Canadian Agricultural Partnership initiative, the Fruit and Vegetable Growers of Canada (FVGC), and industry contributors.

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# National Potato Variety Evaluation for Sustainability, Resilience and Climate Change

LEAD RESEARCHERS

**Erica Fava**
National potato variety trial coordinator and industry liaison

**Jen McFarlane**
Soft fruits IPM coordinator and research coordinator with E.S. Cropconsult

**Katerina Jordan**
Associate professor at the University of Guelph

The national potato variety evaluation is working to boost profits and sustainability for the Canadian potato industry by finding new potato selections with improved productivity, disease resistance and climate resilience. New selections are being compared to currently grown potato varieties across the major potato production areas of Canada.

This past summer was the second field season for this cycle of the research activity. Trials were planted and field data was collected. Based on feedback gathered at field days this summer there are some promising selections in the trials.

This growing season was more typical for most areas of the country compared to last year, with the exception being weather during the spring. In the east, it was very dry and much warmer than usual in spring allowing for earlier planting without many disruptions. The plants took more time to get going until the rain started though. In the west, it was a colder spring with more rain than usual in Manitoba. The cold and wet weather somewhat delayed planting.

Attendees at the Elora Research Station in Ontario potato field day on Aug. 21, 2024.
Photo: Ashley Robinson

The 2024 potato variety trials at the Elora Research Station in Ontario. Photo: Ashley Robinson

Attendees look at potato variety trials at the Elora Research Station in Ontario potato field day on Aug. 21, 2024. Photo: Matt McIntosh

## KEY TAKEAWAYS:

- Variety trials are done at locations across Canada including Harrington, P.E.I.; Fredericton, N.B.; Benton, N.B.; Simonds, N.B.; Ste-Croix, Que.; Lanaudiere, Que.; Elora, Ont.; Simcoe, Ont.; Winkler, Man.; Carberry, Man.; Outlook, Sask.; Lethbridge, Alta.; Vauxhall, Alta.; and Delta, B.C.
- Four potato lines have graduated from the AAFC program in 2023-2024 cycle and are now in industry trials. These lines have resistance to certain diseases. The four varieties include F160036-02, CV15129-1, F160025-03 and F160032-06.
- This winter, varieties will be tested to confirm resistance to diseases such as golden nematode, potato wart, PVX, PVY, Fusarium dry rot and late blight, as well as for resistance to Colorado potato beetles.
- The potato lines will be tested over winter for the retention of their processing quality through storage and their storage potential over a period of 12 months.

# Regenerative and Sustainable Agriculture for Climate Change Adaptation and Carbon Sequestration: Rebuilding Soil Health and Increasing Crop Productivity of Canadian Potato Production Systems

LEAD RESEARCHER

**Claudia Goyer**
Research scientist with Agriculture and Agri-Food Canada at the Fredericton Research and Development Centre

Regenerative and sustainable agricultural practices (RSAPs) are being studied in several locations across Canada to mitigate soil degradation and loss of bio-diversity caused by intensive farming practices and ensure potato farms' long-term viability.

This year, the four experimental hubs consisting of seven fully replicated field sites with a block design were established and maintained. Fifteen flagship farms across Canada also tested different RSAPs similar to the hubs. At the 15 flagship farms, growers are evaluating the challenges and benefits of using RSAPs. The trials at the experimental hubs and flagship farms were successfully established and maintained over the growing season of 2024.

There were several meetings organized to discuss the experimental design, soil sampling protocol and methods of analysis among researchers and industry partners. Other meetings discussed how to perform a global analysis to evaluate the effectiveness of short two-year systems compared to longer term three or four-year systems, and low versus high plant diversity using samples collected in the trials. Plants, soil and gas samples were collected at the four experimental hubs and 15 flagship farms over the summer and fall.

Over the winter, soil and plant analyses will be done on collected samples with the data analyzed.

## KEY TAKEAWAYS:

- RSAPs being studied include cover cropping, soil amendments, and livestock grazing.
- The four experimental hubs are located at the McCain Farm of the Future in Florenceville, N.B.; AAFC Harrington Station in P.E.I.; Dolbec Farm in Saint-Ubalde, Que.; Progest in Sainte-Croix, Que.; and Guelph University at the Elora and Simcoe Research Stations in Ontario.

TOP: Claudia Goyer digging potatoes in a field at the McCain Farm of the Future in Florenceville, N.B. in August 2024. Photo: Claudia Goyer, AAFC
ABOVE: A field of potatoes that is almost ready to harvest at the McCain Farm of the Future in Florenceville, N.B. in August 2024.
Photo: Sean Whiney, AAFC

- The 15 flagship farms are located at two farms in P.E.I. led by Ryan Barrett with the P.E.I. Potato Board, one farm in New Brunswick led by McCain Foods, six farms in Quebec and one farm in Ontario led by Andre Gagnon with Fancy Pak, four farms in Manitoba led by Amy Unger with MHPEC and McCain Foods, and one farm in Alberta led by McCain Foods.
- The growing season was good with less rainfall happening in Eastern Canada in 2024 compared to 2023. It was easier to plant crops in the spring as well as reduced scheduling issues between farm operations and scientific activity over the growing season.

# Positioning Canada's Potato Industry for Improved Sustainable Production

LEAD RESEARCHER

**Mario Tenuta**
Senior industrial research chair in 4R nutrient management and professor of soil ecology at the University of Manitoba

In this research activity ways to improve nitrogen use efficiency in Canadian processing and table potato production is being studied. Nitrogen fertilizer use is a constraining factor in sustainable potato production and this research is looking for ways to reduce usage.

The research team is working to determine the environmental and agronomic performance indicators for fresh and processing potatoes in Canada. Emissions efficiency and nitrogen management practices on potato farms across the country is being studied.

The first field trial season happened in 2024. There were no major issues reported at any of the research sites across the country and researchers are expecting average yields. Results will be released in April and will include agronomic and environmental sustainability indicators. Over the winter samples will be processed with analyses done on them.

## KEY TAKEAWAYS:

- Replicated field trials are being done at research sites in Prince Edward Island, New Brunswick, Manitoba and Alberta.
- No major issues were reported at research sites during the 2024 growing season.
- Analyses on samples this winter will include agronomic and environmental sustainability indicators.

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