



Apple Research Activities

The apple group has two research activities with the Canadian AgriScience Cluster for Horticulture Cluster 4. These two activities are focused on helping 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 and new precision thinning products, 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.



Reducing Losses from Apple Pests with Alternative Control Strategies



LEAD RESEARCHER

Suzanne Blatt

Research entomologist with Agriculture and Agri-Food Canada at the Kentville Research and Development Centre

This research is working to reduce apple crop losses from pests such as apple maggot, ambrosia beetles and leafrollers. The research team has been investigating a protocol for sterile insect release for control of apple maggot (SIR for AM). Ambrosia beetles are being identified in apple orchard agroecosystems, along with new methods to manage the pest. Researchers are also working to find a sustainable non-pesticide tool for management of leafrollers. These projects are all meant to identify a non-pesticide option for control of apple pests across Canada.

The final ratio experiments were completed in March 2026 for SIR for apple maggot control research. With the ratio experiments finished, the research team now has a better understanding of the mass rearing needs for this strategy to be used in the field.

The biocontrol for leafrollers research is in its final year with field trials at four commercial sites—two in Nova Scotia and two in Quebec. The research teams

are working to complete biocontrol agent releases and conduct damage assessments at each site.

There is still one more year to go for the landscape management for ambrosia and bark beetles research. Identification of species captured during summer 2025 has happened. Landscape factors were recorded for orchards in Ontario with modification strategies being developed. Sampling for bark beetles in British Columbia and Ontario orchards will continue over the remaining research time, along with identification of beetles. Landscape modifications will be implemented as required.

KEY TAKEAWAYS:

- The final ratio experiments were completed in March 2026 for SIR for apple maggot control research.
- The biocontrol for leafrollers research is in its final year. Field trials are happening at commercial sites in Nova Scotia and Quebec.
- There is still another year remaining for the landscape management for ambrosia and bark beetles research. Sampling for bark beetles in British Columbia and Ontario orchards will continue, along with identification of beetles.



An apple maggot on Aug. 6, 2026.



Apples damaged by codling moths at a Nova Scotia orchard on Aug. 6, 2026. The biocontrol for leafrollers is providing codling moth control also. Photos: Toban Dyck





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



LEAD RESEARCHER

John A. Cline

Professor of tree fruit physiology
at the University of Guelph

This research activity is focused on thinning flowers or fruits on overloaded apple trees using new chemical thinners and technologies. This is the last year of field work at Walsh Farms in Berwick, N.S. while another year of field work will happen at the Ontario Crops Research Centre in Simcoe, Ont.

In Simcoe, the spring return bloom was assessed on trees that were part of 2025 experiments. Thinning treatments in six chemical thinning experiments were applied in the spring. Four experiments from 2025 were repeated to ensure the results are repeatable over two years. Two new experiments testing the effects of surfactants and a spray solution pH to improve the efficacy of Accede sprays are happening—Accede sprays haven't performed well in earlier experiments. Another experiment is investigating tank-mix combination sprays of Brevis (metamitron) with various rates of Sevin XLR (carbaryl) and MaxCel (6-BA) to improve the efficacy of thinning with single sprays of Brevis.

In Nova Scotia, return bloom was assessed and recorded in the spring on trees that had been part of the previous year's trials. Thinning trials in both Honeycrisp and Gala orchards were repeated for this growing season. Additional Brevis treatments were incorporated into the trial to further assess performance. Forecasts and final recommendations from the decision-support systems RIMpro and BreviSmart are being monitored to evaluate predictive accuracy and identify any regional limitations under local growing conditions.



Thinned apple tree branch at the Nova Scotia site on Aug. 7, 2026.



The distance that should be between apples on a branch at the Nova Scotia site on Aug. 7, 2026. Photos: Toban Dyck





With Accede applied later than other registered thinning products, researchers are exploring the environmental and management factors that influence its effectiveness. At the same time, the first commercial growing season for Brevis offers a unique opportunity to evaluate thinning strategies under real-world conditions.

In Nova Scotia and Ontario, the growing season started with cooler-than-average temperatures and slow heat accumulation, delaying early development. However, conditions quickly shifted, and heat units accumulated rapidly, compressing management timelines and creating challenges for orchard decision-making.

In Ontario, fruit drop was delayed after an extended post-bloom period of moderate temperatures with higher-than-average solar radiation. These conditions made it more difficult to remove fruit with chemical thinners. In Nova Scotia, fruit drop has been significant, which may lead to lower final crop loads. However, precipitation has remained limited across much of the region, with soil moisture reserves strained from last year's drought.

Evaluations in both regions will focus on how effectively treatments reduced fruit set and hand thinning requirements. Harvest evaluations will provide key insights into fruit quality, including weight, colour and grade.

KEY TAKEAWAYS:

- This is the first growing season that Brevis is registered for commercial use.
- This is the last year of field work at Walsh Farms in Berwick, N.S. while another year of field work will be done at the Ontario Crops Research Centre in Simcoe, Ont.



An overloaded apple tree branch at the Nova Scotia site on Aug. 7, 2026. Photo: Toban Dyck

- Two new experiments in Ontario are testing the effects of surfactants and a spray solution pH to improve the efficacy of Accede sprays—Accede sprays haven't performed well in earlier experiments.
- Tank-mix combination sprays of Brevis with various rates of Sevin XLR and MaxCel are being tested in Ontario to improve the efficacy of thinning using single sprays of Brevis.
- Thinning trials in both Honeycrisp and Gala orchards were repeated for this growing season in Nova Scotia. Additional Brevis treatments are being done to further assess performance.

