



## 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 aims to reduce apple crops losses from pests such as apple maggot, ambrosia beetles and leafrollers. The research team is investigating a protocol for sterile insect release for control of apple maggot (SIR for AM) to determine the potential for this strategy as a viable option for management. 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. The purpose of each aspect is to identify a non-pesticide option for control of apple pests across Canada.

Throughout the winter, SIR experiments focused on optimizing an artificial diet to facilitate the mass rearing of apple maggot. Last year, ambrosia and bark beetles were collected from the field and identified. Landscape data was analyzed to determine options to explore in this growing season.

The SIR research team is identifying the ratio of sterile to wild flies needed to reduce stings from apple maggots under field conditions. This is the final year for this work, and a recommendation on the

commercial potential will be made. Landscape factors have been identified and trials are underway to review modifications needed to reduce ambrosia and bark beetle populations. The release device for leafroller biocontrol is being field tested in Quebec with field trials in Nova Scotia and British Columbia planned for next year.

The ambrosia and bark beetle research team has discovered the presence of a new species in Ontario. The team discovered the species causing damage in B.C. is different from species in Ontario. This discovery helps researchers better understand the impact species may have on orchards at different times and in different ways. This research will allow growers to target their management practice for the species causing damage in their region.

### KEY TAKEAWAYS:

- The SIR research team is identifying the ratio of sterile to wild flies needed to reduce stings from apple maggots, with a recommendation on commercial potential to be made soon.
- Landscape factors have been identified, and trials are underway to identify modifications needed to reduce ambrosia and bark beetle populations.
- Researchers discovered that the species of ambrosia and bark beetles causing damage in British Columbia is different than the Ontario species.



The biocontrol agent in the blue barrel is hooked into the existing spray equipment with the green hoses channeling the agent through the sprayers. Photo: Daniel Cormier



Insecticide treatments have been applied to tree bolts with ambrosia beetle entry holes circled.

Photo: Justin Renkema

