



Reducing Losses from Apple Pests with Alternative Control Strategies



LEAD RESEARCHER

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This research is working to find cultural, biological and sterile insect-release strategies to control bark beetles, leafrollers and apple maggots 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

