



Reducing Losses from Apple Pests with Alternative Control Strategies



LEAD RESEARCHER

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With ongoing reviews and deregistration of pesticides, growers are looking for ways to reduce their pesticide use to control pests in apple crops. In this research activity, which is a continuation of work done in Cluster 3, cultural, biological and sterile insect-release strategies for controlling bark beetles, leafrollers and apple maggots are being studied. Novel implementation of these strategies to target specific pests will provide additional options for insect pest control.

One goal of this research activity is to reduce pesticide use in apple production. Biocontrol agents will be used in conjunction with softer pesticides to reduce the potential for pesticide resistance development.

Researchers are looking into how changing the landscape around orchards may decrease bark beetle populations, leading to increased tree survival and lessening the need to replant parts of an orchard. They are also researching how sterile insect release for apple maggot control can complement management programs currently used by growers.

KEY TAKEAWAYS:

- Sterile insect release for apple maggots may complement current management programs, reducing annual pesticide use.
- Modifying landscapes around orchards may reduce bark beetle populations, increase the survival of trees and reduce the need to replant parts of the orchard.
- A biocontrol agent against leafrollers may complement the use of softer pesticide products, reducing the likelihood of resistance development and extending the registration life of sustainable products.
- Between September 2023 and March 2024, the research team was able to do sterile insect release of apple maggots with 19 different diets tested. Evidence of egg laying was found, with both eggs and live young maggots being removed from the apples. The best diet resulted in a pupation rate of 60 per cent when live maggots were added to the diet. The addition of eggs to the diet resulted in a lower success rate.



A cut open apple infected with apple maggot tunnels and larva.

Photo credit: Kim Hiltz



Apple maggots sitting on apples. Photo credit: Kim Hiltz

