

Consultant's Update

Ridge Quest



An adult apple maggot on hawthorn tree fruit. Credit: Hannes Schuler.

Insect of the Week

Apple Maggot



----- KELSEY BENTHALL

Apple maggot is a key pest in Michigan apples, with pressure peaking from July through harvest. Effective management hinges on timely scouting, degree day modeling, and well-timed insecticide applications. Apple maggot overwinter as pupae approximately 5 cm below the soil surface. Adults emerge from mid-June to early July in Michigan (900 degree-days base 50°F). Peak adult flight occurs between 1,400 and 1,700 degree-days base 50°F. Adults are black with three to four white stripes on their abdomens, and a distinctive F in their wing pattern.

Newly emerged adults eat honeydew from aphids and other insects found in orchards. After seven to ten days, the adults become sexually active and begin to congregate on fruit. Females puncture fruit and lay eggs just

beneath the skin. Egg-laying injury creates small dimples on the fruit surface, appearing as fine pinprick depressions that resemble enlarged lenticels. Legless cream-colored larvae emerge after two to ten days and have two black hook mouthparts on their distinctively pointy head. Larvae tunnel throughout the apple, causing the classic brown, winding trails that make fruit unmarketable. Damage from apple maggot larvae can eventually lead to soft and rotting fruit.

Monitoring is essential in apple maggot management. Yellow sticky traps baited with ammonium may be placed in orchards to monitor apple maggot after they emerge and before they begin laying eggs.

It is recommended to deploy red sphere sticky traps (Ladd traps) at head height in mid-June (or approximately 800 degree-days base 50°F) to monitor for sexually mature apple maggot since the red sphere will look like a ripe apple for egg laying. The more traps, the better; however, a minimum of two traps per orchard should be placed along historically active rows. Traps should be checked weekly, if not bi-weekly, until late August or until harvest. Traps are most efficient when placed in sunny areas on the border of orchards.

It is highly recommended to remove hawthorn and abandoned apple trees within 400 yards of orchards to reduce apple maggot infestations. All dropped fruit should be picked up from the orchard floor instead of leaving it to rot. Apple maggot larvae can complete development in fallen fruit, move into soil to pupate, then emerge the following season. Clay can act as a visual repellent for apple maggot adults since females are attracted to the red color of apples. Insecticide is justified when traps capture one adult. Insecticide applications are recommended at the first sign of trap capture, mid-July, and mid-August. Make sure to rotate your insecticides' mode of action to reduce selection for resistance. For exact product recommendations, see MSU's Michigan Fruit Management Guide (E 154). Organic growers have limited options for chemical management. One OMRI-approved option is GF-120 Fruit Fly Bait with Qalcova™ active.

From The Orchard

The latest local news

----- CHANDRA BUNKER

We are currently in the middle of codling moth generations. Flight activity has been slower than anticipated this week despite degree day accumulations running ahead of schedule.

Oblique banded leafroller larvae have been present in terminals for several weeks, with pressure varying by block. Oriental fruit moth is now past egg hatch for its third flight, which in some blocks was larger than the first two flights this season. San Jose scale is starting to show up in a few blocks, indicating that some individuals may be getting through otherwise well-timed treatments. Dogwood borer is also flying and appears to be at relatively high levels in certain apple blocks.

All these pests are being tracked through monitoring programs, including traps, visual scouting, or both. Proper trapping is critical. Most programs rely on large delta traps with pheromone lures. It is important to replace liners and lures when they become dirty or exceed their effective lifespan. There have been situations where expected pest activity was not detected in traps, which can sometimes be traced back to lure performance. Switching to a different manufacturer's lure of the same type can help confirm whether lures are functioning properly. Variability between lures does occur and can impact how reliable trap counts are for making threshold-based decisions. In mating disruption blocks for codling moth and oriental fruit moth, it is important to use two types of traps: one set with lures that can be used to establish treatment thresholds, and another set to monitor overall activity. The lures monitoring overall activity are useful for detecting presence but should not be relied on for biofix and threshold timings. Using both provides a more accurate picture of pest pressure under disruption.