MONITORING GUIDE

APPLE MAGGOT

Rhagoletis pomonella

Apple Maggot

The Apple Maggot is similar in size to a housefly, and has distinctive wing markings, a number of white bands on the abdomen and characteristic red eyes.

Suggested Traps

Red Ball Trap

Product No. 2050217

Yellow AM Trap

Product No. 2050316

Yellow Sticky Trap

Product No. 2050213

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GENERAL INFORMATION

Monitoring traps are used not only to confirm the presence of certain insect pests in the field, but also to identify the insect's current lifecycle stage. Only the adult (moth) stage of the insect is caught in the trap, so users must understand the insect lifecycle in order to know when to expect the other stages (egg, larva and pupa). Correct placement and frequent inspection of the traps is critical and will confirm the source of infestation. Trapcatch information ensures that insect control methods can be implemented at the appropriate time. Regular recording of the trapcatch data will enable the user to manage the insect pest effectively.

LIFE HISTORY

The Apple Maggot is a common pest in Eastern Canada, attacking apples, plums, cherries, pears**,** peaches and apricots. The insect usually has one generation per year, but on early maturing apple varieties there may be two generations in some years.

The Apple Maggot over-winters in the soil as a pupa, which develops into an adult fly as the soil temperature rises. The adult emerges from the soil from late June to mid-September, with peak emergence activity occurring in early August.

The adult is about the same size as a housefly and has characteristic red eyes and distinctive wing markings. While wing markings are similar to those of the Cherry Fruit Fly, the end of the Apple Maggot's wing usually has a clear unmarked zone and there are 3(male) or 4(female) white bands on the abdomen.

Within a week or so of emergence, the apple maggot flies become sexually active. After mating, the female deposits between 300-500 eggs singly under the skin of the fruit. Within 3-7 days the larvae emerge from the egg and burrow through the pulp of the fruit, leaving a winding brown trail through the flesh.

The period of larval development in the fruit usually lasts for 3-5 weeks, with the infested apples finally falling to the ground. The larvae then leave the fallen fruit, and enter the soil to a depth of 2-5 cm where they pupate. Some pupae may remain in the soil for up to 5 years before hatching out as adult flies.

TRAP PLACEMENT

Two types of trap are used against the apple maggot adult flies. The first of these is a **Yellow AM or Yellow Sticky Trap**, which is only attractive to the adults for the first few days after their emergence, while they are feeding and beginning to mature sexually. The second and more important type of trap is the sticky **Red Ball Trap**. The ball trap attracts sexually mature females looking for a place to deposit their eggs, and when they do so, they become trapped on the sticky coating of the trap. In order to further enhance the attractiveness of the red ball trap, it is strongly recommended that ***Apple Essence lures*** also be placed in the orchard.

Although the Apple Maggot fly may hatch out in the orchard, it will tend to move into the hedgerows to find wild host trees before returning to the orchard. As the insect returns to the orchard, it encounters suitable egg-laying areas along the orchard perimeter, which explains in part why 'edge' damage is often more severe. It is important to recognize this fact when using monitoring traps, since the first 'line of defence' should be either on the outer edge of the orchard or even in the adjacent hedgerows.

Hang one Red Ball trap every 10 - 20 metres around the perimeter of the orchard. If severe damage has been encountered in the past, place additional traps in the central part of the orchard. If using the Red Ball trap in an organic farming operation, attach 3 or more Red Ball traps per standard tree, and at least one ball trap per dwarf or semi-dwarf tree. Hang the ball traps at eye level and clean away foliage for about 1/2 metre around the trap to make it clearly visible to the Apple Maggot fly.

The Apple Essence Lure greatly enhances the effectiveness of the Red Ball trap when placed at 10 metre intervals near the trap. The Apple Essence lure will remain effective for the entire season, and will not need replacing until the following year. The Red Ball trap is re-usable and will give many years of service. If the trap becomes covered with flies or debris it should be washed off with mineral spirits and re-coated with the non-drying adhesive. Sometimes the application of two thin coats of adhesive is preferable to one single coating.

The yellow traps are best placed along the outside edge of the orchard or in adjoining hedgerows, since they catch the early emerging insects on or before their return to the orchard.

Traps should be inspected twice a week, and the **captured flies scraped off the trap each time**. Keep a record of the trap catch for each location and mark this information on your orchard map in order to pinpoint areas of high insect populations.

The guideline for insecticide application is 7-10 days after the first catches on the yellow traps or immediately after the first catch on the Red Ball trap. If using the Apple Essence Lure, the Red Ball trap catch will be about 5 times greater so the spray decision can be based on a trap catch of 5 flies rather than one.

These guidelines are only general in nature, since different locations will determine different courses of action.

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