

# Do You Have a Blueberry Maggot Problem?

Blueberry maggot populations are spotty. It's not fully understood why, but you may have maggots in residence while another nearby farm does not.

Infested fruit often don't show obvious symptoms but the maggots have a nasty habit of floating to the top of jams and crawling out into breakfast cereal.

## Traps Detect the Problem Early

With traps you can detect infestations early. Maggot populations can build up to problem levels over several years. The traps allow you to detect the presence of adults before you notice a serious problem in the fruit.

Traps also help you to pinpoint the best time to spray for control without wasting insecticides.

## Traps Catch Adult Flies

If maggot flies are present in the planting they start to emerge as the fruit begin to turn blue, and continue to emerge for more than a month.

The mated females start laying eggs just under the skin of the coloring fruit 7-10 days after emergence.

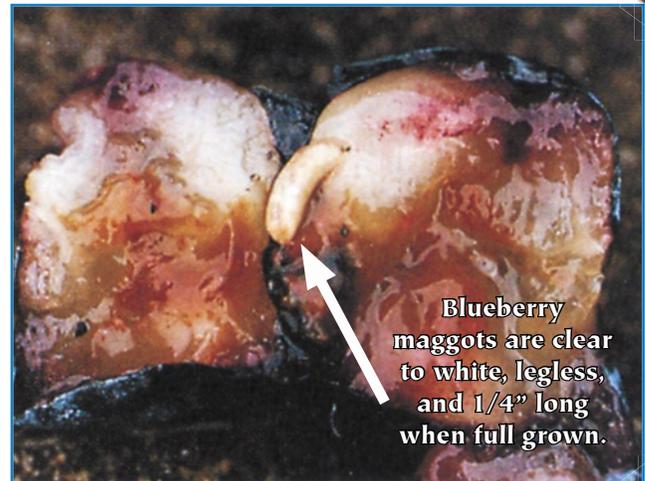
Eggs hatch in about 7 days, and they feed inside the fruit for about 3 weeks.

Young maggots are almost undetectable in the fruit. They start out tiny and clear, but as they mature they turn white and make the berry soft from their feeding and tunneling.

The early maggots are mature and ready to drop to the ground to pupate for the winter about a month after egg laying or 5 weeks after the first flies are caught in the traps.

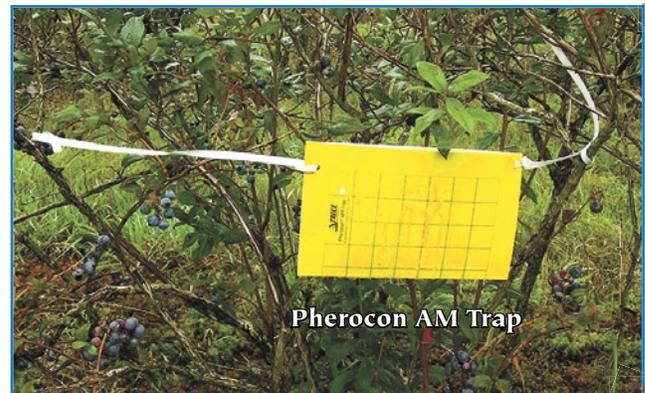
## How Traps Work

Flies are attracted to traps because of their yellow color and the bait smells like a delicious meal of rotting fruit (ammonium acetate is the bait used). See the reverse side of this sheet for detailed trap use instructions.

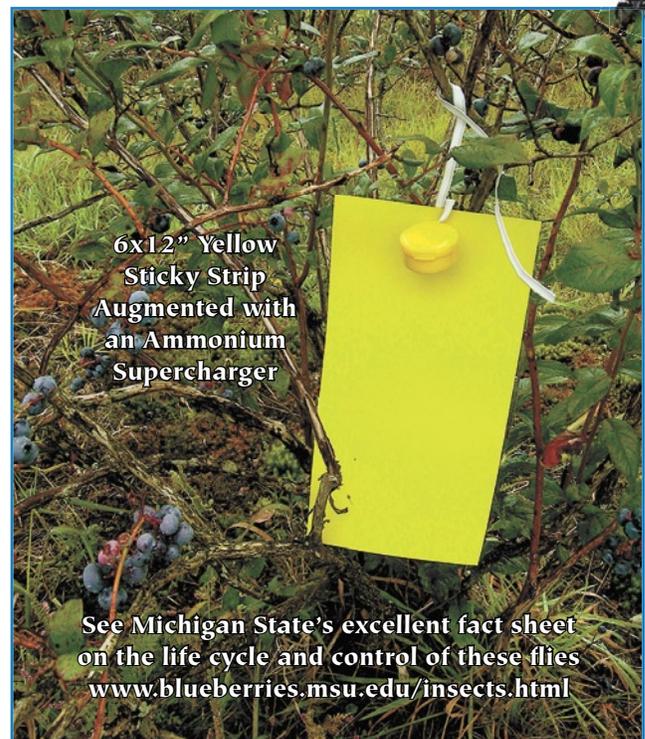


Blueberry maggots are clear to white, legless, and 1/4" long when full grown.

Photo: NRAES Blueberry Production Guide



Pherocon AM Trap



6x12" Yellow Sticky Strip Augmented with an Ammonium Supercharger

See Michigan State's excellent fact sheet on the life cycle and control of these flies [www.blueberries.msu.edu/insects.html](http://www.blueberries.msu.edu/insects.html)

# Trap Directions

## How to make spray decisions

Adult maggot flies emerge and lay eggs from June until August. Traps allow you to see when the first maggot flies have emerged. The timing is crucial because the only window for control with insecticides is to have it on the fruit as the female lays her eggs in the blueberry.

Apply the first spray within a week after the first sustained catch (several flies per week, not just one or two lone flies), and continue according to the insecticide label recommendations.

Since the flies emerge over a two-month period and lay eggs on ripening fruit, spraying for maggot control involves multiple sprays with a low residual/short days-to-harvest product (refer to the Cornell Guidelines for registered materials).

## Placing traps in fields

1. Put traps out just before the first berries start to color.
2. Put traps a few rows in from the hedgerows.
3. Put a trap near wild blueberries if you have them nearby. Maggots are known to emerge from wild plantings earlier than from cultivated plantings.
4. Hang the traps from a branch of the bush, tied so they will not flap and stick to leaves. You could also hang traps from posts so they are less than a foot above the canopy.
5. Use at least 2 traps per field or 2 traps per 5 acres
6. Place traps in the blueberry field in a place convenient to find and check. Marking the end of the row will save you time finding the trap later.
7. Change traps when they get too full of insects or debris to catch new flies (usually 2-3 weeks, unless you mow and the clippings cover the trap). If you're just monitoring for the beginning of adult emergence for spray timing, you can remove the traps after you've found the first 'sustained catch' (not just the first one or two flies, but consistent catch of several flies per week).

## Checking the traps

- When you know what you're looking for, it takes about 10 minutes to walk out into your field and check the trap.
- Check the traps at least twice weekly or every other day when you're looking for the earliest emerging adults.
- Traps will catch a lot of insects, especially flies.
- Look for flies with dark patterns on their wings, smaller than houseflies, bigger than mosquitoes. Learning what the fly looks like can be confusing at first, but when you learn the wing pattern you'll be able to pick it out. The wings have dark brown-black heavy stripes, with distinct (not fuzzy) edges. The very tip of the fly's wing is clear.

## Checking for fruit infestation

If you're curious how much fruit infestation a planting has, it is easy to sample fruit to calculate percent infestation.

Collect batches of 100 fruit from several places in the planting. To collect fruit, walk down an isle and grab a couple berries from each plant, counting as you go.

Spread each batch of fruit out over a screen that is suspended over some sand. Leave in a place where animals and other insects won't get the berries for 4 weeks. Sieve the sand and count the pupae that have dropped out of the berries into the soil for overwintering. The number of pupae divided by blueberries collected is the percent infestation.

## Trapping Supplies

Great Lakes IPM  
10220 Church Road NE,  
Vestaburg, Michigan 48891  
Phone: 989-268-5693  
Fax: 989-268-5311  
email: [glimp@nethawk.com](mailto:glimp@nethawk.com)  
Website: <http://www.greatlakesipm.com>

There are other suppliers. The same type of traps can be used for apple maggots, so check with orchard supply companies.

For our New York State IPM field trials, we tried two types of traps. The Pherocon AM traps that are yellow, coated with a sticky material, and scented with ammonia (a feeding attractant). They cost about \$1.75 each when bought in a case of 50. The scent lasts 7-10 days. We tried adding the ammonium superchargers (little containers of bait enhancers that you hang with the trap, cost \$0.65 each) to the Pherocon traps after they had hung in the field for a week, but we found that by the time the scent ran out on the original trap, the trap was usually so full of insects that we replaced the whole thing rather than just adding more scent.

We also tried 6x12" yellow sticky strips, at about \$1.20 each, augmented with the ammonium superchargers. These baited traps caught flies effectively, and had twice as much sticky area as the Pherocon AM traps. The cost isn't significantly different between these two types of traps when bought in small quantities. When purchased in bulk the sticky cards plus ammonium chargers would be cheaper, but not by a lot.

Great Lakes IPM also sells Rebell yellow trap, which is a more durable (and expensive) model of a yellow sticky trap, but we found that the thought of cleaning off the trap and reapplying new sticky material was so odious that we never got around to it, so the cheaper disposable traps were more practical.

