



# Pest Alert

Plant Protection and Quarantine

## Box Tree Moth (*Cydalima perspectalis*)

The box tree moth is an invasive pest that primarily feeds and completes its life cycle on boxwood species (*Buxus* spp). In its native range, it also feeds on burning bush (*Euonymus alatus*), Japanese spindletree (*E. japonicus*), purple holly (*Ilex chinensis*), and orange jessamine (*Murraya paniculata*) once all nearby boxwoods are completely defoliated.

### Distribution and Spread

The box tree moth is native to temperate and subtropical regions in Asia. It was first reported in Europe in 2007, after which it spread rapidly across European countries and into Western Asia and Northern Africa. In 2018, it was documented in Canada, and in 2021, the U.S. Department of Agriculture (USDA) confirmed the presence of the moth in Niagara County, NY, near the Canadian border. The rate of spread for the box tree moth has varied since its introduction in Europe, with some cases peaking at 96 miles per year. Long distance movement of the box tree moth across Europe occurred primarily through the movement of infested boxwood plantings.

Box tree moths are highly mobile and are good fliers. Natural spread of this moth in Europe is about 3 to 6 miles per year. One analysis from Europe concluded that natural dispersal from continental Europe to the United Kingdom was possible, suggesting sustained adult flights of over 20 miles.

### Damage

In 2014, boxwood made up 15 percent of broadleaf evergreen sales in the United States, and the estimated value was \$126 million (USDA-NASS, 2015). Boxwoods are



Adult moths (top and bottom left), damage (bottom)

typically planted as ornamentals and used for edging, as hedges, and/or clipped into different shapes to make topiaries. The box tree moth can cause heavy defoliation of boxwood plants if populations are left unchecked. Defoliation of existing and new growth can kill the plant. If no foliage is available, larvae have been observed feeding on the bark, which can cause branches or the entire plant to die.

### Description

Adult box tree moths generally have white bodies with a brown head and abdomen. Their wings are white and slightly iridescent, with an irregular thick brown border spanning 1.6

to 1.8 inches. Some adults have completely brown wings with a small white streak on each forewing. Males and females show both colorations.

The eggs are pale yellow and average 0.04 inches in size. They are laid in flat clusters of about 5 to 20 on the underside of boxwood leaves. As they mature, a black spot appears marking the larval head.

Newly hatched larvae have black heads and are green to yellow in color. As they age, dark brown stripes develop on the body. The most mature larvae are about 1.6 inches long and have thin white and thick black stripes and black dots outlined in white along the length of the body.

Pupae develop inside a silk cocoon and are 0.6 to 0.8 inches long. They are initially green, with black stripes on the back, and turn brown as they mature.

### Life Cycle

Adult female box tree moths lay their eggs singly or in clusters of about 5 to 20 in a gelatinous mass on the underside of boxwood leaves. Box tree moths overwinter as larvae. Once temperatures rise, overwintering larvae emerge and typically begin feeding in March, continuing until they pupate in late April to early May. As they develop, they spin silken webs to hold leaves together and create protected areas to feed. They tend to feed on leaves in the lower portion of host plants but reside in the upper portion and remain active until September or October.

Pupation occurs on the host leaves in silk cocoons. If the boxwood host is defoliated, pupation may occur away from the host plant using leaves from the surrounding area. Pupae will typically first appear in April or May and will be present continuously through the summer and into the fall, depending on the local climate and timing of generations.

Adults first emerge from the overwintering generation between April and July, depending on climate and temperature. Subsequent generations are active between June and October. Adults typically live for 2 weeks after emergence.



Caterpillars, webbing, and frass (top); pupa (bottom left); magnified egg masses (bottom right)

### Where To Look

Signs of damage may not appear at the beginning of an infestation because young larvae hide among twigs and leaves. Larvae skeletonize the leaves and feed on the bark, causing defoliation and dryness, leading to the plant's death. Signs of feeding include green-black frass (excrement) and webbing.

The female moths lay their eggs on the underside of the leaves of boxwoods.

### Report Your Findings

If you find an insect that you suspect is the box tree moth in New York, please submit an online report to have the specimen identified properly:  
[www.arcg.is/1Df8Se](http://www.arcg.is/1Df8Se).

For questions, please call USDA at 1-800-249-2363. You may also contact your local Extension office or State Plant Regulatory Official.

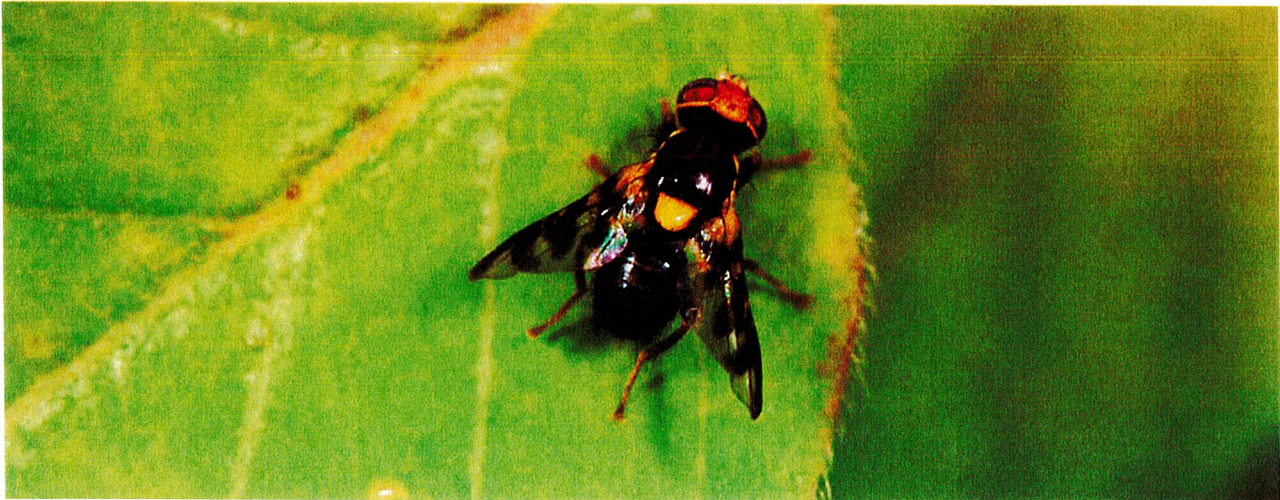
To locate an Extension specialist near you, go to the USDA website at [www.nifa.usda.gov/Extension](http://www.nifa.usda.gov/Extension). A directory of State Plant Regulatory Officials is available on the National Plant Board website at [www.nationalplantboard.org/membership](http://www.nationalplantboard.org/membership).



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Animal and Plant Health Inspection Service  
Plant Protection and Quarantine

## European Cherry Fruit Fly (*Rhagoletis cerasi*)



Adult European cherry fruit fly (Biopix, S.D. Lund, [www.biopix.com](http://www.biopix.com))

European cherry fruit fly is the most serious pest of cherries in Europe. The fly attacks ripening fruit, causing it to rot and fall off the tree. In heavily infested areas, the fly can destroy up to 100 percent of cherry and other host plants if left uncontrolled.

### Distribution

European cherry fruit fly is found throughout Europe and in parts of West and Central Asia. In 2016, Canada confirmed this pest on wild honeysuckle at several sites in Ontario. In 2017, the United States found European cherry fruit fly on traps hung in wild honeysuckle plants and sweet cherry trees along the Niagara River in New York. This was the first U.S. detection of European cherry fruit fly.

### Damage

European cherry fruit fly attacks only the fruit of its host plants. Larvae-infested fruit may have dark soft spots or appear wilted or shriveled. As mature larvae emerge from the fruit, they may leave behind visible exit holes.

If European cherry fruit fly becomes established in the United States, it could affect U.S. access to foreign cherry markets and cause lower prices and economic losses for U.S. cherry growers.

### Host Range and At-Risk Areas of the United States

European cherry fruit fly prefers sweet cherries and honeysuckle, but may also attack tart cherries. If this pest establishes itself in New York and spreads to other parts of the country, it could threaten commercial cherry production along the Pacific Coast (California, Oregon, and Washington), in the Northeast (Maryland, New York, and Pennsylvania), and in several Western and Central States (Colorado, Michigan, New Mexico, and Utah).

### Appearance and Life Cycle

Adult flies range in length from 1/8 to 3/16 of an inch (3.5–4.0 millimeters). Both males and females are mostly black with yellow to orange heads. A

large yellow dot is visible on their backs. The wings are transparent with dark bands.

Adults typically emerge from May to July and have an average lifespan of 2 to 4 weeks. Females usually lay one egg beneath the skin of each piece of fruit. Once they hatch from the eggs, the larvae develop inside the fruit and feed for up to 6 weeks. As the larvae develop, they damage the fruit pulp. Mature larvae exit the fruit through emergence holes, drop to the ground, and burrow into the soil. Once in the soil, they pupate within a few days and overwinter in the soil underneath or near the host plant.

### Preventing Fruit Fly Spread

When U.S. Department of Agriculture (USDA) or State agriculture officials find an infestation of invasive fruit flies that could damage crops in this country, State regulatory officials first establish an intrastate quarantine to prevent the pest's spread within that State. USDA then establishes a parallel interstate quarantine to keep the

pest from spreading to other States. Together, these quarantines allow State and Federal officials to control and suppress the outbreak locally and regulate the movement of host fruits, nursery plants, and other items that could harbor the pest. These efforts help protect growers in other vulnerable parts of the country.

### **What You Can Do**

Please cooperate with agricultural workers who may be in your area surveying for the pest. In areas where the pest has been found, agricultural workers may request approval from the property owner to apply treatment to prevent the spread.

When traveling, declare all food, live animals, and plant or animal products to a U.S. Customs and Border Protection officer or agriculture specialist at the first port of entry. If your items are generally allowed, the inspector will check them to make sure they are free from pests and disease.

If you travel to Canada, be advised that you may not bring cherries from Ontario into the United States. Cherries from other Canadian provinces are allowed if they are accompanied by a receipt or other document that confirms the fruit's origin. For more information, view the Federal Order: [www.aphis.usda.gov/import\\_export/plants/plant\\_imports/federal\\_order/downloads/2017/DA-2017-15.pdf](http://www.aphis.usda.gov/import_export/plants/plant_imports/federal_order/downloads/2017/DA-2017-15.pdf).

### **Learn More**

To learn more, visit USDA's exotic fruit fly Web site ([www.aphis.usda.gov/plant-health/ff](http://www.aphis.usda.gov/plant-health/ff)) or contact:

- **The New York State Integrated Pest Management Program**  
[nysipm.cornell.edu/agriculture/fruits](http://nysipm.cornell.edu/agriculture/fruits)
- **Your local Extension office**  
[www.nifa.usda.gov/Extension](http://www.nifa.usda.gov/Extension)
- **Your State department of agriculture**  
[www.nationalplantboard.org/member](http://www.nationalplantboard.org/member)
- **The nearest USDA Animal and Plant Health Inspection Service office**  
[www.aphis.usda.gov/planthealth/sphd](http://www.aphis.usda.gov/planthealth/sphd)



## Questions and Answers: 2022 European Cherry Fruit Fly Survey in New York



### What is the European Cherry Fruit Fly (ECFF) survey?

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) and New York's State Department of Agriculture and Markets (NYS AGM) are placing approximately 2,000 traps across the Western and Central New York Regions. APHIS and NYS AGM are also placing traps in New York counties outside the ECFF quarantine area that are most at risk for ECFF's spread to determine if there are other locations where the invasive fruit fly is present.

### What do the traps look like?

The yellow panel trap is a rectangular cardboard trap coated on both sides with a mixture of a sticky material and a food bait. The traps are about 9 inches long and hang vertically in trees.

### Do the traps really catch the fruit flies?

The trap helps detect new infestations and monitor the insect's spread. It is not meant to catch fruit flies as a way to reduce populations.

### What is the bait?

The attractant is a food additive called ammonium acetate that lures fruit flies to the coated yellow trap.

### How do the traps work?

Adult fruit flies are attracted to the baited trap. If the flies land on the trap, they will get stuck in the non-toxic glue. APHIS services the traps at least every 2 weeks to replace the bait and collect insects.

### If a trap is in my area, does that mean ECFF is there?

No. If you see a trap in your community, it does not mean ECFF is present. It just means we are looking for ECFF in your area. The goal of the survey is to determine where the insect is and monitor for potential spread.

### What were the results of the 2021 survey in New York?

The 2021 survey found 790 ECFF in 101 trap locations. These results helped guide decisions on trap placement for the 2022 survey.

### Where will traps be set this year?

For the 2022 season, surveyors will place traps along the edge of the quarantined areas in North Western New York.

### How can I help?

Please allow APHIS and NYS AGM surveyors access to your property to place and check traps. Residents with questions can contact the ECFF program office by calling 1-800-249-2363 or emailing [ppq.ecff@usda.gov](mailto:ppq.ecff@usda.gov). Learn more at [www.aphis.usda.gov/hungrypests/ecff](http://www.aphis.usda.gov/hungrypests/ecff).

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