

Entomologists hope vigilance, research stop newly discovered spotted lanternfly

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The spotted lanternfly, which recently was discovered for the first time in the United States in Berks County, poses a threat to many economically important species of trees and woody ornamentals in Pennsylvania. Credit: Holly Raguza, Pa. Department of Agriculture

People seeing the spotted lanternfly for the first time are struck by its sometimes-flashy appearance. But don't let its colorful, butterfly-like veneer fool you, caution entomologists in Penn State's College of

Agricultural Sciences.

This exotic, invasive insect—found for the first time in the United States in Berks County in September—poses a potential threat to several important agricultural commodities in Pennsylvania, including the grape, hardwood, tree fruit, landscape and nursery industries. Homeowners also could suffer damage to high-value ornamentals in their landscape.

"Because this insect is so new to the United States and Pennsylvania, we don't know yet what kind of impact it might have if it becomes established," said Greg Hoover, ornamental extension entomologist in the Department of Entomology.

"At this point, we only can refer to it as a potential pest," he said. "We do know that in its native habitat in China, India, Japan and Vietnam, it attacks a variety of plants, including grape, apple, pine, stone fruit, tree of heaven and many others."

Hoover, who specializes in pests of trees and woody ornamentals, is part of a team of Penn State researchers and extension educators who have partnered with colleagues in the Pennsylvania Department of Agriculture to contain and, they hope, eradicate the insect before it spreads to other parts of the state and country.

As part of that effort, the state Department of Agriculture has imposed a quarantine covering five townships and two boroughs in eastern Berks County. The quarantine regulates or limits the movement of various plants, plant-based materials and outdoor household items out of the quarantine area unless certain conditions are met.



The spotted lanternfly, which attacks tree trunks and other woody parts of plants, is a weak flyer but a strong and quick jumper. Credit: Lawrence Barringer, Pa. Department of Agriculture

The spotted lanternfly is about 1 inch long and a half inch wide. Adults at rest have grayish wings with black spots, and the wing tips are black blocks outlined in gray. When startled or flying, the insect will display hind wings that have contrasting patches of red and black, partially separated by a white band. The legs and head are black, and the abdomen is yellow with broad black bands.

One of a group of insects sometimes referred to as planthoppers, the lanternfly is a weak flyer but a strong and quick jumper.

The insect does not attack fruit or foliage, nor does it appear to spread plant diseases. Rather, it uses its piercing-sucking mouthparts to feed on the woody parts of plants, such as the trunk of a tree, where it leaves

wounds that weep with sap. These wounds can attract other insects, such as wasps, bees and ants, and may provide a medium for fungal growth. Plants with heavy infestations may become stressed or die.

In late fall, adult spotted lanternflies lay egg masses on trees and nearby smooth surfaces, such as stone, outdoor furniture, vehicles and other structures. Newly laid egg masses have a gray, pitch-like covering over the eggs. Old egg masses appear as rows of 30 to 50 brownish seed-like deposits in four to seven columns, in a mass that is roughly an inch long.

In Korea, where the spotted lanternfly is an introduced pest, the insect has been found to attack at least 65 plant species, 25 of which are known to grow in Pennsylvania. State agriculture officials say it has been observed in Berks County both feeding and mating and has been found on willow, maple, aspen and tulip poplar.

Penn State and Agriculture Department experts are especially worried about potential damage to plants that help fuel Pennsylvania's agricultural economy. They say this pest poses a significant threat to the state's grape, apple and stone-fruit industries, which have annual production valued at about \$20 million, \$134 million and \$24 million, respectively. Also at risk are \$12 billion in pine and hardwood lumber sales.

Mike Saunders, professor of entomology at Penn State, is part of a national working group—led by the U.S. Department of Agriculture and consisting of university and USDA scientists—organized to determine what is known about this pest and what research is needed to develop control measures and management recommendations.

"The group will explore the spotted lanternfly's host range to see what an emergence map for this species might look like in Pennsylvania and beyond," said Saunders, whose research and extension work focuses

largely on integrated pest management in vineyards. "There will be research on things like winter mortality and mating behavior, and proposed DNA analysis will try to pinpoint exactly where this infestation originated. Knowledge in areas such as these can help us develop management options."

Saunders has submitted a proposal for research funding under the federal farm bill to conduct efficacy tests for spotted lanternfly chemical control. He noted that synthetic pyrethroid insecticides appear to show promise. Hoover also is seeking farm bill funding to develop extension educational materials for growers, arborists and the public.

In the meantime, experts say early detection is vital for protecting the state's plant-based industries and stopping the insect's spread. Following are recommendations for growers and homeowners, particularly those in or near the quarantine area in Berks County:

- If you see eggs, scrape them off the surface and place them in a tightly sealed container with 70 percent rubbing alcohol or hand sanitizer to kill them.
- Likewise, if you collect an adult or nymph, place the specimen in 70 percent rubbing alcohol or hand sanitizer in a leak-proof container. Never take a live specimen of the spotted lanternfly from the area under quarantine.
- Complete the Pennsylvania Department of Agriculture's Entomology Program Sample Submission Form and send the adult/nymph specimen or egg mass to the department's entomology lab for verification at the following address: Pennsylvania Department of Agriculture, Entomology Room-111, 2301 N. Cameron St., Harrisburg, PA 17110.
- To report a sighting, call the toll-free Bad Bug hotline at 866-253-7189 with details of the sighting and your contact information or send email to badbug@pa.gov.

More information: More information is available at the Penn State Extension spotted lanternfly website: extension.psu.edu/pests/spotted-lanternfly

Provided by Pennsylvania State University

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