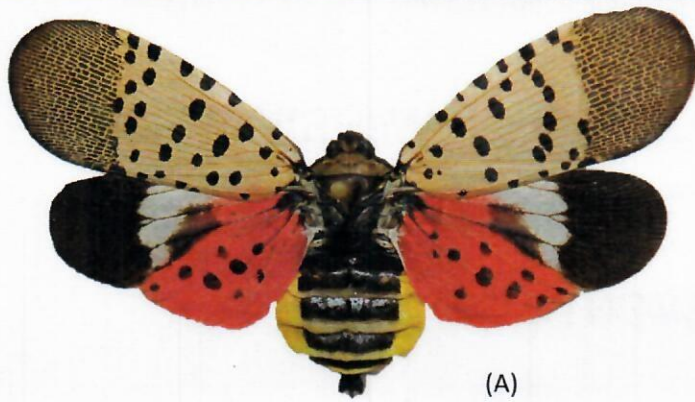


Pest Alert



(A)

Spotted Lanternfly

Lycorma delicatula (WHITE)
(Hemiptera: Fulgoridae)

The spotted lanternfly, *Lycorma delicatula* (White), an invasive planthopper, was first discovered on September 22, 2014 in eastern Berks County, Pennsylvania. It is native to China, India, Vietnam, and was unintentionally introduced to Korea where it has become a major pest. This insect prefers to attack tree of heaven, but it will feed on many other host plants including grapes, apples, stone fruits, and has the potential to greatly impact the grape, fruit tree, and forest products industries. Early detection is vital for the protection of Pennsylvania businesses and agriculture.



(B)



(C)



(D)



(E)



(F)



(G)



(H)



(I)

(A) Spotted lanternfly adult showing the forewings and hind wings (B) Adults at rest on bark (C) Lateral view of an adult (D) 1st instar nymph (E) 4th instar nymph (F) Adult feeding on wild grape, *Vitis* sp. (G) Weeping sap trail on bark (H) Egg mass (oothecum) covered in coating (I) Old hatched egg mass on tree trunk.

Identification:

The spotted lanternfly adult is approximately 1" long and 1/2" wide at rest. The forewing is gray with black spots and the wing tips are reticulated black blocks outlined in gray (A, B, C). The hind wings have contrasting patches of red and black with a white band (A). The legs and head are black; the abdomen is yellow with broad black bands. Young nymphs are black with white spots, and in the last (4th) instar develop red patches (D, E).

Hosts:

In the fall, adults congregate on tree of heaven (*Ailanthus altissima*), willows (*Salix* spp.), and other trees in groups of up to 20. Egg masses are laid on the trunk and branches of medium to large trees. After hatching in the spring, nymphs will move off the tree and search out new hosts, including several kinds of agricultural crops. In Korea, it has been reported to attack 65 different tree species, 25+ of which are known to grow in Pennsylvania.

Symptoms and Signs:

Trees, such as tree of heaven and willow, will develop weeping wounds. These wounds will leave a grayish or black trail along the trunk (G). This sap will attract other insects to feed, notably wasps and ants. In late fall, adults will lay egg masses on host trees and nearby smooth surfaces like stone, outdoor furniture, vehicles, and other structures. Newly laid egg masses have a gray mud-like covering that can take on a dry cracked appearance over time (H). Old egg masses appear as rows of 30-50 brownish seed-like deposits in 4-7 columns on the trunk, roughly an inch long (I).

What to do:

If you see egg masses, scrape them off, double bag them and throw them away. You can also place the eggs into alcohol or hand sanitizer to kill them. Please report all destroyed egg masses on our website listed below.

Collect a specimen: Specimens of any life stage may be submitted to the Pennsylvania Department of Agriculture's Entomology Lab for verification. Directions for submission are on the reverse side of this alert.

Take a picture: A photograph of any life stage (including egg masses) can be submitted to Badbug@pa.gov.

Report a site: If you can't take a specimen or photograph, call the Automated Invasive Species Report Line 1-866-253-7189 and leave a message detailing your sighting and contact information.



ENTOMOLOGY PROGRAM SAMPLE SUBMISSION FORM

The Entomology Program at the Pennsylvania Department of Agriculture can provide identification. Please complete this form to be submitted with the specimen(s).

SPECIMEN COLLECTION REQUIREMENTS:

1. All specimens should be dead.
2. Most specimens should be placed in 70-80% ethyl or isopropyl alcohol in a leak proof vial.
(Moths, butterflies, and mealybugs should be frozen and placed in a hard plastic container with dry paper toweling)
3. The leak proof vial should be placed in a zip-style plastic bag.
4. Specimens from different locations (if applicable) should be placed in different vials.
5. A completed sample submission form must accompany the vial/container.

REQUIRED INFORMATION:

Name of Submitter:

Contact Information: Telephone:

Email:

Address Where Specimen Was Collected:

Date Collected:

Plant Host/Habitat:

Name of Person Who Collected Specimen:

Comments/Special Instruction:

Mail the vial/container and completed form or deliver in person to:

Pennsylvania Department of Agriculture
Entomology - Room 111
2301 North Cameron Street
Harrisburg, PA 17110

Contact: Sven-Erik Spichiger at 717-772-5229 or Lawrence Barringer at 717-772-5228



In Pennsylvania, the Spotted Lanternfly goes through one generation per year. Currently, you can find it in its adult stage, which is about 1 inch with its wings closed and 1.5 inches with its wings open. When you see a Spotted Lanternfly:

- Call 1-888-4BAD-FLY to report it, or
- Take a picture, upload and report it using the online [reporting tool](#).

What happens after I report a Spotted Lanternfly?



Survey and Control

The United States Department of Agriculture (USDA) and the Pennsylvania Department of Agriculture (PDA) are working cooperatively on Spotted Lanternfly survey and control operations.

- Survey for Spotted Lanternfly in all 67 counties (33,000 documented points)
- Kill hundreds of thousands of Tree of Heaven
- Establish thousands of trap trees (Tree of Heaven that are left alive and treated with insecticide to kill Spotted Lanternfly that feed on the trees)
- Place sticky bands in more than 10,000 locations, as a survey tool to find new or low level populations

When evaluating a site for treatment, PDA field staff rank properties based on five pre-determined factors. The more of these criteria a property meets, the more likely it is to receive treatment:

- Is there evidence of Spotted Lanternfly on the property?
- Is the property a heavily-used parking area?
- Is there significant Tree-of-Heaven present on the property?
- Is the property a high-volume shipping operation?
- Is there a high-traffic roadway or rail line adjacent to the property?



Maintaining the Quarantine

The Pennsylvania Department of Agriculture used its authority to establish a 14-county Spotted Lanternfly quarantine. Penn State and PDA work together to educate residents and businesses in how to comply with the quarantine, and the best management practices to prevent spread of Spotted Lanternfly. PDA is charged with quarantine compliance and enforcement activities. To date, PDA has issued nearly one million permits to more than 19,000 companies in the United States and Canada.



Research

A vibrant research team from Penn State University and USDA are conducting research projects aimed at better understanding and controlling Spotted Lanternfly. The researchers are supported by state and federal funding, and by on-the-ground assistance from PDA and USDA survey staff.

Research projects include:

- Drs. David Biddinger and Nina Jenkins from PSU Entomology teamed up with Cornell University to research a fungal pathogen that attacks insects, including Spotted Lanternfly. The team is investigating if commercially available fungal pathogens can reduce populations of Spotted Lanternfly
- Dr. Kelli Hoover and her team are currently conducting trials on how Spotted Lanternfly disperse through woods and what plants are required and/or preferred for each life stage
- Dr. Michela Centinari and team are gearing up for a study on evaluating Spotted Lanternfly feeding damage on grapevines
- Insecticide efficacy trials are continuing for products which have long residual activity and are environmentally safe. [Click here](#) to check out the results
- Dr. Tom Baker has recently published his work on Spotted Lanternfly behavior, indicating that Spotted Lanternfly has a preference to fly towards the sun once disturbed. [Click here](#) to find out more on Dr. Baker's study

There is still a lot to learn about the Spotted Lanternfly. The partnership is committed to continuing that work.

Get involved with the SLF Calendar Contest!

We invite you to enter the 2020 Spotted Lanternfly calendar contest! All Pennsylvania Students in grades 1-8 are eligible to enter. Last year's contest was a huge success, and we can't wait to see this year's entries!

[Click here](#) to learn more information.



SPOTTED LANTERNFLY: AN INVASIVE PLANTHOPPER NATIVE TO CHINA, INDIA, VIETNAM. FIRST DISCOVERED IN PENNSYLVANIA IN BERKS COUNTY AND HAS SINCE SPREAD TO 14 SOUTHEAST COUNTIES. IN ADDITION TO BEING AN INCREDIBLE PEST AND REDUCING QUALITY OF LIFE FOR THOSE IN INFESTED AREAS, THIS BAD BUG HAS THE POTENTIAL TO GREATLY IMPACT SOME OF PA'S MOST VALUABLE AGRICULTURAL CROPS INCLUDING GRAPES, HOPS, AND HARDWOODS.

