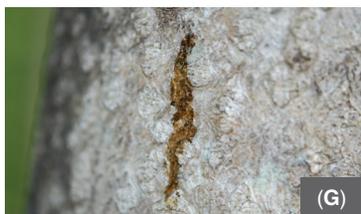
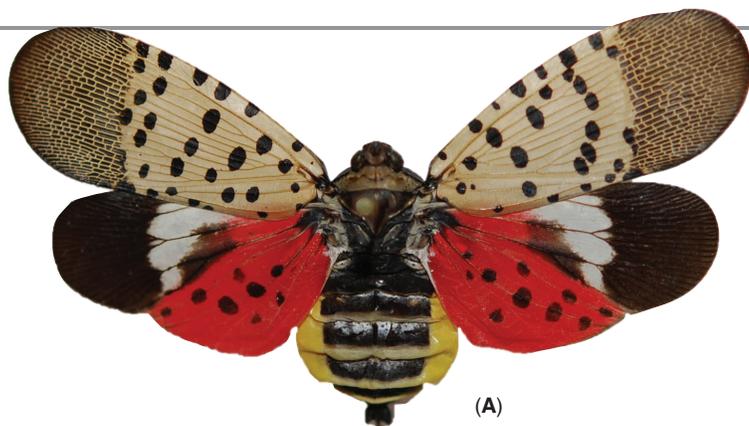


Pest Alert

Spotted Lanternfly

Lycorma delicatula (WHITE)
(Hemiptera: Fulgoridae)

The Spotted Lanternfly, *Lycorma delicatula* (White), an invasive planthopper, has been discovered in Berks County, Pennsylvania. It is native to China, India, Vietnam, and introduced to Korea where it has become a major pest. This insect attacks many hosts including grapes, apples, stone fruits, and tree of heaven and has the potential to greatly impact the grape, fruit tree, and logging industries. Early detection is vital for the protection of Pennsylvania businesses and agriculture.



*Photos courtesy of Park et al. 2009, *Biological Characteristics of Lycorma delicatula and the Control Effects of Some Insecticides*.

(A) Spotted Lanternfly showing the fore and hind wings (B) Resting against bark (C) Lateral view (D) Early nymphs (E) Late nymphs (F) Feeding on wild *Vitis* sp. (G) Weeping sap trail on tree (H) Egg mass covered in waxy coating (I) Old hatched egg mass on a trunk.

Identification:

The Spotted Lanternfly adult is approximately 1" long and 1/2" wide at rest. The forewing is grey with black spots and the wings tips are reticulated black blocks outlined in grey (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. Immature stages are black with white spots, and develop red patches as they grow (D,E).

Hosts:

In the fall, adults congregate on tree of heaven (*Ailanthus altissima*) (F), willows (*Salix* sp.), and other trees, in groups of up to 20. Egg masses will be laid on medium to large trees, on trunk, branches, and limb bases. 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 species, 25+ of which are known to grow in Pennsylvania.

Signs and Symptoms:

Trees, such as tree of heaven and willow, will develop weeping wounds. These wounds will leave a greyish 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 structures. Newly laid egg masses have a grey mud-like covering which 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 can be turned in 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 at 1-866-253-7189 and leave a message detailing your sighting and contact information.

Recommended Best Management Practices (BMPs) For Spotted Lanternfly in Pennsylvania

BMPs for Forest Landowners

- Monitor information about SLF in your county and neighboring counties, especially if your property is in the quarantine area.
- Learn to identify SLF and egg masses and watch for potential egg masses on smooth bark trees, rusty metal, outdoor furniture and covers, recreational vehicles, lawn tractor and mowers, mower decks, grills and covers, tarps, mobile homes, tile, stone, siding, pool liners and covers, play equipment, deck boards, or anything stored outside, etc. If found, remove all egg masses if possible.
- If you are in a quarantine county, do not move firewood off your property unless you inspect each piece of firewood for egg masses. Do not move firewood (or anything) from properties with active high populations. The risk of moving adults is too great.
- Consider *Ailanthus* control options for your property. Recommend removal of all female trees and reduction of male *Ailanthus* trees (a few can be used as “trap” trees if necessary). Various herbicide applications are available depending on the size of the tree. Simply cutting *Ailanthus* will result in many root sprouts. It is best if herbicide treatments are done early July to mid-October, and cutting occurs 30 days after herbicide treatments to allow them time to work.
- Remove all female *Ailanthus* trees from property. Female *Ailanthus* trees are easy to identify in the late summer when the seed clusters can be easily seen clinging to the female trees. These trees are generally located along the tree line of forested areas or highway right of ways where the soil has been disturbed.
- Monitor male *Ailanthus* trees for early signs of SLF. Treatment information for herbicide and insecticide applications may be found at www.agriculture.pa.gov/spottedlanternfly.
- You may want to band *Ailanthus* trees or other high risk trees (maple, walnut, apple) with adhesive tree bands – May to August. This will also help in identifying if SLF is present, and can kill all walking life stages in infested areas.
- Park in areas away from the tree line if possible and always leave windows up. Kill any SLF that you find in your car before leaving the area.
- Report to the Department of Agriculture any findings of SLF in counties OUTSIDE the current quarantine area. Collect a specimen and/or take a picture and report to the Invasive Species Hotline at 866-2537189 or badbug@pa.gov.

BMPs for Foresters

- Monitor information about SLF in your work areas, especially if your clients are in the quarantine zone.
- Learn to identify SLF and egg masses and watch for them when doing initial surveys of properties.
- If *Ailanthus* is on the property, monitor current conditions and note if SLF is present. Recommend the removal of the female *Ailanthus* trees and reduction in the male trees using herbicide treatments from July 1 to October 15. A few male “trap” trees may be helpful.
- If SLF or egg masses are identified, and the county is not currently quarantined, consider yourself a mandatory reporter to the PA Department of Agriculture. Collect a specimen and/or take a picture and report to the Invasive Species Hotline at 866-253-7189 or badbug@pa.gov.
- Inform property owners of the presence of SLF and suggest options to minimize the spread of SLF, as well as treatment methods to eradicate SLF on the property. Refer them to www.agriculture.pa.gov/spottedlanternfly for treatment protocols.
- Always be prepared by carrying egg mass scrapers (the size of a credit card) and train all staff to identify and destroy egg masses during the months of October to April.
- Be vigilant for signs of SLF on *Ailanthus*, walnut, maple, and apple trees. Egg masses are also likely to be on young black birch and young black cherry trees.

- Monitor forest for signs of SLF in or near orchards, vineyards, or near fields where hops are grown.
- If SLF is found, recommend harvesting during December to March when egg masses can be clearly identified and removed from every log. All sides of the log must be examined and may not move out of the quarantine zone without proper certification from PA Department of Agriculture.
- Park in areas away from the tree line if possible and always leave windows up. Kill any SLF that you find in your car before leaving the area.

BMPs for Loggers

- Before bidding on properties, survey for signs of SLF. If found, determine what level engagement you will support to be sure that you do not move SLF.
- Compliance agreements are required for all forest product companies working in a quarantine zone, and employees need permits in their vehicles. At least one company staff person must be trained by the Department of Agriculture on SLF.
- You must notify the Department of Agriculture Regional Bureau of Plant Industry Supervisor four weeks in advance regarding any harvest in the quarantine zone.
- Compliance forms must be signed by your company and all actions must be followed in the compliance agreements. Make sure the paperwork has the proper stamp and is present on site and with those transporting the logs. All employees working in the quarantine zone must be trained, tested, and issued permits to work in the quarantine zone.
- If the forest land has high populations of SLF then do not harvest during July to November when SLF adults are active.
- If egg masses are found on the property, every log must be inspected prior to moving the log off the property. Every log should also be inspected on all four sides at the receiving log yard as a secondary defense. If found, the egg masses must be manually destroyed. Do not assume the log debarkers will kill all egg masses. If egg masses are moved to sawmills, the potential that the sawmill will become infested in subsequent summers is high and could significantly impact the sawmill economically.
- Follow BMPs for foresters in addition to BMPs for loggers.
- Offer to remove or cut all female *Ailanthus* trees on the property only after they have been treated with an herbicide for a minimum of 30 days.
- During the months of July to December, equipment and vehicles must be monitored for adults which might fall into crevices and move out of the area. Look before you leave. This is imperative before moving to a new site.
- Windows of vehicles should remain closed while parked in the quarantine zones.

Best Management Practices last updated March 21, 2018. Because BMPs may change as more is learned about the Spotted Lanternfly, check for most recent information at www.agriculture.pa.gov/spottedlanternfly.

