

Spotted Lanternfly



DELAWARE DEPARTMENT OF
AGRICULTURE

Quick Take

What:

The spotted lanternfly—a destructive, invasive plant hopper attacks many hosts including grapes, apples, stone fruits, walnut, willow, and tree of heaven—has been confirmed in New Castle County. Delaware is the second state to have found the insect, which was first detected in Pennsylvania in 2014.

Significance:

Agriculture is Delaware's #1 industry, providing more than 20,000 jobs and \$8 billion of economic activity, including \$1.2 billion in direct sales from our 2,300 family farms.

This insect is a potential threat to several important commercial crops including grapes, peaches, apples, and timber. Early detection is vital for the protection of Delaware businesses and agriculture.

What is Spotted Lanternfly?

The spotted lanternfly, *Lycorma delicatula*, is a plant hopper native to China, India, and Vietnam, that belongs to the order Homoptera, family Fulgoridae.

The spotted lanternfly adult is 1" long and 1/2" wide at rest. The forewings are gray with black spots, and the hind wings are red with black spots. The head and legs are black, and the abdomen is yellow with broad black bands. Immature stages are small, round, and black with white spots, and develop red patches as they grow.

Officials believe the spotted lanternfly must feed on tree of heaven (*Ailanthus altissima*) to reproduce, however, the insect can be found feeding on other plants and trees as well. Egg masses will be laid on the trunk, branches, and limbs of medium to large trees, often in the upper reaches of the canopy. In springtime, nymphs will hatch and move off the trees and search for new hosts, including several agricultural crops, including grapes, apples, and peaches.

#HitchHikerBug

The spotted lanternfly is a very distinct insect at both the nymph and adult phases. The egg masses can be hard to spot making it easy to transport them on vehicles and other outdoor items.

Based on the proximity to Pennsylvania and the ease in which the spotted lanternfly is able to "hitch-hike," officials believe this could be how the insect was introduced to Delaware. Therefore, it is important for Delawareans and visitors to inspect their vehicles and anything they may be transporting, including trailers, stone, metal, or anything that has spent time outdoors and remove and destroy any egg mass attached. They have been seen hitching rides in and on cars and clothing. It is important to check for any sign of the spotted lanternfly before traveling to and from surrounding states, especially Pennsylvania, New Jersey, Maryland, and Virginia.



What to do...

If you find a spotted lanternfly, there are several ways you can help us stop the **#HitchHikerBug**:

1. Take a picture:

With the GPS function turned on your smartphone or a camera with GPS, take a photograph of any life stage (including egg masses). Upload your photograph to Facebook or Instagram, using the hashtag **#HitchHikerBug**. If you don't have GPS capabilities and/or access to social media, submit the photograph via email to: **HitchHikerBug@delaware.gov** and include your name, contact information, and the address or georeference of where the photo was taken.

2. Capture or Destroy:

Positively identified spotted lanternfly should be destroyed whenever possible with registered insecticides, and discarded. Suspected specimens of any life stage found outside the quarantine area can be collected and placed in a vial or plastic zip-lock bag with the name and contact information of the collector, and turned in to the Delaware Department of Agriculture Spotted Lanternfly Program for verification. Efforts to identify and destroy the spotted lanternfly help your property and the community.

3. Report a site:

If you can't collect a specimen or take a photograph, call 302-698-4632 or send an email to: **HitchHikerBug@delaware.gov** with a message detailing the location of the sighting and your contact information.

de.gov/hitchhikerbug

Have You Spotted Me?



Credit: itchydogimages, Flickr



Credit: John, Flickr



Credit: John, Flickr



Credit: Pennsylvania Dept. of Ag

It's the Law!

The Delaware Department of Agriculture has the authority under the Plant Pest Law (Title 3, Chapter 11 § 1103) to issue orders for any control measures it deems necessary to prevent the spread of dangerously injurious plant pests. Upon knowledge of the existence of such plant pest, such as spotted lanternfly, the Department shall notify the person(s), owner(s) or the tenant(s) in possession of the premises in question of the existence of this pest and to implement the prescribed control measures within the prescribed time limit, otherwise the individual will be subject to civil penalties.

If the person associated with or owners of the plants infested with spotted lanternfly are found to neglect, fail or refuse to apply the control measures prescribed by the Department, in the manner or at the times ordered and directed by the Department, then the Department may cause the prescribed control measures to be applied at the expense of that person.

What I Am Not...



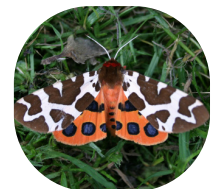
Stink Bug (nymph)



Boxelder Bug



Leopard Moth



Tiger Moth

Delaware SLF Quarantine

In 2019, Delaware established a spotted lanternfly quarantine due to the detection of established populations in New Castle County, Delaware. A quarantine is a regulation to slow the spread of the spotted lanternfly, and means that any material or object that could harbor the pest cannot be moved without taking precautions to prevent the spread. The general public must complete a residential compliance checklist indicating that regulated articles have been inspected and found free of any life stages of spotted lanternfly, and any business requiring the movement of any regulated item within or from the quarantine area must have a permit.

The quarantine can expand if the spotted lanternfly is determined to have established a population in a previously non-quarantined area. For the most up-to-date details and information regarding the Delaware Spotted Lanternfly Quarantine, and to apply for a permit, visit <https://de.gov/hitchhikerbug>.

Signs and Symptoms of SLF

Spotted lanternfly feeds on sap from trees using their piercing-sucking mouthparts, causing noticeable weeping wounds on susceptible trees, leaving a grayish or black sticky trail along the trunk. This sap will attract other insects to feed, notably wasps and ants.

Spotted lanternfly also secrete a high-sugar substance called honeydew, which can fall and coat leaves and objects below feeding locations. Not only is it annoying for homeowners, the honeydew causes mold growth on plants that prevents photosynthesis and weakens the plant. It also attracts stinging insects, looking to feed on the honeydew,

Branch dieback, wilting and plant death is a common symptom of heavy spotted lanternfly feedings.

So You Have Tree of Heaven?

If you have found tree of heaven on your property, it is time to make a plan!

1. Identify which trees are female.

These trees will have the winged seedpods. Female trees should be removed from your property to eliminate them as a potential food source for spotted lanternfly.

2. Create "trap trees."

Trap trees are male tree of heaven that do not have seeds. Leave 10% of the largest male trees standing and treat them with a registered systemic insecticide to target spotted lanternflies that land and feed on them. This chemical should be applied yearly in the springtime.

3. Time to cut and treat

Now that you have your trap trees picked out, it's time to remove the remaining tree of heaven.

Tree of heaven is notorious for growing back with a vengeance if it's only cut down. The roots have been known to reach out 26 feet and will send up offshoots if the parent tree is cut down. In order to ensure that the tree is killed, you will need to treat it with a herbicide.

When using herbicides and insecticides, remember to read the product label and be mindful of all label restrictions!



Examples listed below are some of the available insecticide products containing the most effective ingredients studied (*dinotefuran, imidacloprid, carbaryl, and bifenthrin*).

Be sure to follow label directions. Mention of a product name does not constitute a specific endorsement by the Delaware Department of Agriculture or the University of Delaware.

Contact insecticides (bifenthrin, carbaryl). Apply when adult insects are present:

- BIFEN 7.9F SELECT
- FLEE READY-TO-USE YARD SPRAY
- HOME MD MAXIMUM DEFENSE YARD CONCENTRATE
- LESCO CROSSCHECK PLUS MULTI INSECTICIDE
- MAXXTHOR SG
- ORTHO MAX PRO
- SEVIN
- TALSTAR SELECT INSECTICIDE
- UP-STAR GOLD INSECTICIDE

Systemic insecticides (imidacloprid, dinotefuran). Most effective when applied in spring and summer before adults build up:

- BAYER ADVANCED 12 MONTH TREE & SHRUB INSECT CONTROL
- BONIDE ANNUAL TREE & SHRUB INSECT CONTROL WITH SYSTEMAXX
- COMPARE-N-SAVE SYSTEMIC TREE & SHRUB INSECT DRENCH
- MONTEREY ONCE A YEAR INSECT CONTROL II
- ORTHO BUG B GON YEAR-LONG TREE & SHRUB INSECT CONCENTRATE
- SPECTRACIDE TREE & SHRUB INSECT CONTROL
- TRANSTECT 70 WSP INSECTICIDE
- VENOM INSECTICIDE
- ZYLAM LIQUID SYSTEMIC INSECTICIDE

Tree Identification



Tree of Heaven
(*Ailanthus altissima*)

Proper identification of tree of heaven is important in helping to eradicate this invasive pest. Although tree of heaven is an invasive plant, there are several native trees that are similar-looking. It's important to distinguish these from tree of heaven so that these look-alikes are not removed.

Tree of Heaven is a very hardy tree species that can be found growing almost anywhere because of its tolerance of poor soils. The species can grow to 82 feet, and is usually found in clusters.

- **Leaves:** Compound leaves with compound leaflets. Leaves and twigs have strong "nutty" odor when crushed or cut.
- **Bark:** Gray bark with vertical lines. As the tree gets older, bark becomes darker.
- **Fruit:** Females have winged seed pods that hang on the tree through the winter.

Sumac is much smaller when fully grown reaching 32 feet, on average. There are two common sumacs found in Delaware—Staghorn and Smooth.

- **Leaves:** Compound leaves with serrated leaflets.
- **Bark:** Staghorn has a velvety bark much like the antlers of a deer. Smooth sumac has a brown-gray bark that is smooth and will develop scaly ridges with age.
- **Fruit:** Clusters of round, finely-haired reddish fruit in an upright cluster.

Black walnut is a tree that can grow upwards of 60-80 feet, but has low tolerance for shade and poor soil.

- **Leaves:** Compound leaves with smooth leaflet margins.
- **Bark:** Brown on the surface, but darker brown when cut. The bark is ridged and furrowed, with a rough diamond pattern.
- **Fruit:** Matures in the fall, growing between 2-2.5 inches round with a hard outer husk over the nut.



Leaves and winged seed pods of tree of heaven.



Leaves and seed head cluster of staghorn sumac.



Leaves and fruit of a black walnut.

For More Information

Delaware Department of Agriculture—Spotted Lanternfly Program
2320 S. DuPont Hwy, Dover, DE 19901
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de.gov/hitchhikerbug