

Spotted Lanternfly



Figure 1: Adult spotted lanternfly.

Spotted Lanternflies Land in New Jersey

Invasive Pest Identified in Warren County

Some people may think it is a moth but it's really the Asian plant hopper known as the spotted lanternfly (SLF), *Lycorma deliculata* (White) and is a member of the order Hemiptera, family Fulgoridae. In the USA, spotted lanternfly is an invasive species that could be very devastating to some New Jersey crops and hardwood trees.

This insect was accidentally introduced into Pennsylvania and was confirmed in the state in September 2014. At first it was only found in Berks County, however, today it has spread throughout Pennsylvania and to neighboring states, including New Jersey.

New Jersey populations were first detected in 2018 and are currently primarily distributed along the state's border with Pennsylvania. In response, the NJ Department of Agriculture has issued an eight-county quarantine. People and businesses travelling in and out of these counties (Burlington, Camden, Gloucester, Hunterdon, Mercer, Salem, Somerset, and Warren) should inspect vehicles for hitchhiking SLF and inspect outdoor items such as packing bins, firewood, paving stones, lawn equipment, etc. for egg masses ([see checklist](#)). **Quarantine compliance will reduce the spread of SLF to new areas and counties thereby protect New Jersey resources including forests and agriculture.**

To help survey efforts, the general public should report sightings (please include the town and county where the specimen was found and attach a photograph) to slanternfly@njaes.rutgers.edu. Farmers, nurserymen and vineyardists should also report sightings to SLF-plantindustry@ag.nj.gov. From the NJAES reporting email and field observations, we saw dramatic increase in the SLF populations in 2019 including populations on commercial farms.

Spotted lanternfly is distinctive from most other native insects which greatly aids in identification. In the spring, around mid-May, young juveniles hatch from the eggs and are black with white spots. At first glance, they may be confused with second instar brown marmorated stink bugs (see Figures 2 and 3). As they grow, nymphs become red and black with white spots (see Figure 4). The presence of the "polka dots" on the nymphs is

distinct from most other insect species present in New Jersey.

Nymphs mature into adults in late July-August and are quite colorful with a black head, grayish black spotted forewings, and reddish black spotted hind wings (see Figure 1). They are approximately 1" in length and a ½" in width and are present until frost. Adults feed in large congregations from August – October and are easily recognizable. Because they spend at least one month as adults before laying eggs, this could be a critical time for management. Mating and egg laying is delayed and egg laying does not occur until October. Egg masses are laid on smooth surfaces and appear like a patch of mud. They spend the winter in this stage and thus are **very** likely to be accidentally transported to a new location.

The spotted lanternfly can feed on more than 70 plant species including cultivated and wild grape, fruit trees, and hardwood trees common in woodlots and as landscape plantings. As with all plant hoppers, SLF has sucking mouthparts that it inserts into plant tissues to remove the fluids it needs to survive.

SLF adults and nymphs are phloem feeders that feed in large congregations on woody tissue. Feeding primarily occurs on the trunk and limbs of plants, not on the fruit or leaf tissues although young nymphs may feed on the leaves, particularly along the leaf veins. Feeding and abundance on different hosts switches throughout the growing season, likely tied with sugar flow in the trees.

One tree that hosts large numbers of SLF is *Ailanthus altissima* (Tree of Heaven) (see Figure 5), which is abundant in New Jersey. Tree of Heaven typically grows in clumps in sunny areas along highways or disturbed habitats such as the edges of crop fields, open spaces, or parks. Other key tree hosts include black walnut, red maple, river birch, willow, and agricultural crops such as grapes, apples, and peaches.

During feeding, SLF excretes significant amounts of honey dew (or sugar water). Honey dew deposits provide a food source for a sooty mold fungus that can grow on plant surfaces and fruit leading to reduced photosynthesis and plant vigor. Adults feed in large congregations and highly noticeable. Although there are no numbers or estimates on the economic impact of SLF, we are concerned about the impacts to our agricultural and homeowner communities.

Relative Spotted Lanternfly Infestation on Key Hosts

	June	July	August	September	October
Black Walnut		Higher	Higher		
Ailanthus		Lower	Lower	Higher	
Grape	Higher	Lower			Higher

When looking for SLF, survey along the perimeters of fields and on Tree of Heaven, black walnut, red maple, willow, river birch, and wild grapevines at the edges of wood lines. Multiple egg masses can also be found on trellis posts within a vineyard. Insecticides are effective but due to the high mobility of this pest, in highly infested areas, vines should be monitored closely for the arrival of new bugs.

In Pennsylvania, adults and nymphs have caused economic injury to cultivated grapes in commercial vineyards. Populations are increasing in NJ vineyards each year as well. Economic estimates of injury are unavailable but some Pennsylvania growers report direct vine losses due to reduction in cold hardiness and plant health. Populations and injury are higher along vineyard edges and in New Jersey vineyards we are seeing populations of adult moving into the vineyard in September and October to feed.

SLF is very susceptible to multiple insecticides. During the fall when adults are very abundant, products with higher residual activity may be required. Care needs to be taken if using soil drench insecticides on landscape trees that are important pollen and nectar sources for foraging bees in the spring as the insecticide may still be present in harmful levels.

There are two species of natural occurring fungi that can attack SLF, *Beauvaria bassiana* and *Batkoa major*. A few beneficial insects have also been observed attacking SLF, primarily in the egg stage. The impact these biological organisms will have on SLF is unknown and until that time insecticide management and removal of egg masses are the primary lines of defense. [See the NJDA's Spotted Lanternfly page for more information on insecticide management.](#)

Again, SLF populations in New Jersey are new and we need your help! **Quarantine compliance and management of adult populations will reduce the spread of SLF to new areas and counties thereby protecting New Jersey resources including forests and agriculture.** To help survey efforts, please report sightings (with photograph) to slanternfly@njaes.rutgers.edu.

— Anne Nielsen (Associate Extension Specialist in Entomology) and George Hamilton (Extension Specialist in Pest Management)

This vicious, tree-killing insect has been found in New Jersey