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Spotted Lanternflies: Their Harm and How to Help

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Staff Article

Spotted Lanternflies' Damage

Have you walked down A-walk this fall and seen a student stomp a weird-looking bug down? Chances are that it was an adult spotted lanternfly. Spotted lanternflies are a kind of planthopper that is native to eastern Asia, but since it was brought to Pennsylvania in 2014, it has been detrimentally impacting a wide range of native and agricultural plants.¹ Specifically, it has been destructive to grape vines, fruit trees, hardwood trees, and other plants.^{1,2,3} Adult lanternflies have been mainly thriving off of non-native *Ailanthus altissima*, or “tree of heaven,” trees.² The spotted lanternflies can quickly multiply with mature female spotted lanternflies laying an egg mass or two containing as many as 60 eggs in an egg mass.⁴ During their stay in the state, they have developed no natural predators besides the occasional opportunistic bird, spider, or praying mantis; however, this impact is negligible.^{4,5} The introduction and spread of spotted lanternflies are accelerated when overlooked materials have stowaways or are contaminated with the spotted lanternflies’ egg masses, and the sightings of spotted lanternflies in Pittsburgh’s parks system is increasing.^{5,6} Because of their lack of predators and aggressive competitiveness with native species, spotted lanternfly growth has gone unchecked and is continuing to grow.⁵ This has been impacting homeowners’ trees and agricultural industries.² Not only can it impact the *ecosystem*, but the *economy* as well.⁶ An approximated \$324 million could be lost annually in the state of

Pennsylvania from the forestry industry alone if spotted lanternflies continue to spread.⁶ If spotted lanternflies were to spread past the east coast to the rest of the United States, the country's fruit and logging industries could be devastated.³

Life Cycle Stages and Identification

The spotted lanternflies are laid in egg masses with over 30 eggs from September through May.^{1,5} These masses, when uncovered, are orderly rows of rectangular beige segments with rounded corners.⁵ When the eggs are covered, the white liquid secretion dries into a pinkish-gray before taking on a color similar to that of dried mud or cement, which is very easy to blend in with plants and items that are or have been outdoors.^{4,5} These egg masses can be destroyed by scraping the eggs off of the surface and putting them into a sealed bag or container of rubbing alcohol and disposing of them.⁴



Once hatched in May (or sometimes late April), the spotted lanternfly has four developmental stages, called instars, when in its nymph phase in the life cycle.^{1,4} As it matures into an adult, it gains the ability to fly as it develops a set of wings.⁴ The following descriptions can help you identify the spotted lanternfly during a specific time of year.

April through June

During the first to third instar, they are black with white spots and range from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch large.⁴ During the nymph stage, they climb all sorts of trees and shrubs, which is

when they are most destructive.^{4,5} When the spotted lanternflies are this young, their mouth parts are soft, so they prefer to feed on tender new growth on plants.⁴ As these nymphs feed, they pierce the plant and, like a vampire, suck out the sap.^{4,5} Unfortunately, as they do this, they cannot digest all of the juice they consume, which is excreted as excess honeydew.⁵ The sugar content in this viscous substance that sticks onto the plant encourages the growth of sooty mold, a dangerous fungal disease that can encompass an entire plant and eliminate photosynthesis and growth.⁵ This can lead to the plant suffering and dying.⁵ At this stage, they do not fly, but can crawl and jump.⁶

July through September

During the fourth and final instar of the nymph phase, the nymph is black and a bright red with white spots.^{4,6} They grow from $\frac{1}{4}$ to $\frac{1}{2}$ of an inch in size.^{4,6} With powerful hind legs, these planthopper nymphs can jump far with great speed.⁴ During all instars of the nymph phase, traps such as the circle trap can be installed on trees to capture nymphs that climb up the trunk to find new growth at the top of the tree.⁴

July through December

The nymph phase has now morphed into its final phase of its life cycle, which is a mature spotted lanternfly adult.^{4,6} They have their tan black-spotted wings in a pitched-tent style and have beady orange eyes.⁴ When the wings are open, the bright red underwings are exposed.⁴ The adults are around an inch in size and can fly.⁴ However, while crawling on objects and on the ground, they generally prefer to hop and glide.⁶

How to Help

Spotted lanternflies are extremely harmful and as December rolls around, there will be egg masses waiting to hatch again next year.⁵ While areas of Pennsylvania are currently under spotted lanternfly quarantine to prevent the spread, awareness and action can mitigate the spotted lanternfly's impact.^{4,5}

Now that you know what to look for, try to observe your surroundings and be on the lookout for any spotted lanternflies trying to hurt your neighborhood.

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