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SPOTTED LANTERNFLY

Dalton Ludwick*

Spotted lanternfly (*Lycorma delicatula* White) is a sap-sucking insect with many known plant hosts, native and non-native alike (Fig. 1). While its preferred host is tree-of-heaven (*Ailanthus altissima*), it can feed on plants like grape, oak, stone fruit, walnut, and other woody plant species. Spotted lanternfly undergoes several observable changes during its life cycle. After egg hatch, nymphs feed on a wide variety of plant species, but this host range narrows as the insect ages, with adults feeding on a few species and laying eggs on numerous plants, including tree-of-heaven. Human-assisted movement poses a significant threat, as this insect is capable of hitchhiking at any life stage. Any property or plant material from areas with known spotted lanternfly infestations should be inspected thoroughly to prevent its spread. Limiting the spread of spotted lanternfly will limit the impact on lumber, orchard, and vineyard sectors.

Figure 1. Adult spotted lanternfly with pink wings and black spots. *All photos by Dalton Ludwick.*

GEOGRAPHIC DISTRIBUTION

Though native to China, spotted lanternfly was discovered in Berks County, Pennsylvania, in 2014 on just a few acres. In the years since, spotted lanternfly has spread through short-distance movements and over longer distances through human-assisted movement to *14 states in the mid-Atlantic, Northeast, and Midwest*. In some states, a small area has an active population, while other states have substantial invasions covering dozens of counties or the majority of the state.

DAMAGE

Spotted lanternfly can cause damage in a variety of ways. Directly, the spotted lanternfly nymphs and adults feed on plant vascular tissue, where they ingest fluids containing nutrients and moisture. This direct damage can reduce the plant's health.

*Assistant Professor & Extension Entomologist, Texas A&M AgriLife Extension Service, Corpus Christi, TX

In addition, nutrients and moisture that are not needed by the insect are excreted in the form of a liquid waste called honeydew. Large numbers of spotted lanternfly can create copious amounts of honeydew that covers leaf tissues and anything underneath, allowing sooty mold to develop on the surface. This sooty mold can further reduce the photosynthetic abilities of the plant's leaves and damage the appearance of certain items.

DESCRIPTION

Spotted lanternfly egg masses are found on a variety of plants and surfaces, including wood and metal. The eggs are laid in rows that are covered in a dull-gray, waxy fluid (Fig. 2). This fluid, as it hardens, changes from a smooth appearance to a cracked texture over the winter months (Fig. 3).

Figure 2. Freshly laid spotted lanternfly egg mass.

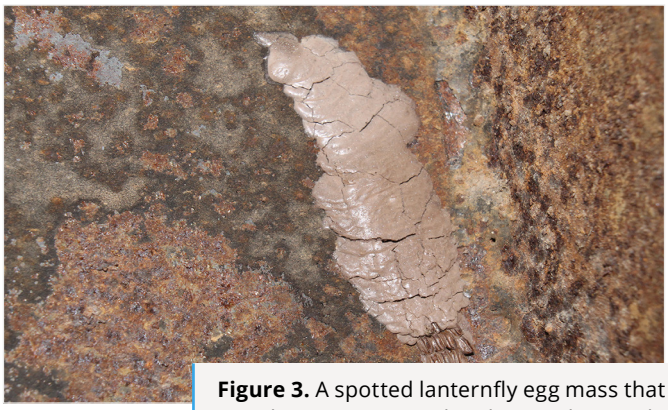

Figure 3. A spotted lanternfly egg mass that has overwintered and started to crack.

Eggs hatch in the spring and early summer. Small nymphs emerge from eggs in the egg masses as small, white insects. As their exoskeletons harden, the nymphs will turn into small black insects with white spots (Fig. 4).

Figure 4. Spotted lanternfly nymph representative of the first through third instars.

For the first three instars, the insect will remain black and white while it progresses to ~¼ inch in length. Once the insect reaches the fourth instar (~½ inch long), it will be red and black with white spots (Fig. 5). The adult will have soft pink wings with black spots along the front and black speckled bands at the edges. Adults range in size from 1 to 1½ inches long with a wingspan of nearly 2 inches.

Figure 5. Fourth (final) instar spotted lanternfly nymph.

LIFE CYCLE

In more northern geographies, egg hatch typically occurs from April through June. Nymphs develop rapidly through the four instars, with adults' emergence occurring in July through September. However, all life stages and events are likely to occur earlier in the warmer climates of Texas. Degree-day models with weather data from 2019 to 2022 show egg hatch should occur in March for most of Texas.

SURVEILLANCE

Due to its ability to rapidly propagate with few natural enemies in the United States, detection and reports of spotted lanternfly are essential. Individuals should inspect vehicles and outdoor items (i.e., plants, patio furniture, stonework, etc.) for egg masses. Once egg masses begin to hatch, individuals should look for nymphs along leaves and stems of woody tissues. Nymphs can move to higher areas along the plant and may be difficult to locate in areas with smaller infestations. Adults can be found feeding along branches and trunks.

Any specimens that can be safely collected should be frozen in a sealed container at the site of collection. Pictures with GPS coordinates are also incredibly helpful for investigations of reported sightings.

REPORT SIGHTINGS

Anyone who suspects they have found an insect that is the spotted lanternfly should contact their *local Texas A&M AgriLife Extension office*, the *Texas Department of Agriculture*, and/or the *United States Department of Agriculture*.