Virginia Cooperative Extension
Virginia Tech • Virginia State University
www.ext.vt.edu

Spotted Lanternfly, *Lycorma delicatula* (White) (Hemiptera: Fulgoridae)

Authored by Douglas G. Pfeiffer, Professor, Department of Entomology, Virginia Tech; Eric R. Day, Manager, and Theresa A. Dellinger, Diagnostician, Insect Identification Lab, Department of Entomology, Virginia Tech

Origin & Distribution

Spotted lanternfly (SLF; Fig. 1) was first detected in Frederick County in northern Virginia in January 2018. SLF is native to China, where it has been documented in detail dating as far back as the 12th century. It is also found in India, Japan, Korea, and Vietnam. The range in Virginia now includes the entire Shenandoah Valley and parts of the Piedmont. Researchers believe SLF likely arrived from China on shipping materials, possibly two years earlier than when it was first detected.

Figure 1. Adult spotted lanternfly (Doug Pfeiffer, Virginia Tech).

SLF is highly invasive and can spread rapidly when introduced into new areas. The invasiveness of SLF is attributed to its wide host range (more than 70 host plant species) and a lack of natural native enemies in invaded areas. SLF has overwintered successfully, and its geographical range in the Mid-Atlantic states is expected to expand.

Description

First through third stage nymphs are wingless and black, with white spots on the body and legs. The fourth and last nymphal stage develops bright red patches over the body but still has black legs and white spots.

Adult SLF are approximately 1 inch (2.54 cm) long and 0.5 inch (1.27 cm) wide. The legs and head are black. Once the adults have fed, the abdomen is yellow with broad, black bands on the top and bottom. Unfed adults have darker, smaller abdomens without the yellow areas. The forewings are light brownish-gray with black spots, while the wingtips have a reticulated pattern of black rectangular blocks outlined in gray. The hind wings are banded white and black on the leading edge. The lower half of the hind wing is scarlet red with black spots. At rest, the SLF holds the light brownish-gray forewings tented over its body. The wings might appear pinkish due to the red on the hindwings showing through the lighter forewings. Adult females are distinguished by the presence of a red spot on the end of the abdomen.

SLF egg masses measure about 1-1.5 inches (2.5-3.8 cm) long and 0.5-0.75 inch (1.3-1.9 cm) wide. Egg masses contain 30-50 grayish-brown eggs laid end to end in four to seven vertical columns. Newly laid egg masses have a shiny gray, waxy protective coating. Older egg masses can lose this protective coating, exposing the seed-like eggs.

Life Cycle

SLF has a single generation each year, overwintering as eggs. Eggs hatch in mid April to early May. Nymphs progress through four instars before adults appear in mid-July. Adults are abundant in August and begin laying eggs in September. Egg laying continues through November until the onset of winter kills any surviving adults. Egg masses can survive cold temperatures below 0° Fahrenheit.

Signs and Symptoms

Newly emerged nymphs disperse from egg masses and feed on a wide range of plant species. Nymphs

are most often observed on leaves and branches of host plants. Look for nymphs on smaller plants and vines during the summer. Nymphs are active and can easily jump several feet to avoid capture.

Nymphs and adults typically gather in large numbers on host plants (Fig. 2). While they may become especially active at dusk or night as they migrate up and down the trunk of the plant, they are often conspicuous in mid-day as well. Adult SLF are found on tree trunks, stems, and sometimes near leaf litter at the tree base. Although winged, adults are better jumpers than flyers, and they prefer to move up trees by walking. Adults favor feeding on tree-of-heaven (TOH, *Ailanthus altissima*) and grapevine (*Vitis vinifera*). In the fall, adult SLF focus on TOH as a host for feeding and egg laying, although females will lay eggs on other trees or on any smooth vertical surface, natural or man-made.

Fig. 2. Spotted lanternfly nymphs on grape (left) and tree-of-heaven (right) (Doug Pfeiffer, Virginia Tech).

Look for adults starting in mid-July. Mating and oviposition can be observed from evening to night from mid-September to November. Look for egg masses on tree trunks, fences, rocks, lawn furniture, storage sheds, and other smooth surfaces from October to early spring. Egg masses have been found on the lower side of large branches many feet up the main trunk of a tree.

SLF is a phloem feeder, sucking sap from trunks, stems, and leaf petioles. Heavy feeding can cause wilting of leaves and young branches. Reduced photosynthesis due to SLF feeding weakens the plant and leads to branch dieback, thinning crowns, and, eventually, host plant mortality. Heavy feeding can also cause the plant to weep or ooze sap, which ferments and produces a disagreeable odor. Oozing sap will leave a grayish-black trail down the trunk.

SLF excretes large volumes of honeydew — a sugar-rich fluid that covers the stems and leaves of trees and the ground underneath infested plants. Honeydew supports the growth of sooty mold that covers leaves and blocks photosynthesis, weakening the plant and leading to its death.

Blackened soil and even patches of yellowish-white mold can form at the base of an infested tree. Fresh honeydew often attracts other sugar-seeking insects such as yellow jackets, hornets, bees, ants, and flies. Fermented honeydew has a sour, vinegary smell.

Quarantine & Status

SLF was detected in Frederick County, Virginia in January 2018. It is expanding its range and could have a potentially strong economic impact on the country's grape, orchard, logging, and tree- and wood-product industries. This fact sheet is to aid in the recognition of the pest and the detection of possible new infestations. Suspect insects resembling SLF can be taken to the nearest Virginia Cooperative Extension office for identification at no charge. A quarantine zone currently includes Albemarle, Augusta, Carroll, Clarke, Frederick, Page, Prince William, Rockbridge, Rockingham, Shenandoah, Warren and Wythe Counties, and the Cities of Buena Vista, Charlottesville, Harrisonburg, Lexington, Lynchburg, Manassas, Manassas Park, Staunton, Waynesboro and Winchester. However, most of the infested counties now lay outside the quarantine zone; most of the Piedmont counties are infested.

Management of SLF

Removal and destruction of SLF egg masses might reduce local populations, but is not likely to eradicate SLF.

Special precautions should be taken to avoid spreading SLF egg masses into other areas. Check any lawn furniture, grills, playground equipment, storage containers, and landscaping materials for egg masses before moving these items outside of infested areas. Remove and destroy any egg masses found.

Management of TOH is important to limiting populations of SLF, but it must be approached carefully because TOH will re sprout heavily if it is simply mowed or cut down. Consult your local Virginia Cooperative Extension office for information on effective management options for removing TOH.

If not removing TOH, Transtect (dinotefuran) has been approved for use in Virginia as a basal trunk spray for control of SLF on TOH under a Special Local Needs (SLN) 24(C) label. When applied properly, this material will kill adult SLF feeding on TOH. Follow all rates and recommendations on the label. It will be helpful to remove most TOH from a property, leaving some larger trees which can then be treated with dinotefuran.

Visit Virginia Cooperative Extension: ext.vt.edu

2025 ENTO-180NP (ENTO-607NP)