



New Invader Alert: Spotted Lanternfly

by Ellen Crocker, Jonathan L. Larson, and Ric Bessin

There's a new invasive insect attacking trees—the spotted lanternfly. While this invasive insect has been attracting attention for a while in the Northeast, gathering in large numbers and feeding on trees, last year it was detected in southeastern Indiana, just across the river from Kentucky (Figure 1). Spotted lanternfly poses a major risk to trees in forests, landscapes, and orchards.

While we don't want to find spotted lanternfly in Kentucky any time soon, the sooner it is detected after it arrives, the more options will be available for managing it. Join us in a search for this unwelcome insect!

The threat

Spotted lanternfly feeds on a wide range of trees, gathering in large numbers, sucking sap, and stressing trees over time. As these insects feed, they decrease the plant's health and can cause mortality. Their high numbers on trees (and the black, sooty mold that accompanies their feeding) pose a particular threat to wine production, fruit growing, and Christmas tree production. Although the outcomes of infestations in diverse woodland settings and natural areas are less clear than in more uniform agricultural and landscape settings, the added drain on trees' resources may compound existing tree stress issues and trigger decline.

The regulatory response to spotted lanternfly can also impact Kentuckians. Restrictions on the movements of goods like lumber, the need for quarantines, and even the requirement of permits to travel or move goods out of infested areas could all have consequences for those living in infested areas.

What should we look for?

Spotted lanternflies start life as eggs, then progress through nymphal stages before becoming adults.

Eggs are laid in masses that typically contain 30-40 eggs and are coated in a putty-like substance. Initially this coating is white, but it darkens over time to look

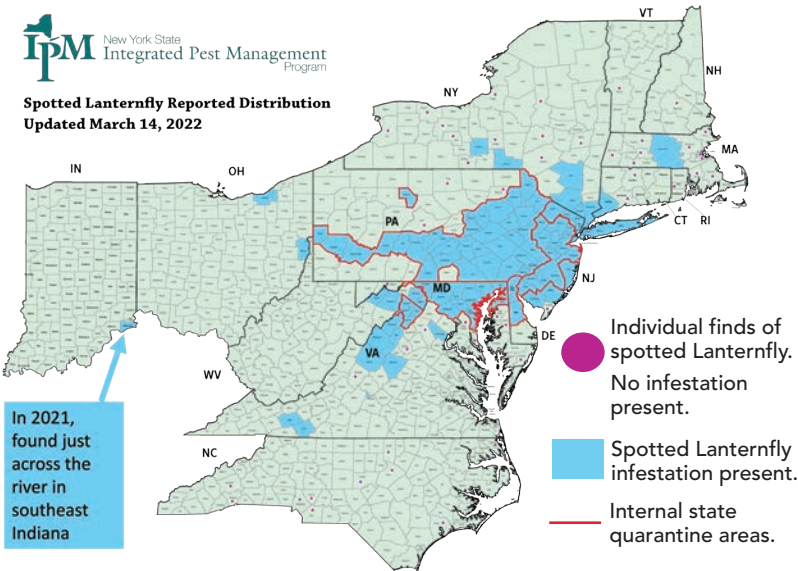


Figure 1. Spotted lanternfly was recently detected in southeast Indiana.



Figure 2. Spotted lanternfly egg masses.

Photo courtesy: Emelie Swackhamer, Penn State University, Bugwood.org

like mud (Figure 2). These egg masses can be found on natural objects like logs but have also been found on many human-made objects like vehicles and equipment. Egg masses can be found from fall through early summer.

Nymphs of spotted lanternfly develop through several stages before reaching adulthood and looks different depending on what stage it is in. At first, nymphs are black with white dots (Figure 4). Then they go through a stage that is black with red patches and white spots (Figure 5). Nymphs of all stages will jump when approached. Look for nymphs from late spring to early fall.

Spotted Lanternfly...



Figure 3. Adult spotted lanternflies are distinctive-looking insects with a pink-khaki coloration and spots and stripes on their wings, and, when viewed from the side, is vaguely teardrop shaped.

Photo courtesy: Ric Bessin, University of Kentucky

Adults are over an inch long with a mixture of stripes and spots on their wings. Adult spotted lanternflies (Figure 3) are quick and will run and jump when approached. The color of their wings is khaki pink. When their front wings are open, a second, smaller pair of wings underneath can be seen that are red with black spots. Look for the adults in the summer and fall.



Figure 4. Younger nymphs (black and white).

Photo courtesy: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org

Figure 5 below. Older nymphs (black with red patches and white spots).

Photo by Eric R. Day, Virginia Polytechnic Institute and State University, Bugwood.org



Signs on trees

Spotted lanternflies feed by inserting piercing mouthparts into host plants, which allows them to suck sap. This drain of resources stresses plants and results in other notable signs and symptoms, including:

- Wilted foliage
- Branch dieback
- Accumulation of "honeydew," a sticky, sugary fecal material
- Black, sooty mold growing in honeydew
- Increased visitations of flies, bees, and wasps feeding on honeydew

What does it feed on?

Tree-of-heaven, an invasive plant that is a problem on its own, is the primary host plant of spotted lanternflies, but they are also known to feed on over 70 different species of plants. Potential hosts include willow, maple, apple, walnut, pine, and stone fruit trees. They may also be found on hops plants, grape vines, and other orchard crops.

How to spot tree-of-heaven

Tree-of-heaven plants bear these recognizable features:

- Large (1-4 feet long) compound leaves with many



Figure 6. Tree-of-heaven has compound leaves composed of many leaflets, with small lobes at the base that have glandular dots on the underside.

Photo courtesy: Ellen Crocker

(10-24) spear-shaped leaflets with smooth edges (Figure 6)

- Small lobes at the base of leaflets, with a distinctive glandular bump on the underside
- Branches and stems that give off an unpleasant smell when cut (like rancid peanut butter)
- Smooth, green bark when young, turning gray with age (Figure 7)
- Very large tree growth (greater than 80 feet tall) is possible, but it is also common to see dense thickets of smaller trees that are clonally connected through roots



Figure 7. Tree-of-heaven bark changes with age, but large trees have a smooth grey color.

Tree-of-heaven must be carefully distinguished from native look-alikes like black walnut and sumac.

Photo courtesy: Chris Evans, University of Illinois, Bugwood.org

Have you seen spotted lanternfly?

1. Take a photo or capture the specimen.
2. Get it identified by submitting it to your local extension professional or forester.

If spotted lanternfly is discovered and the infestation is relatively contained, efforts will be made to locally eradicate the insects to prevent their continued local spread and establishment. This is done with a combination of insecticide treatment of potential host trees and eradication of tree of heaven and other preferred hosts. The sooner the spotted lanternfly is reported, the better—and the higher the probability of effectively controlling it.

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