

BOLO Insect

Image courtesy of Gregory Hoover.

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Overview

- ▶ Background
- ▶ Insect Identification
- ▶ Preferred Plant Host
- ▶ Host Plant Identification
- ▶ Tree of Heaven Control
- ▶ Spotted Lanternfly Reporting

Background

Spotted Lanternfly (*Lycorma delicatula*)

- ▶ This insect is a non-native species first detected in the United States in Berks County, Pennsylvania and confirmed on September 22, 2014.
- ▶ Native to China, India, and Vietnam.
- ▶ Likely arrived in North America hidden on goods imported from Asia.



Taxonomy

- ▶ This insect is a member of the Order Hemiptera (true bugs, cicadas, hoppers, aphids, and others) and the Family Fulgoridae,
- ▶ Also known as a lanternmoth, is neither a fly nor a moth.
- ▶ Is a planthopper.



Host Plants of Agricultural Interest

- ▶ Grapes
- ▶ Stone fruits (peaches, pears, etc.)
- ▶ Apples
- ▶ Maples, Oaks, Willows (*Salix sp.*), and Pine (*Pinus spp.*).
- ▶ The known host list contains over 70 species of plants.

Insect Identification

Egg Stage-Hatched and Unhatched



Nymph Stages



Adult Stage



Adults of spotted lanternfly are approximately 1" long and 0.5 wide"

Possible Look-a-likes



Assassin bug nymph



Oak treehopper nymphs

How Can They Spread?

- ▶ Moving infested material or items containing egg masses.

Lays its eggs on smooth host plant surfaces and on non-host material.

Non Host Material: Brush, debris, or yard waste, landscaping or construction waste, logs, stumps, firewood, nursery stock, and outdoor residential items such as recreational vehicles, tractors, tile, stone, etc



Where To Find Them?

- ▶ Spotted lanternfly adults and nymphs frequently gather in large numbers on host plants.
- ▶ Dusk is a great time to inspect your trees or other host plants for signs of this pest



How To Find Them?

- ▶ Trees may be found with sap weeping from the wounds caused by the insect's feeding.
- ▶ Later leads to a sooty mold.
- ▶ Adults are present by the middle of July in Pennsylvania and begin laying eggs by late September.
- ▶ Continue laying eggs through late November and even early December.



Preferred Plant Host

Preferred Plant Host

- ▶ Tree of Heaven (*Ailanthus altissima*)
- ▶ TOH appears to be the preferred host for **late stage instars** and **adults**.



Host Plant Identification

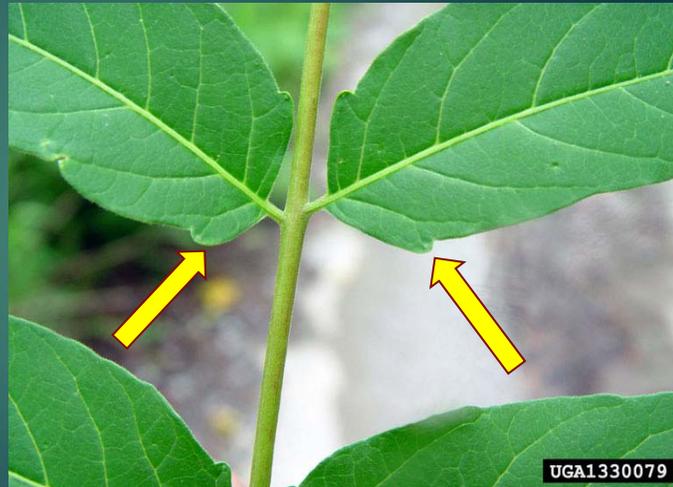
How to Identify TOH

- ▶ The tree has odd or even pinnately compound leaves
- ▶ 10 to 41 leaflets on 1 to 3 foot stalks.
- ▶ When crushed, the leaves have a strong odor resembling peanut butter.



How to Identify TOH

- ▶ Smooth Margin
- ▶ 1-2 teeth at base of leaflet



How to Identify TOH

- ▶ Male and Female Trees
- ▶ Yellowish-green flowers appear on 20 inch long terminal clusters in April to June.
- ▶ Wing-shaped fruit appears from July to February.
- ▶ Viable seeds are present on 2 to 3 year old trees.



How to Identify TOH

- ▶ V or heart shaped leaf scar
- ▶ Greyish-yellow bark at maturity.



Why is it so prevalent?

- ▶ Rapid growing tree that colonizes by root sprouts up to 50 ft away.
- ▶ Female tree can produce over 300,000 seeds annually.
- ▶ Sprouts can grow 10 to 14 feet the first year and seedlings can grow 3 to 6 feet in the first year.
- ▶ Allelopathic-inhibits growth of other plants.



Site Preferences-TOH

- ▶ **Disturbed areas:** construction sites, road sites, forest edges.
- ▶ **Intolerant of Shade:** Can not compete with dense canopies.
- ▶ **Wide Range of Soil:** Poor to rich soil, prefers rocky, less tolerant to wet conditions.



Tree of Heaven Control

Tree of Heaven Control

- ▶ Cut trees before or while flowers are blooming to prevent seeds from forming.
- ▶ If seed clusters are present on cut limbs, collect and bag these and dispose of in heavy garbage bag.
- ▶ If numerous small saplings are present and the foliage is within your reach, apply a herbicide (ex: 2% glyphosate) and surfactant solution as a foliar treatment in late summer.
- ▶ Hand pulling is very effective on very young *Ailanthus* seedlings. Plants should be pulled as soon as they are large enough to grasp.



Native Plant Alternatives

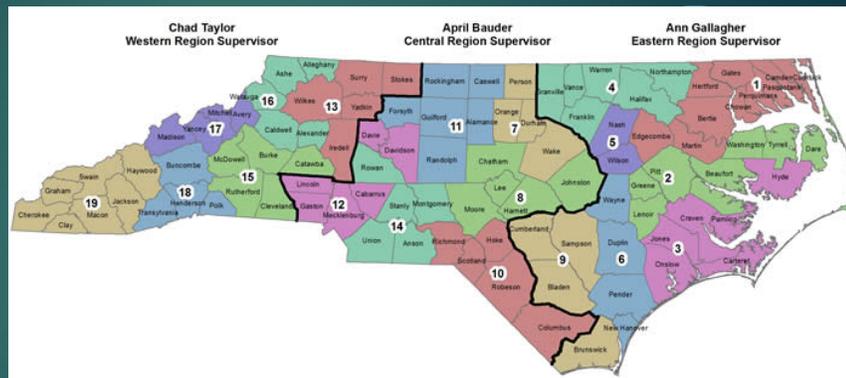
- ▶ Hickories (*Carya* spp.),
- ▶ Fringetree (*Chionanthus virginicus*),
- ▶ Green Ash (*Fraxinus pennsylvanica*),
- ▶ Smooth Sumac (*Rhus glabra*)



Spotted Lanternfly Reporting

Where to Report

NCDA & CS Plant Industry Division



Region 11:
 Alamance, Caswell, Forsyth, Guilford, Randolph,
 Rockingham
Andrew Allen
 (336) 404-5873

How to Report

- ▶ **Collect a specimen:** If you suspect you have found spotted lanternfly please collect a specimen and contact your local plant pest specialist who will assist you with specimen submission.
- ▶ **Take a picture:** If you aren't sure if what you're looking at is spotted lanternfly you can submit a photograph of any life stage to badbug@ncagr.gov with the subject "Suspected Spotted Lanternfly"
- ▶ **Report a find:** Contact your local plant pest specialist (contact information on back) or report your find to 800-206-9333 or badbug@ncagr.gov.

