

Spotted Lanternfly

Spotted lanternfly (*Lycorma delicatula*) is a new and emerging pest in the United States. Its preferred host is tree-of-heaven; however, it can be a serious pest on a wide variety of important agricultural crops, including grapes, fruit trees, hops, and ornamentals.

Spotted Lanternfly Identification



Tim Haye, CABI

Lawrence Barringer, Pennsylvania Dept. of Agriculture, Bugwood.org

Adults can be found in July and begin laying eggs in September-October. They are 1 inch long and 1/2 inch wide. Forewings are grey with dark spots and venation at the wing tips. Hindwings are red at the base with black and white above. The abdomen is yellow and black. The hindwings and abdomen are hidden when adults are at rest.



Emelie Swachams, Penn State University, Bugwood.org

Richard Gardner, Bugwood.org

Tim Haye, CABI

Nymphs hatch in April-May and develop through four stages. Early nymphal stages are small (less than 1/2 inch) and black with white spots. The fourth nymphal stage develops red markings and are over 1/2 inch long. Nymphs tend to cluster together and cannot fly.



Tim Haye, CABI

Eggs are grey-brown and laid in clusters on tree bark or a wide variety of outdoor surfaces and are easily overlooked. Egg masses can be found from September-April.

Spotted Lanternfly Distribution

Spotted lanternfly is currently established in several northeastern states, and the potential for rapid spread across North America is high. Egg clusters and adults can be easily transported by car, rail, or air. Careful inspections of materials before transport will help prevent further spread.



Lawrence Barringer, Pennsylvania Dept. of Agriculture, Bugwood.org

Spotted Lanternfly Impacts

Nymphs and adults damage plants by sucking sap from stems, trunks, and leaves. They also secrete large amounts of honeydew which hosts pathogens such as sooty mold. In Washington, grapes, fruit trees, and hops are most likely to be impacted.



Erica Smyers, Pennsylvania State University

Get Involved!

Spotted lanternfly is not currently in Washington State but is likely to first infest tree-of-heaven populations if it arrives. Mapping known tree-of-heaven populations allows for strategizing control efforts. Report any sightings of tree-of-heaven and spotted lanternfly by:

- Downloading the EDDMapS application or reporting online at: <https://www.eddmaps.org/>
- Downloading the WISC application or reporting online at: <http://invasivespecies.wa.gov/>
- Reporting directly to the Washington State Department of Agriculture: pestprogram@agr.wa.gov

Contact Us

If you have questions about tree-of-heaven identification and control, please contact us:

WA State Noxious Weed Control Board
360-725-5764

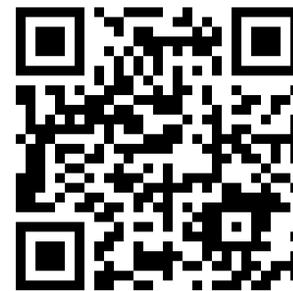
<http://www.nwcb.wa.gov>

Email: noxiousweeds@agr.wa.gov

Or contact your local county noxious weed control board, WSU Extension office, or Conservation District.

Tree-of-heaven is a Class C noxious weed in Washington State and is proposed for the WSDA quarantine list, which will prohibit its sale and distribution in WA.

For more information about tree-of-heaven and spotted lanternfly please scan the QR code



Cover: Spotted lanternfly (left image - Lawrence Barringer, Pennsylvania Dept. of Agriculture, Bugwood.org; middle, right images - Tim Haye, CABI). First printing 2020.

Tree-of-Heaven and Spotted Lanternfly



A widespread noxious weed hosts a new invasive insect

Identification

Tree-of-heaven (*Ailanthus altissima*) is a fast-growing, deciduous tree native to China and Taiwan. Growing to 65 feet or taller, trees develop a taproot and lateral roots, which sprout stems and forms thickets.

- Tree bark is smooth and gray, developing shallow, diamond-shaped fissures as it ages. It's often compared to cantaloupe skin.
- Leaves are alternate and pinnately compound - commonly with 10 to 27 leaflets.
- Stems have large heart to shield-shaped leaf scars.
- Leaflets typically 1.5 to 6 inches long. Margins are smooth except on each side near the base, where there are 1 to 3 rounded teeth, each with a gland bump on the lower surface.
- The leaves and stems have a rancid peanut-butter or popcorn-like smell when crushed.



John M. Farnell, TNCC Bugwood.org

Identification

- Male and female flowers occur in clusters on separate trees. Flowers are small and yellowish green.
- Female flowers develop a samara - a single seed in the middle of an oblong, papery wing that can be slightly twisted. Their color ranges from yellowish green, to pinkish tan and brown, and are ~ 1 to 2 inches long.
- Female trees may be identified during the winter by clusters of remaining seeds on the branch tips.



Jan Svanek, Phytosecurity Administration, Bugwood.org

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Spread, Habitat, and Impacts

Tree-of-heaven reproduces by seed and vegetatively spreads by root and stump sprouts. Mature female trees can produce 325,000+ seeds annually.

Tree-of-heaven grows in primarily open habitats, including forest edges, roadsides, riverbanks, and urban areas. Found throughout the state, tree-of-heaven has a higher known distribution in eastern Washington.

Besides being a preferred host for spotted lanternfly, tree-of-heaven can crowd out native vegetation, leach allelochemicals that may inhibit growth of neighboring plants, damage infrastructure, produce pollen that can be an allergen, and cause rashes for certain sensitive individuals.

Look-A-Likes

Quick tips to differentiate from tree-of-heaven

Smooth sumac (*Rhus glabra*) and staghorn sumac (*Rhus typhina*)

- Large shrubs with many stems. Smooth sumac is native to eastern Washington and grows to ~10 feet. Staghorn sumac is not native to Washington and grows to ~15 to 20 feet.
- Both have pinnately compound leaves, with leaflets having **toothed margins and no glands at the base**.
- Upright, dense flower clusters that form dense clusters of hairy reddish fruits (drupes).



Left and center images by Rod Gilbert; right image by Robert Vidéki, Doronicum Kft., Bugwood.org

Black walnut (*Juglans nigra*)

- Bark is brown to gray-black and has narrow, deep furrows.
- Pinnately compound leaves with leaflets having **toothed margins and no glands at the base**.
- Fruit is a walnut, round in shape, and enclosed in a greenish husk.



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Control

Whenever possible, control plants as seedlings or young plants, prior to the development of their extensive roots. Do not leave cut stems and stumps on moist soils as they may resprout. Check with your county noxious weed board about disposal options. Contact with plant parts may cause skin irritation and rashes to sensitive individuals, so be sure to wear gloves and protective clothing.

Manual: Seedlings and small plants can be hand-pulled, dug up, or pulled with a weed levering tool. This is best done when the soil is moist. Make sure to remove the roots as remaining fragments can resprout. Cutting or mowing plants alone will not provide control as stumps and roots will readily resprout.



Seedling image by Richard Gardner, Bugwood.org

Herbicide: Timing of treatment is important for success. Apply foliar spray to small plants when leaves are fully emerged, from mid to later growing season. For larger plants, treatments such as basal bark, frill cuts, or stem injection should occur from mid-summer to early fall. Check with your county noxious weed control board and the Pacific Northwest Weed Management Handbook

When necessary, prioritize the control of female trees to prevent further seed production.

(<https://pnwhandbooks.org>) for specific herbicide treatment information.

Frequently monitor the area for multiple years, controlling any new seedlings and resprouts.

Plant the area with native and/or non-invasive plants to create shade and provide competition to discourage tree-of-heaven seedlings and prevent other weeds from establishing.