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Homeowner Resources

What can you do to help? **“Join the Battle, Beat the Bug”**

This insect is an excellent hitchhiker and is easily moved if no one is looking. If you are in the quarantine area, please **“Look Before You Leave.”**

Inspecting your vehicles, trailers, or any outdoor items before you move around or out of a quarantine zone is important. If possible, don't park under tree lines and keep windows rolled up when parking your vehicle. Familiarize yourself with the life stages of the insect and when in the season to look for them.

Survey your own property and community for possible SLF life stages. Any efforts you make in destroying the Spotted Lanternfly or its egg masses will help you and community reduce populations.

Please report any sightings outside of the quarantined counties. Reports are recorded in a database for use by the NJDA and USDA to manage this pest. The database is used to help determine infested areas and possible treatment for high risk properties. Treatment is based on location, risk, and available funds. Join the effort to control and prevent the spread of Spotted Lanternfly. We need everyone's help to protect their properties and communities from this invasive pest.

Please do not panic, Spotted Lanternfly will NOT sting or bite humans or animals.

If you see a Spotted Lanternfly, help us Stomp it Out!

To report a sighting, use the [reporting tool](#). For other questions, email us at SLF-plantindustry@ag.nj.gov.



Quarantine Zones

Know Your Zones: The spotted lanternfly is quarantined in several Eastern states, so drivers who travel through these areas need to be extra careful that they aren't moving this pest. Check with your state agricultural department for quarantine information.

If your employment or business operates in or near an infested area, or if you receive shipments from an infested area:

- **Check Your Vehicle:** Before leaving a parking lot or work site, inspect vehicles for spotted lanternfly egg or insects. Check doors, sides, bumpers, wheel wells, grills, and roofs. If found, destroy any eggs or insects you find.
- **Inspect Items Being Moved:** Check shipping containers, propane tanks, pallets and other items being stored outdoors before they are moved off-site. Inspect incoming goods for egg masses and insects.
- **Park with Windows Closed:** The spotted lanternfly and its nymphs can enter vehicles unsuspectedly. When parked, make sure to keep windows closed. If possible, try to park 15 feet away from trees if in a quarantine zone.
- **Remove and Destroy Pests:** Crush nymphs and adult insects. Scrape egg masses into a plastic bag and place in trash.
- **Remove Host Trees:** Spotted lanternflies prefer the ailanthus tree, also known as “Tree of Heaven.” Try to remove trees from the business property to avoid attracting spotted lanternfly.
- **Report Sightings:** Contact the state agricultural department to [report](#) sightings outside of quarantined zones. If possible, take a picture or capture the insect in alcohol.
- **Comply with Permitting:** Businesses operating in quarantine zones must have permits to move equipment and goods. Visit <https://extension.psu.edu/slf-permit-training-nj> for more information about permits.

[Spotted Lanternfly Informational Handout \(English\)](#).

[Spotted Lanternfly Informational Handout \(Spanish\)](#).

Do You Live in a Quarantine County?

Currently quarantined counties include:

- Burlington
- Camden
- Essex
- Gloucester
- Hunterdon
- Mercer
- Middlesex
- Monmouth
- Morris
- Salem
- Somerset
- Union
- Warren

Counties with confirmed small SLF populations and /or regulatory incidents:

- Atlantic
- Bergen
- Cumberland
- Hudson
- Ocean
- Passaic
- Sussex

- [Spotted Lanternfly Distribution Map \(US\)](#).



Regulated Articles

To stop the spread of spotted lanternfly (SLF), the New Jersey Department of Agriculture (NJDA) has issued a quarantine for counties where SLF populations have been confirmed. This quarantine requires all businesses and organizations moving within or from the quarantine zone in the course of their work to obtain permits issued by NJDA.

Regulated articles include but not limited to:

- Any living life stage of SLF.
- Landscaping, remodeling and construction waste.
- Firewood of any species.
- Packing materials (e.g., wood pallets, crates, boxes)
- All plants and plant parts including logs, stumps and any tree parts.
- Outdoor and household articles like RVs, boats, lawn mowers, chairs, grills, tarps, tile, stone, deck boards, and trucks or other vehicles not stored indoors.
- Anything!



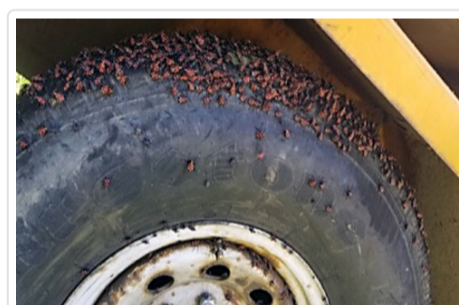


Management & Control Options

Control Options	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Don't move any life stage												
Scrape/smash eggs												
Use tree traps (e.g., sticky bands with wildlife barrier)												
Contact Insecticides (after hatch and avoid bloom)												
Systemic application of imidacloprid (after bloom)												
Systemic application of dinotefuran (after bloom)												

Monitoring

As mentioned above, SLF utilizes a large range of plant hosts. Home gardeners have reported SLF feeding on their backyard plants, including cucumbers, basil, rose, peony, Russian sage, and more. In most cases, SLF will only feed on these herbaceous plants for a short period of time (less than one week). In some cases, damage on these plants has also been reported. Whether or not damage occurs appears to be largely dependent on the density of the population and other plants in proximity. We highly recommend that you monitor for SLF on a regular basis to try to predict where SLF is likely to feed and move in a given area. If there are other highly desirable hosts nearby, we recommend you focus monitoring and potential treatment on those plants. Monitoring can be done through visual inspection.

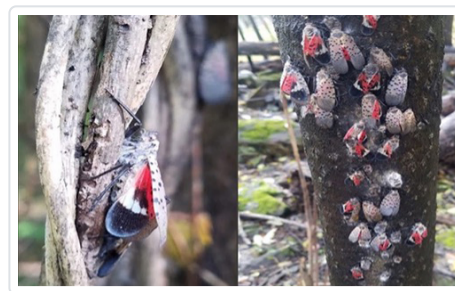
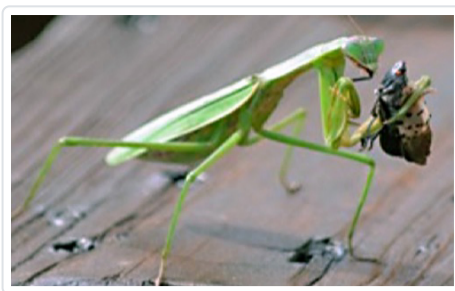


Management

It is important to understand that SLF cannot be prevented from coming onto any one property. SLF adults tend to fly to new trees to feed in the late summer. Properties adjacent to land with high populations of SLF will likely experience higher populations of SLF when the adults begin to move around. While we are currently working on developing alternative management practices for SLF, our most effective control measure to date is the use of insecticides.

Biological Control

Predacious insects and spiders, parasitoids, and fungi have all been found attacking SLF in the United States. These are generalist natural enemies and they are unlikely to greatly reduce the population levels of SLF. More research is being done to understand if we can better utilize these already existing natural enemies for SLF management. Currently, there is no commercially available biological control option available for SLF. Research is ongoing to find potential parasitoids or pathogens that can be released into the United States as a long-term control solution.



Cultural Control

Removing Preferred Host Plants

If tree-of-heaven is found on the property, we recommend its removal, if possible and practical. When removing tree-of-heaven, you should use an herbicide (see [Tree-of-Heaven](#) for more information). If there are other tree species on the property that are not highly valued by the homeowner and have high populations of SLF, they could also be removed. Removal of preferred hosts, including wild grape and oriental bittersweet, might help reduce populations of SLF. Trees that overhang outdoor living spaces such as patios or pools can be pruned to reduce dropdown of SLF and honeydew/sooty mold accumulation. Otherwise, consider treating these trees with an insecticide to reduce the nuisance in these areas.

Scraping Egg Masses

Scraping SLF egg masses and placing them permanently in an alcohol solution (e.g., rubbing alcohol, hand sanitizer) is another approach to reduce SLF damage. It is important to consider that SLF egg masses are laid on many surfaces, including rocks, trees, fence posts, and outdoor furniture. Additionally, because egg masses can be found at all heights on a tree, safely reaching all of them is not practical.



Destroying Spotted Lanternfly Egg Masses

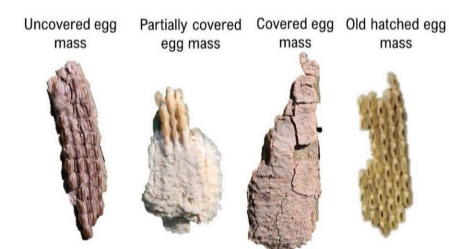


[Destroying Spotted Lanternfly Egg Masses](#)

Chemical Control

Ovicides

Based on studies done in 2018 and 2019, our results suggest some insecticides have ovicidal action against SLF eggs. All studies were done on intact egg masses (with covering) between February and April. Although many synthetic insecticides were tested against SLF eggs, the most effective products tested were paraffinic and/or mineral oils such as JMS Stylet oil, Damoil and Lesco Horticultural oil, commonly used in fruit systems as insecticides to control soft bodied insects. Many of these oils are also available to residents at local garden centers. When oils were applied at a solution of at least 3 percent, they were effective in killing up to 75 percent of treated eggs. One of the most important parts to getting effective control is to make sure you have good coverage and apply the oil solution directly to the egg masses. The only plant-based oil, soybean oil, had similar control of SLF egg masses when applied at a 50% concentration. Oils, when applied at the correct time and with good coverage, can offer some control of egg masses and have very little non-target effects. The use of oils provides not only a safe, environmentally friendly option but also provides control to some egg masses that are not accessible for physical removal or smashing. However, for egg masses that are within a reachable area, smashing or scraping the egg masses will provide greater efficacy than the ovicides currently available.



Contact Insecticides

Many commonly available insecticides that kill insects on contact are effective against SLF. Efficacy, residual activity, and toxicity vary between products. We recommend trying the least toxic options first. Toxicity to mammals can be determined from the LD50 values found on the Safety Data Sheet (SDS) for each product, and toxicity to birds, fish, and bees can be found in the table below. If systemic insecticides are not used, frequent use of contact insecticides may be needed to control SLF for the entire season. Always apply insecticides after bloom is finished to help protect natural enemies and pollinators.

*Some trees are sensitive to horticultural spray oil.

Note: This is a guide for when to use management tactics to manage SLF. Read each label carefully and apply according to the label directions. These are our current best recommendations for management tactic timing, but not all combinations of active ingredient, timing, application methods, and tree species have been tested.

Systemic Insecticides

We recommend the use of systemic insecticides for adult SLF control only in high-population areas and high-value trees. Research trials are ongoing to evaluate the best application method, active ingredients, how much insecticide is needed to kill SLF, and how long the insecticide application will last. Based on current data, most systemic applications will last at least two months. Obtaining additional months of control is possible but highly variable depending on many factors (application method, active ingredient, weather, tree species and size, etc.). Proper timing of the application also seems to be very important for effectiveness.

Always read the label and apply the pesticide according to directions. Certain products and/or applications may have restrictions on the cumulative amount of pesticide applied per designated timeframe or acreage. It is illegal to exceed limits of product use that are specifically stipulated by the label. This is true regardless of lack of adequate target pest control (SLF) due to the variable conditions as noted above. Always apply insecticides only after bloom is finished to help protect natural enemies and pollinators.

Three application methods are used to get systemic insecticides to be taken up by the plant: injection, trunk sprays, and soil drenches.

Trunk Injection

Based on current information, injection with dinotefuran has been successful at killing SLF in a variety of tree species, including tree-of-heaven, silver maple, and red maple. Death of SLF has been observed in less than 24 hours after injecting a tree. Injections with imidacloprid have also been evaluated with good success.



Trunk Spray

Trunk sprays with dinotefuran have also been successful. This treatment program is currently being used by USDA APHIS and the Pennsylvania, New Jersey, and Virginia Departments of Agriculture. Observed death of SLF may take longer than with injected applications but is still likely to occur within a few days of treatment. If the label requires a bark penetrant, be sure this is included in your application. Trunk spray applications of imidacloprid have had variable results and more research is needed.



Soil Drench

Little data on soil drench applications of insecticides to control SLF is available to date. The insecticide needs time to be taken up by the tree roots, and this is often the method with the greatest time delay until it begins to kill SLF. Postbloom spring applications of imidacloprid soil drenches are recommended, whereas dinotefuran should be applied midsummer until September to target adult SLF. Soil drench application is a commonly used method, especially for formulations widely available to home gardeners. Read the label carefully and follow the directions to achieve best results.

Systemic Products

Characteristics of contact versus systemic insecticides.

CHARACTERISTIC	CONTACT INSECTICIDES	SYSTEMIC INSECTICIDES
How they kill	SLF are killed when the chemical contacts the body of the insect.	Systemic insecticides are absorbed by roots, bark, or leaves and moved through the vascular system to other parts of the plant, killing the insect when it feeds on the treated plant.
Application method	Spray with appropriate equipment.	There are four methods: foliar, injection (usually applied by professionals), trunk spray, and soil drench.
Longevity	Residual activity is dependent on product, but can be from 0 to 14 days; less-toxic contact insecticides require thorough coverage of the insect's body and tend to work for a short period.	This depends on application method and product, but can be up to two months or more; keep in mind that systemics take time to move into the tree. Systemic insecticides should only be applied to actively growing trees, so they should not be applied in late fall or winter.
When is it recommended for SLF?	Target populations of nymphs or adults; to protect pollinators, do not apply insecticides to blooming plants.	Most systemic insecticide applications are recommended for adult SLF. Apply systemic insecticides only after bloom is finished to protect pollinators and other beneficial insects. Do not apply systemic insecticides to plants that SLF will not feed on—they need to feed in order to ingest the poison.

Systemic products for spotted lanternfly adults.

ACTIVE INGREDIENT	TOXIC TO BIRDS	TOXIC TO FISH	TOXIC TO BEES	APPLICATION METHOD	RECOMMENDED TIMING	ACTIVITY AGAINST SLF	RESIDUAL ACTIVITY
Dinotefuran	S	S	H	Soil drench, trunk spray, or trunk injection	July to September	Excellent	Excellent
Imidacloprid	M	M	H	Soil drench	After flowering to July	Variable	Variable
Imidacloprid	M	M	H	Trunk injection	July to September	Variable	Excellent

N = nontoxic; S = slightly toxic; M = moderately toxic; H = highly toxic; — = data not available.

This table is based on the experiments we have done to date and should not be considered final or complete.

Contact products for nymphs and adults.

ACTIVE INGREDIENT	TOXIC TO BIRDS	TOXIC TO FISH	TOXIC TO BEES	ACTIVITY AGAINST SLF	RESIDUAL ACTIVITY
Beta-cyfluthrin	M	H	H	Excellent	Excellent (up to two weeks of activity)
Bifenthrin	M	H	H	Excellent	Excellent (up to two weeks of activity)
Carbaryl	S	N	H	Excellent	Poor
Zeta-cypermethrin	S	H	H	Excellent	Poor
Malathion	M	H	H	Excellent	Poor
Neem oil*	—	H	H	Good	Poor
Natural pyrethrins*	N	H	M	Excellent	Poor
Insecticidal soaps*	N	N	N	Good	Poor
Paraffinic oil or horticultural spray oil*	—	—	—	Good	Poor

N = nontoxic; S = slightly toxic; M = moderately toxic; H = highly toxic; — = data not available.

***Some products may have organic labeling.**

This table is based on the experiments we have done to date and should not be considered final or complete. The contact insecticides can include spraying on trunk, branch, and foliage.

Potential Non-target Effects of Insecticides

Water Contamination

Every precaution should be taken to protect surface water and groundwater from pesticide contamination. Trunk injections pose the smallest risk to contaminating water because the insecticide goes directly into the tree. Soil drench applications should only occur directly adjacent to the trunk of the tree, as directed on the label. Soil drenches should not be applied to sandy soils or where the water table is shallow. Both dinotefuran and imidacloprid can persist in groundwater for extended periods. When exposed to sun, both of these compounds break down readily. To protect surface water, systemic insecticides should not be applied near open water sources (ponds, lakes, streams).

Pollinators & Other Insects

Many of the trees on which SLF have been observed feeding in high densities are also pollinated by bees (e.g., maples and oaks). It is possible that trees treated with systemic insecticides could have insecticide residue in the flowers and nectar the following spring. Neonicotinoid insecticides, in particular, have been associated with bee health decline. Additionally, there are many native insects that utilize these trees at the same time as SLF (e.g., caterpillars, beetles, lady beetles, lace-wings, parasitoid wasps) and could be affected by the treatment. Pyrethroids can also be damaging to natural enemy populations and could cause populations of secondary pests, such as mites and scale, to flare up. Generally, systemic insecticides are considered to have a reduced impact on natural enemies compared to broad-spectrum foliar-applied insecticides. We are currently conducting research to determine the effect of SLF treatments on pollinators and other non-targets.

Tree of Heaven

Tree-of-heaven (*Ailanthus altissima*), is an invasive and rapidly growing deciduous tree, now common to urban, agricultural, and forested areas. Spotted lanternfly is particularly attracted to tree-of-heaven. Learn how to identify and manage the tree and why it's important to the fight against spotted lanternfly.

- Factsheet: [Tree-of-Heaven Identification and Management](#)
- Video: [Tree of Heaven: Accurate Identification](#)
- Video: [Controlling Tree of Heaven: Why it Matters](#)



Treatment Options

[SLF Management for Homeowners](#)

[SLF Management and Pesticide Safety](#)

[Choosing a Qualified Pest Management or Lawn Care Company](#)

[Deciding If and When to Treat for SLF on Ornamentals](#)

[SLF Egg Masses: What to Do](#)

[Yard Waste in the Quarantine Area](#)

[Controlling Tree of Heaven: Why it Matters](#)

[Spotted Lanternfly: Management Options Through The Seasons](#)

Traps

[DIY Spotted Lanternfly Circle Trap](#)



Resources for Homeowners

NJDA Spotted Lanternfly Survey Staff

If a staff member from the NJDA requests to survey an outdoor area, they will be wearing easily identifiable attire as shown below. Staff members will always carry State or Federal identification on them. The survey staff will only request to survey outdoor areas where the Spotted Lanternfly have been reported.



Spotted Lanternfly

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[SLF Permit Training](#)

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