

Deciding If and When to Treat for Spotted Lanternfly on Ornamentals

Some insect pests have one life stage that is especially vulnerable to insecticides but have other life stages that are harder to control. Spotted lanternfly is different.



Young SLF nymphs feeding on the underside of a leaf. Photo: Emelie Swackhamer, Penn State

Spotted lanternfly (SLF) nymphs and adults are both fairly easy to kill with insecticides; even the less toxic insecticides like soaps and oils can work well. That said, there are many things to consider before deciding to use an insecticide to kill SLF on landscape trees or shrubs. Some things you should take into account are: the number of SLF present, if they are on a preferred host plant where they are likely to remain or if they are on a plant they will move away from after a shorter visit, the size and health of the plant, the presence or absence of preferred host plants in the landscape, and the life stage of SLF.

Penn State recommends using an Integrated Pest Management (IPM) approach, first taking the numbers of SLF present into account and then using cultural, mechanical, biorational, and as a last resort chemical management tools to achieve the desired level of control. If you decide to use a chemical (an insecticide), use the least toxic but effective option. Use only EPA registered insecticides approved for the site (this is required by Pennsylvania pesticide laws.) Always read and follow the label directions. Do not use home remedies because they may harm plants and beneficial insects and they may also be toxic to humans.

How many SLF are present?

To date, we have not observed SLF killing otherwise healthy ornamental trees in landscapes. We have only observed SLF killing *Ailanthus altissima* (an invasive weed tree), grapevines, and small tree seedlings. Also, large numbers of SLF nymphs feeding have caused wilting on herbaceous plants and branch dieback on some trees. To date, there is no reliable way to measure how much stress a certain amount of SLF causes on an ornamental plant and translate that to an action plan.

A few SLF feeding on a healthy tree is probably not a big concern for the long-term health of that tree. Nymphs ingest less volume of tree sap than the adults, so a population of nymphs is thought to be less damaging than the same number of adults would be. Later in the season, SLF adults feed voraciously on tree sap for weeks and research has shown that this can stress trees by reducing their energy storage for winter.

SLF excrete honeydew (partially digested tree sap that contains sugars) which allows sooty molds to grow under heavily infested trees and can result in cosmetic damage to decks, cars, and other possessions. Stinging insects are attracted to honeydew and are often found around SLF. The amount of honeydew and nuisance that is produced depends on the number of SLF but usually, it is a problem associated with the adult stage.

Individual people vary in their willingness to tolerate different amounts of SLF on their plants and different amounts of honeydew and sooty mold growth on their property.

Here today, here or gone tomorrow?

SLF nymphs and adults frequently move from one plant to another which makes it difficult to predict the amount of protection you will accomplish by treating a specific plant with an insecticide. However, if you have a lot of their favorite plants in your area (especially *Ailanthus altissima*), you might experience high populations of SLF because they have access to a plentiful food source.



Is your plant affected by other stressors?

Newly planted ornamentals or plants stressed by other insects, diseases, site-related or environmental conditions may be less able to withstand high levels of SLF feeding. In these cases, it may be more important to treat those plants for SLF to protect them from any additional stress.

Try mechanical methods first.

You can eliminate a lot of SLF by destroying their eggs over the winter months (smash or scrape them into alcohol.) Nymphs often fall out of trees and then walk to the trunk or another plant and climb back up to start feeding again. We can take advantage of this predictable behavior of the nymphs by carefully [using sticky bands or traps](#) to catch them as they climb up trees. You can vacuum SLF off trees. For a small number of insects, these methods may be the best options.

How are insecticides used?

There are different ways to use different types of insecticides. Contact insecticides kill SLF when the chemical contacts the insect as a direct spray. Systemic insecticides are absorbed by roots, bark, or leaves and are moved through the vascular system to other parts of the plant. Links to current, specific recommendations for insecticides are included at the end of this article.

Controlling SLF nymphs

SLF nymphs feed on tender plant tissue, like young leaves and leaf petioles in trees and shrubs, and succulent stalks of perennials and annuals. On a tree, they will be feeding throughout the canopy and will be hard to reach with contact insecticide sprays.

Nymphs will often feed in higher numbers on a particular plant on a given day. While they may not remain there long, this can be a time to apply lower toxicity contact sprays, for example, insecticidal soaps or oils. Never spray any insecticide on flowering plants to protect pollinators that visit flowers for nectar.

Insecticides with longer residual activity can also be used to kill SLF nymphs on plants. To protect pollinators, insecticides should not be applied to plants that are in flower or will flower during the time period that the insecticide is effective. Please note that insecticide residue can kill other beneficial insects and may lead to a secondary outbreak of pests like aphids or mites because their natural predators are absent.

Nymphs ingest less volume of tree sap than the adults, so a population of nymphs is thought to be less damaging than the same number of adults would be. Properly applied systemic insecticides can make a whole tree toxic to nymphs but many can only be applied once per season. Depending on the systemic product, the residual activity may not last through the end of the season when SLF adults will be present. To protect pollinators, systemic insecticides should only be applied after flowering. For trees that flower later in the season, it may be difficult to get the systemic insecticide in place in time to kill

young SLF nymphs. For these reasons, systemic insecticide applications are usually used to target the adult stage rather than the nymphs.

Using insecticides to kill SLF nymphs will not prevent SLF from coming onto your property later in the season.

Controlling SLF adults

Later in the season (August-November), adult SLF often fly to common landscape trees like red maple, silver maple, river birch, willow, London plane tree, and others, and feed for weeks. They can create quite a nuisance and cause stress to the trees.

Contact insecticides are frequently used to control SLF adults because many of them feed on the lower parts of trees where they are more visible and are easier to reach with direct sprays.

Properly applied systemic insecticides can provide weeks of control by continuing to kill SLF adults as they arrive.

SLF adults often choose a favorite or “hot” tree and they will gather there to feed in large numbers for several weeks later in the season. This can occur even among trees that appear similar (same cultivar, age, growing conditions, apparent health, etc.). If you have observed a hot tree that SLF adults preferred in previous years, there is a good possibility that they will return to that tree in subsequent years. These hot trees are good candidates for targeting with systemic insecticides.

Over several weeks, as SLF continue to move to the treated tree, they will feed and die. Destroying SLF on that hot tree may reduce the number of live SLF you have on your property and the number of eggs deposited to hatch there the following year. Keep in mind, large quantities of dead SLF can accumulate under these treated hot trees. They smell bad as they decompose which can create another nuisance.

Using insecticides to kill SLF adults will not keep more SLF adults from coming onto your property.

Keep them contained and avoid spreading SLF

If you are on the edge or outside of the known range of SLF, destroying them could keep them from getting to new areas. The current quarantine/distribution map of Pennsylvania is found on the [Pennsylvania Department of Agriculture website](#) and the current national map is found on [the New York State IPM SLF website](#). Especially if you find SLF outside of the area where they are known to occur, you should take a picture of them or collect some samples for evidence, report your findings on the Penn State SLF website, and try to destroy them.

This article summarizes our current understanding of the threat SLF poses to landscape plants and recommendations for control. As we learn more about the behavior of SLF recommendations will change. Check the Penn State spotted lanternfly website for the most recent recommendations.

For more information and specific recommendations

- [Spotted Lanternfly Management for Homeowners](#)
- [Spotted Lanternfly Management for Landscape Professionals](#)
- [Spotted Lanternfly Management and Pesticide Safety](#)

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