



Best Management Practices for Spotted Lanternfly in Yards and Landscapes

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Introduction

Spotted lanternfly (SLF) can be successfully controlled in yards, landscapes, and other public areas with Best Management Practices. The key for success depends on the proper timing of applications and the use of effective chemicals or biological controls. Since SLF is highly mobile and can easily move from tree to tree, or from ground level to up into trees, it is important to monitor SLF populations on a repeated basis during the year. Do not move any infested materials to limit the spread of this pest. Be aware that SLF will likely move from unsprayed areas into treated areas after treatments dissipate. Table 1 will help you look for the appropriate life stage at the proper time of the year. Table 2 specifies which treatment recommendations are appropriate for the time of year.

Table 1. Time of year and expected life stage of SLF.

<p>November – April</p> <p>Look for SLF egg masses on branches and trunks of plants. Even pencil-sized branches may hold egg masses.</p>		
<p>May - June</p> <p>Early immature or nymph stages of SLF are black with white spots.</p>		
<p>Late June to early July</p> <p>The fourth and final stage of the SLF nymph has red coloration in addition to black with white spots.</p>		
<p>Mid-July – October</p> <p>Adults are present from mid-July until a hard frost in late fall. Adults start laying eggs in mid-September.</p>		

Table 2. Time of year and appropriate treatments.

Activity	January – April	May – October	November - December
Scrape eggs			
Apply dormant oil to egg masses			
Use sticky band traps on trunks			
Use contact insecticides as spot sprays			
Use soil drench of systemic insecticides			
Use organic sprays or biological control			
Do not move any infested materials			

Pesticides, Method of Application, and Timing for Best Control

Systemic insecticides, regardless of the application method, should be used after the tree or shrub has finished flowering. Soil drenches should not be used if flowering plants are planted at the base of the tree or shrub. These practices protect pollinators. Systemic sprays are not effective against egg masses.

Table 3. Systemic insecticides, methods, and timing for control of spotted lanternfly

Systemic Insecticides Active Ingredient	Method of Application	Timing for Best Control
Dinotefuran	Soil drench or trunk spray	July to September
Imidacloprid	Soil drench	After flowering to July
Imidacloprid	Trunk injection	July to September

Contact insecticides should be used as a spot spray for clusters of SLF adults or nymphs found on vegetation. The products listed below are effective, but SLF is highly mobile and will likely to move from untreated areas into treated areas after the insecticide wears off. Contact insecticides are not recommended for egg masses.

Table 4. Contact insecticides, methods, and timing for control of spotted lanternfly

Contact Insecticides Active Ingredient	Method of Application	Timing for Best Control
Bifenthrin	Trunk, branch, and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary
Carbaryl	Trunk, branch, and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary
Zeta-cypermethrin	Trunk, branch, and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary
Malathion	Trunk, branch, and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary
Tau-fluvalinate + tebuconazole	Trunk, branch, and foliage sprays	May – early July Spot sprays as needed. Repeat in Fall if necessary

Organic Control: Neem oil and natural pyrethrin’s can be used when SLFs are found on plants, but repeated applications of these materials may be necessary as SLF is very mobile and more will move in after the pesticide wears off.

Dormant oil can be used as a spot spray on egg masses, but should only be used in late winter and before bud break in the spring. Some horticultural oils and paraffinic oils can be used as a spot spray on egg masses on trees in the growing season, but these materials should be tested on a few branches first to make sure it will not harm the tree. Wait 2 weeks and retreat entire tree if no damage is observed to the tree. Do not use oil sprays as a preventative application to a tree against egg-laying by SLF; this is not effective.

Table 5. Organic insecticides, methods, and timing for control of spotted lanternfly

Organic Controls	Method of Application	Timing for Best Control
Neem oil	Trunk, branch and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary.
Natural pyrethrin’s	Trunk, branch and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary.
Insecticidal soap	Trunk, branch and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary.
Horticultural oil and paraffinic oil	Trunk, branch and foliage sprays	May – early July Spot sprays as needed. Repeat in fall if necessary. May damage some plants; treat a small area and wait 2 weeks to make sure it will not harm plants.
Dormant oil	Trunk and branches with egg masses. Do not apply to foliage.	Directly on egg masses. Treat from mid-February to late April, beginning when overnight temperatures do not go below freezing the first night after application.

Biological Control: Fungal preparations can be applied from early May to early June. Fungal preparations are limited by environmental conditions such as moisture levels and temperature. They are slow-acting and control may not be apparent for several weeks. Also, SLF is highly mobile and will likely to move from untreated areas into a treated area over time.

Table 6. Biological controls, methods, and timing for control of spotted lanternfly

Biological Controls	Method of Application	Timing for Best Control
Burkholderia spp. strain A396 (Venerate XC)	Trunk, branch and foliage sprays	May – early July Spot sprays as needed.
Beauveria bassiana (Botanigard, etc.)	Trunk, branch and foliage sprays	May – early July Spot sprays as needed.

References

Leach, Heather, E. Swackhamer, and A. Korman. 2019. “Spotted Lanternfly Management for Landscape Professionals.” <https://extension.psu.edu/spotted-lanternfly-management-for-landscape-professionals>

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