

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.