

Northeastern IPM Center Partnership Grant Impacts

Reducing Spotted Lanternfly Damage to Specialty Crops (2019)

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THE NEED

- Spotted lanternfly* (SLF) attacks fruit trees, using its piercing/sucking mouthparts to feed on the sap in trunks, branches, twigs, and leaves, and it can feed through bird netting.
- As SLF digests the sap, it excretes large amounts of a substance called honeydew, which can cause outbreaks of sooty mold and other fungi on the leaves and fruit, further damaging the plant and stunting growth.
- In states where SLF has been established or detected, it threatens damages of \$802 million in tree fruit, \$113 million in grapes, \$110 million in small fruit, and \$2.6 billion in ornamentals.
- **Nationwide, these numbers grow to over \$18 billion in damage** (NASS, 2017).
- Spray records from 5 impacted vineyards indicate that the number of insecticide applications increased from 4.2 applications in 2016 to 14 in 2018, thereby **increasing insecticide cost from \$54.63/acre to \$147.85/acre in 2018** (Harper et al., 2018). Each of these vineyards reported spraying insecticide every 3-5 days during peak SLF activity and still could not maintain control.
- **The existing and potential damage to fruit production and the increased use of insecticides prove a clear need for IPM research.** A working group was funded to address the threats posed by SLF.



Instar and adult SLF gather on an *Ailanthus altissima* tree in August in Pennsylvania. Photo: Emelie Swackhamer



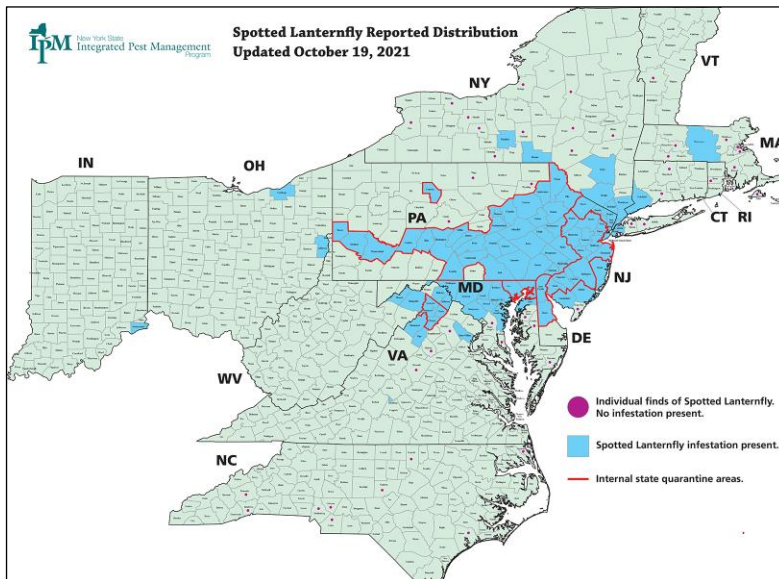
SLF adults feeding on grapevine. Photo: Erica Smyers



Sooty mold from SLF. Photo: Erica Smyers

IMPACTS

- The SLF working group built multistate and regional research and outreach efforts.
- **The SLF working group leveraged their Northeastern IPM Center by receiving a USDA-SCRI award of \$7.3 million in 2019.**
- The four-year SCRI grant is complemented by more than **\$5 million** in matching funds from participating crop growers and landowners.
- The group continues to work towards increased public awareness of SLF and dissemination of outreach materials, many of which have been created in collaboration with multiple states and agencies.
- **The Northeastern IPM Center has reached 1,153 people via 5 SLF outreach webinars** in 2018 and 2019.
- Long-term impacts will include increased knowledge of biological control options, development of environmentally and economically sustainable solutions, and integration of SLF management into holistic IPM programs.
- For example, this project led to a publication titled “Evaluation of insecticides for control of the spotted lanternfly, *Lycorma delicatula*, (Hemiptera: Fulgoridae), a new pest of fruit in the Northeastern U.S.,” which found the following:
 - Only thiamethoxam and bifenthrin offered 50% or greater control up to 14 days after the application for adults.
 - Chlorpyrifos was effective at killing 100% of eggs.
 - As SLF continues to expand its geographic range, we may have to rely on chemical control until biological or other cultural control measures are discovered and implemented.



Map: New York State IPM Program; funding by New York State Department of Agriculture & Markets, and the Northeastern IPM Center.



Multiple egg masses on a vineyard post. Each mass contains 30–50 eggs. These should be scraped off before they emerge in the spring.
Photo: Erica Smyers

WEBSITES

www.northeastipm.org/working-groups/spotted-lanternfly/

www.StopSLF.org

**Lycorma delicatula*