

Cornell Cooperative Extension Finger Lakes Grape Program



July 21st, 2021

Finger Lakes Vineyard Update

In the Vineyard

The crop size continues to look healthy overall this year. I don't think that it's "2017 healthy" (which would probably be just as well for most folks), but I still don't see much evidence pointing to a lower-than-normal crop either. Canopies continue to look healthy and relatively large in most places thanks to the recent rains. Rainfall for the month of July is in the 3-5" range based on readings from several weather stations, but I wouldn't be surprised if some localized areas have had even more than that. Fortunately, we're looking at several days of sun and dry weather here which will help folks get caught up on some things in the vineyard like leaf pulling and hedging passes.

In This Issue:	
In the Vineyard	pg. 1
IPM	pg. 2
Spotted Lanternfly	pg. 5
Events	pg. 13
GDD	pg. 15



Left: Valvin Muscat clusters with full clusters and large berries.

Right: Recent rains have encouraged greater canopy growth, which shades the fruit without leaf pulling. The weather has delayed practices like leaf-pulling lately.

Grape and Wine Classifieds

If you are a somewhat regular user of the Classifieds website, or even an occasional "peruser", you might have had some difficulty in using the site lately, like getting blocked from accessing it, or having ads expire after a day or two, or other issues. I'm very sorry for those frustrations for our users. We've been trying to beef up the security of the site by trying a few things, and in doing so we seemed to inadvertently block some of our users too. It's did help to reduce the number of spam ads we had tremendously, but it also reduced the ads that were supposed to be up there.

We have reversed a number of those security tweaks and the site seems to be behaving a bit better. We're continuing to work on this with some folks from Cornell IT, but if you have issues with accessing or using the site, please don't hesitate to let us know. You can contact me or Brittany (bg393@cornell.edu) and we'll see what we can do to help.

There are plans to develop a new Classifieds site which are getting underway now, but any new system likely won't be in place for several months. We will do our best to keep this site working as smoothly as we can. We know that this is a valuable service for many growers and wineries around the state, especially here in the Finger Lakes, and that we're entering the period when it gets used the most each year. We know it's frustrating when it's not working right, and we appreciate your patience if there are issues. We'll try to address them as quickly as we can.

IPM

I continue to be impressed with the low amount of foliar disease symptoms that I see in vineyards this week. I think one of the contributing factors to this was the dry conditions that we had in May and June when initial infections get started, which would mean we had a lower inoculum level when the wet and humid stuff came along in July. We all know that DM in particular can rear its ugly head again in relatively short order, so we are not out of the woods by any means. But things look good at the moment, and that's something worth noting.

We are also past the point where berries develop their resistance to new fungal infections. The timeline varies between the different diseases, and in different cultivars depending on their genetics. In rough terms, the resistance timelines for each of our major fungal diseases looks like this (native cultivars might be on the early side of these, while *vinifera* cultivars will be a bit later):

- Powdery mildew: 4 weeks post-bloom
- Downy mildew: 4-5 weeks post-bloom
- Black Rot: 5-8 weeks post-bloom

Where's Phomopsis and botrytis? Botrytis can certainly infect berries throughout the season, as long as they have an entry point, and no grape (that I know of) has much in the way of genetic resistance to botrytis. Phomopsis infections are generally "finished" by the time of fruit set, so we rarely see direct fruit infections by Phomopsis. Instead, Phomopsis infections will enter the berries through the pedicel, after infecting the green shoot earlier in the season. By the way, you can often distinguish between Phomopsis and black rot infections by looking at where on the berry the infection is centered. If it's centered around the stem, it's likely Phomopsis. If it is centered elsewhere on the berry, it's very likely to be black rot.



Black rot infections on berries (left) and phomopsis infections infecting both berries and stems (right). Photos: Katie Gold (left) and Bruce Bordelon (right)

IPM (continued from pg. 2)

Spotted Lantern Fly Update

First off, we haven't had any new areas with egg masses found in the Finger Lakes this year, so that's good. Work has continued around the Ithaca area where the adults and egg masses were found last year, including removing trees where the original masses were located. What they are finding as these trees are removed is that egg masses were laid well above a height where they are visible to inspectors on the ground (20-30'+ up), and which explains why they are finding some nymphs in that same area this year. It sounds like there are not many, and there is a continuing effort to monitor for SLF nymphs in that area. Ag & Markets is hopeful about keeping that particular population from spreading right now.

The SLF story in New York is mostly near the city. During an update yesterday from Ag & Markets, we heard that SLF is now in all 5 boroughs of New York City, as well as a few nearby areas like Westchester and Sloatsburg. They aren't to the level of major infestations like in many parts of southeast Pennsylvania, but they are present (i.e., adults and egg masses found last year).



The challenge with SLF, of course, is that it is incredibly good at hitchhiking on many different vehicles and materials and establishing in new regions. That's how the population in Ithaca got there, and very likely how it will arrive closer to more of our vineyards in the near future. So now is the time to be educating vineyard and cellar workers, tasting room staff, and anybody else working in our local vineyards and wineries about how to identify both the nymph and adult stages of SLF, and who (whom?) to contact if a suspected SLF is found.

In both New York City and southeast PA, it sounds like the populations there are in the final nymph stage and starting to emerge as adults. This means that commercial vehicles or visitors to the Finger Lakes from these areas could potentially be bringing adult SLF up here on their vehicles. Commercial vehicles that travel through these areas are supposed to be inspected before they leave quarantined areas like these. If you have suppliers or shippers who are doing so, please ask them to be sure their vehicles are inspected before leaving. You can find more information about the quarantine requirements at <https://extension.psu.edu/how-you-can-comply-with-the-spotted-lanternfly-quarantine-regulations>.

We will be keeping up to date on new findings and information about SLF and will communicate them with the FLX industry as they become available. I have included the most recent version of Penn State's bulletin on SLF Management in Vineyards in this week's Update. Here are a few additional SLF resources to explore:

- [StopSLF.org](#) – great site that pulls together resources from several sources, including Penn State.
- [Penn State SLF Website](#) – Penn State has been leading the effort on research and outreach about SLF. Their website has great resources for both commercial operations and the public.
- [NYS IPM Program SLF Website](#) – Resources that are a little more NY State focused.
- [Insecticides approved for SLF in New York vineyards](#) – Last updated on November 17, 2020.

IPM (continued from pg. 3)

If you suspect you have found SLF:

- Take a photo of the suspected pest, if possible.
- Take down information about the location of the finding (GPS coordinates, street address, what it was found on like a building or a plant, etc.)
- Collect the specimen and place it in a plastic bag. Preserve either by freezing or dropping it into rubbing alcohol or hand sanitizer.
- Use the [Spotted Lanternfly Public Reporting site](#) to report your find.

Feel free to contact Hans if you have questions or need help reporting a possible SLF sighting.

GBM Model Results – July 21, 2021

Location	GDDs	Biofix Date	Pest Status	Management Recom-
Dresden	1251	5/30/2021	*	#
Lodi	1230	5/26/2021	*	#
Romulus	1180	6/1/2021	*	#
Hammondsport	1089	6/3/2021	*	#
South Bristol	1094	6/3/2021	*	#
Williamson	1068	6/5/2021	*	#

Pest Status

- * Second generation larvae are protected within berries and completing their development.

Management Recommendation

The most effective time for treatment of second generation grape berry moth is over. Prepare to scout all vineyard blocks for grape berry moth damage when DD accumulation reaches 1470-1620 DD. During scouting, determine if the number of damaged clusters from previous generation exceeds the treatment threshold of 15%. If above threshold, control measures should be applied starting at 1620 DD



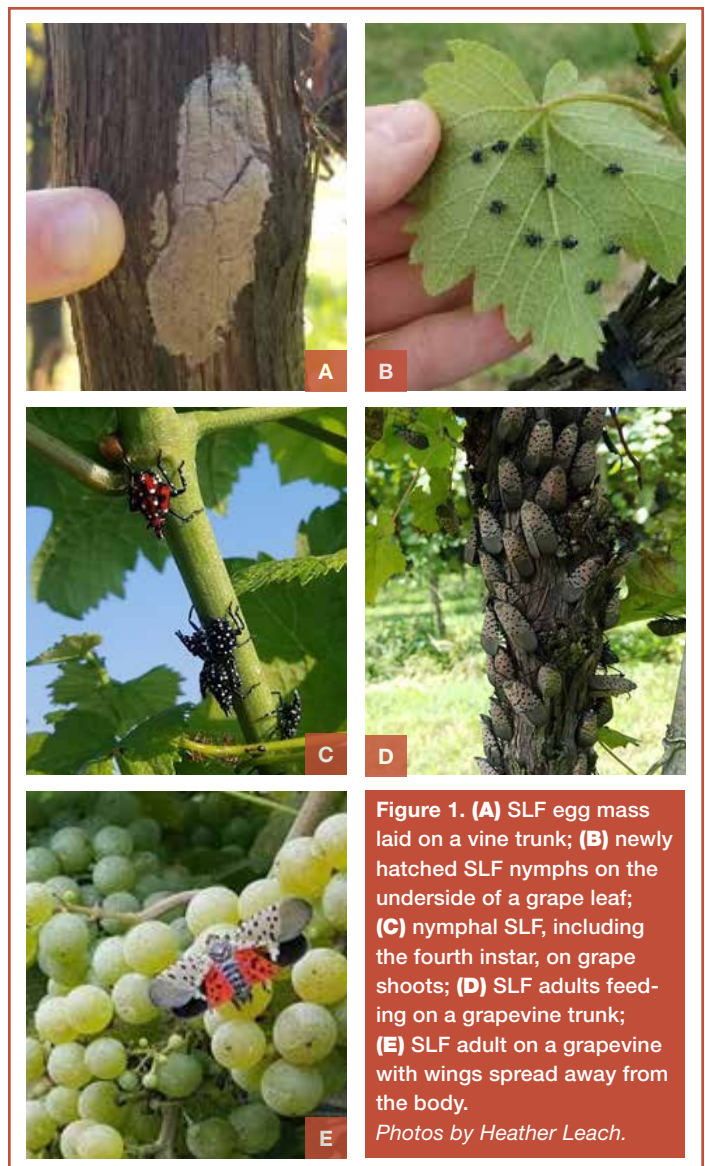
SPOTTED LANTERNFLY Management in Vineyards

E. Smyers

Spotted lanternfly (SLF), *Lycorma delicatula*, is an invasive planthopper, native to Asia, that was first detected in 2014 in southeastern Pennsylvania. As of April 2021, SLF is found in Pennsylvania, New Jersey, Virginia, West Virginia, Maryland, Connecticut, Delaware, New York, and Ohio. Detections of SLF have been reported in Maine, Massachusetts, Michigan, North Carolina, California, and Oregon; however, populations are not yet known in these states. SLF feeds on many plants, including economically important crops like grapevines, cucumber, hardwoods, and ornamentals. Significant damage has been reported from SLF feeding on grapevines, including increased susceptibility to winter injury, reduced starch concentration in vine roots, reduced yield in the subsequent year, and potential death of vines. This guide will update you on our current knowledge and best management practices for this insect in vineyards.

Life Cycle and Identification

Spotted lanternfly is not actually a fly, but a planthopper. There is one generation of SLF per year. The eggs are laid in the fall (September to November) and hatch in the spring (late April to June). Egg masses are laid on smooth surfaces (trees, outdoor equipment, vines, posts, etc.) and protected with a mudlike covering. Egg masses usually contain around 35–40 eggs each (Figure 1A). Females can lay at least two egg masses. After hatching and before reaching adulthood, SLF goes through four immature (nymph) stages. Nymphs are small ($\frac{1}{8}$ to $\frac{1}{2}$ inch) and can be hard to find (Figure 1B). The first three stages are all black with white spots, and the last is red with white dots and black stripes (Figure 1C). All nymphs are highly mobile and are strong jumpers. SLF adults emerge in July and are active until the first hard frost. This is the most obvious



and easily detectable stage because they are large (~1 inch) and mobile. Adults have black bodies with brightly colored hindwings. Only the adults can fly, and this is most commonly observed in the afternoon on warm and sunny days. SLF forewings are gray with black spots; the tips of the wings are black with gray veins; and their hindwings are red, black, and white. Because SLF adults walk more than fly, their wings usually remain closed (Figure 1D). Splayed wings can often be a sign of pesticide poisoning (Figure 1E).

Feeding Damage

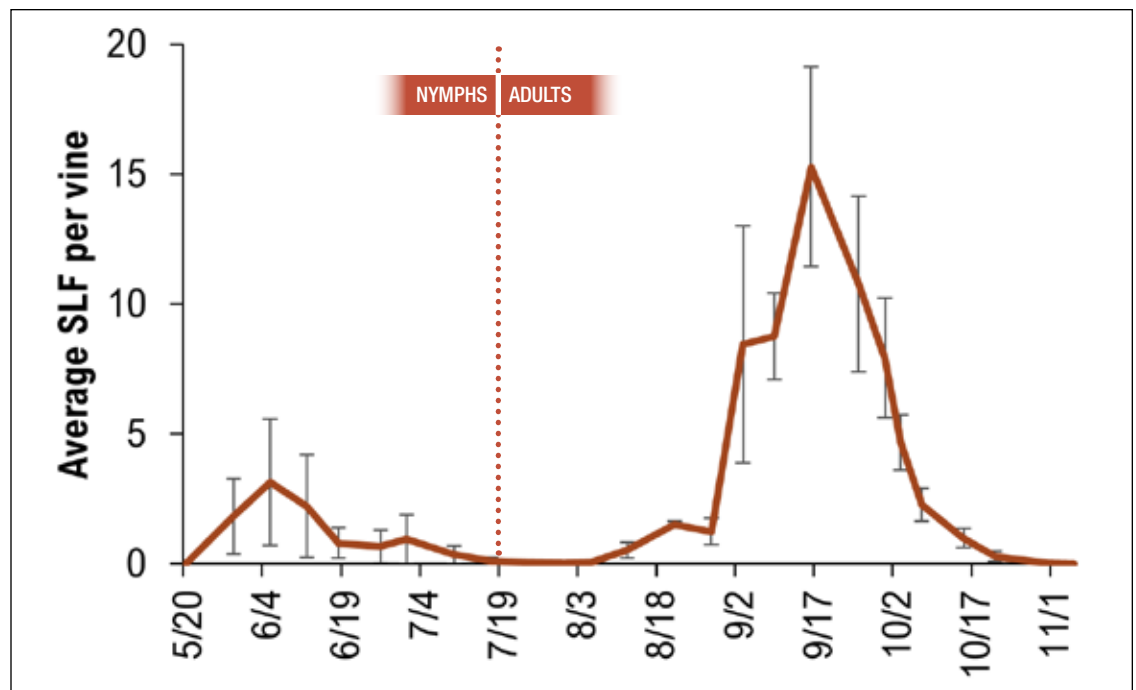
SLF feed on plant phloem tissue (sap) using a piercing-sucking mouthpart. Current research suggests that they prefer plants with significant turgor pressure, which could help explain why they favor grapevines. SLF utilize the nutrients provided by the plant and also rely on bacteria in their guts to help digest sap. When SLF feed in high numbers on grapevines, photosynthesis and sap flow in the plant is reduced. Heavy SLF feeding can also decrease the amount of carbohydrates (i.e., starch) and nitrogen stored in root tissues in the fall, which might compromise vine health and growth in the following year. Reductions in macro- and micronutrient concentrations in leaf tissues were also reported by the end of the season following heavy SLF feeding. Research is still in progress to establish action thresholds for SLF, though this will likely be dependent on age, variety, location, and baseline health of the vine.

As SLF feed, they ingest large quantities of sap, filtering the needed nitrogen and proteins and excreting excess levels of sugars and water as waste products (much like aphids, scales, and

other sucking insects). This excrement, called honeydew, accumulates around areas where SLF are feeding. On sunny days, you may be able to see honeydew falling from trees. Honeydew can be attractive to ants, wasps, bees, and other sugar-loving insects. As the honeydew builds up, it is often colonized by sooty mold fungi. Sooty mold doesn't directly harm plants or the surfaces it grows on, but it does act as a barrier on the leaf to block photosynthesis. Under high numbers of SLF, understory plants may die back because of sooty mold buildup. On grapevines, the trunk, cordons, and leaves may begin to turn black with sooty mold. Sooty mold can only persist with the honeydew to feed on and will not infect the grapevine itself. There are currently no recommendations for removing sooty mold from grapevine trunks or cordons. Sooty mold is seldom recorded on the clusters and has not been reported as a problem for marketability or wine taint. We do not yet know if honeydew on clusters may increase rot infection.

Based on data from 2018 and 2019, increasing levels of SLF on *V. vinifera* vines has a significant correlation with reduced clusters per shoot the following spring. Our data suggest that SLF feeding may reduce the hardiness of the vine and potentially increase bud or vascular tissue (i.e., phloem and xylem) susceptibility to winter injury. As such, evidence of SLF damage to vines may only be present in colder winter conditions where the vines experience a higher likelihood of freezing damage. **If you had high levels of SLF feeding in the summer or fall, you should evaluate bud injury before pruning the vines;** moderate to high levels of bud injury require differing pruning strategies, such as increasing the number of buds retained to compensate for bud mortality or renewing trunks.

Figure 2. The average number of SLF per vine from 2018 to 2020 across eight different vineyards in Berks County, Pennsylvania.



Vineyard Phenology and Spatial Distribution

SLF are voracious feeders and can be extremely abundant as adults in vineyards. Adults start to appear in vineyards in August, but high populations are not typically observed until mid- to late September (Figure 2). For vineyards that are first experiencing SLF, this phenology is typically shifted later into the season—you may not see large numbers invade the vineyard until October. After one or two years, SLF typically invade vineyards earlier in the season (late August). More important, the majority of an SLF population within a vineyard is observed on the edge; on average, 54 percent of the SLF population is within the first 50 feet of the vineyard edge. Depending on the landscape surrounding the vineyard, the edge of the vineyard may account for even more SLF (upward of 80 percent of the population). Most SLF are observed feeding on the shoots, though later into the season more can be found on older wood (e.g., trunk and cordon). The majority of adult SLF observed in vineyards are female.

Egg masses are often found on the edge of the vineyard, but this is much less extreme than adults. Research suggests that SLF prefer to lay next to an existing egg mass, which means that the eggs are often found in clumped distribution (data provided by Lauren Briggs, Penn State). Most commonly, eggs are observed on the undersides of vines (thick cordons, below graft union, etc.), angled posts, and within nongalvanized metal posts.

Seasonal Host Phenology

SLF has a broad host range and has been recorded feeding on over 70 different plant species. Despite this wide host range,

some plants appear to be more favorable than others. Whether a plant is heavily fed on appears to be highly dependent on what is available in the nearby landscape, the health of the plant, the time of year, and how long SLF have been present in the area. Nymphs, in particular, seem to have an especially large host range, whereas adults seem to depend more on certain hosts. Table 1 provides the key plant hosts of SLF and the time at which they are most likely to be found on these hosts, and it may help you identify problem areas with SLF adjacent your vineyard. The plants shown do not represent a comprehensive list of all potential hosts of SLF, but rather the most likely transition of SLF through the season. As plants begin to go dormant for winter, they are less likely to serve as a host for SLF. The patterns in host use may change with varying weather conditions, by region, and from other factors. Tree-of-heaven is a strongly preferred host; however, it is not required for SLF development.

Monitoring

As mentioned above, SLF utilize a large range of plant hosts. We recommend you monitor your vineyard and the wood edge for SLF on a regular basis (at least weekly), especially when adults are found from August to November. In the early summer, SLF nymphs are small and can be difficult to see. Nymphs tend to feed on softer tissue (at the tops of trees and herbaceous plants) and are often found on the undersides of leaves. Adults will be present on the trunks of trees and can be seen flying and gliding around where they are feeding. If you have not yet detected SLF in your vineyard, scouting for and monitoring tree-of-heaven or other hosts listed in Table 1 is the best place to start. A comprehensive guide on identification and removal of tree-of-heaven can be found on the Penn State Extension website. If there are

Table 1. Key plant hosts of SLF and the times they can be found on these hosts.

Host	Nymphs			Adults		
	May	June	July	August	September	October
Rose						
Grape						
Tree-of-heaven						
Black walnut						
River birch						
Willow						
Sumac						
Sycamore						
Silver/red maple						

other highly desirable hosts nearby, we recommend you focus monitoring and potential treatment on those plants. Monitoring plants can be done using either visual checks or tree traps wrapped around the trees (see below for more information on trapping). Treating ornamental trees can be done with either systemic or contact insecticides, depending on the plant type, whether SLF is feeding on the plant (or just using it as a launch point), and how long SLF is likely to be there. Our guide for landscape professionals can help you decide which approach is best.

Biological Control

Currently, there are no known natural enemies of SLF that are thought to reduce populations in the United States. Some generalist predators (spiders, praying mantises, parasitoids, etc.) will attack and eat SLF. Additionally, two species of fungal pathogens have been identified attacking SLF in Pennsylvania. One species, *Beauveria bassiana*, has been the recent focus of research for SLF management. This pathogen is commercially available as a bio-pesticide and can be sprayed to kill insect pests. In 2020 we evaluated the use of *B. bassiana* in woodlots adjacent vineyards to reduce SLF populations. So far, these applications did not suggest control of SLF and we do not currently recommend *B. bassiana* for use in or around vineyards. Research is continuing to further optimize the use and formulations of *B. bassiana*. Researchers have also been exploring the native region of SLF to search for natural enemies to release in the United States, and these are currently undergoing evaluations in USDA quarantine facilities.

Cultural Control

Removal of Attractive Host Plants

If tree-of-heaven is found on or near the vineyard, it could be a source of SLF populations. However, we currently have no data on whether insecticide treatment or removal of tree-of-heaven will reduce populations of SLF. Some growers have had good luck with treating the tree-of-heaven with the systemic insecticide dinotefuran, and others have felt this offered little control (H. Leach, personal communication). Most likely, this is dependent on the size of the SLF population surrounding the vineyard and the presence of other attractive or suitable hosts. If removing tree-of-heaven, you must use herbicide. Failure to use effective herbicide on this tree will result in more tree-of-heaven being quickly produced from the roots and stumps. Be mindful of herbicide applications on tree-of-heaven, as grapevines are highly sensitive to herbicide drift.

Exclusion Netting

Over-the-row exclusion netting can be used to protect vines from SLF. Our research suggests that this netting can reduce SLF by up to 99.8 percent on the vines. Note that unlike over-the-row bird netting, this netting will need to be secured tightly on the sides and bottom to exclude SLF (Figure 3). In addition, to prevent entry of adult SLF, exclusion netting needs to be of a finer mesh than what is commonly used for bird netting. SLF may attempt to feed through the netting when the shoots



Figure 3. Exclusion netting (DrapeNet, Chazy, New York) used to protect vines from SLF. Note that this netting is tightly closed on the sides and bottom to prevent entry by SLF.



Figure 4. SLF egg masses laid on (A) peeling bark of a grapevine trunk, (B) the inside of metal posts, (C) wooden posts, and (D) vineyard trellis equipment. Photos by Heather Leach.

contact the netting on the top and sides, but this was seldom observed in our studies. While we did not observe difference in disease pressure from downy mildew or bunch rot, sugar content of the fruit was slightly lower (0.5° Brix on average), likely due to decreased light penetration to the canopy.

We are also currently researching the use of large wall structures as a barrier to SLF flight into the vineyard. This research is still in progress, but early data suggest this is a promising method for managing hotspot areas around the vineyard.

Using Traps

Placing circle traps around trees or banding trees with sticky tape can be useful monitoring tools for vineyards that have not yet detected SLF. However, use of traps is not a recommended control tactic around vineyards, as it is very unlikely to reduce the population. If using sticky bands, bycatch of nontarget insects (bees, butterflies, natural enemies, etc.), birds, and mammals (squirrels, bats, etc.) is likely. A wildlife barrier (e.g., window screening) should be built over the trap to prevent this bycatch. More details on trapping can be found on the Penn State Extension website.

Mechanical Destruction of Eggs

Scraping SLF egg masses and placing them permanently in an alcohol solution (e.g., rubbing alcohol, hand sanitizer) and physical destruction of eggs (smashing) are other approaches to kill SLF. Destruction of eggs might help reduce nymph populations in the spring, but it may not reduce or prevent SLF from infesting a vineyard, especially during the adult stage. It is important to remember that SLF lay their egg masses on many surfaces, including posts, trees, outdoor equipment, and furniture. In vineyards, they are found most commonly underneath cordons, on the vines, and on metal and wooden posts (Figure 4). In addition, the majority of egg masses laid on trees are found above a reachable distance (8 feet). As a result, destruction of egg masses is unlikely to affect the bottom-line population in

the vineyard. However, some vineyards have reported consistent large numbers of egg masses within their nongalvanized metal posts. Burning these posts with a propane torch, without damaging the grapevine, is a quick way to destroy many egg masses. If you are scraping the egg mass, we recommend you use a hard, flat tool (e.g., putty knife, plastic card) and scrape the egg mass downward into a container. Once finished, submerge all egg masses in alcohol. They can also be smashed, but you need to be sure you are applying pressure to the entire egg mass, or you may miss some eggs. Eggs burst open when they are smashed.

Chemical Control

Egg Masses

Based on studies done from 2018 to 2020, some insecticides have ovicidal action. All studies were done on intact egg masses (with covering) in February to April. Of the nine insecticides evaluated, only Lorsban Advanced (chlorpyrifos) at the dormant rate offered 100 percent mortality to the egg mass. JMS Stylet Oil (paraffinic oil) at a 3–5 percent rate offered control ranging from 50 to 80 percent mortality, with the higher rates offering greater control (please consult the product label for rate guidance). Note that control mortality in these studies was up to 35 percent. For the same reasons described above, using ovicides in vineyards for control of SLF is often not recommended. First, egg masses can be found throughout the landscape, including the vineyard, the pole barn, the woodlot, and your neighbor's property. Second, the efficacy of ovicides is greatly dependent on coverage; good coverage on hidden egg masses (e.g., beneath peeling bark) may be difficult. Third, efficacy of available insecticides is better for nymphs than egg masses, making nymphs an easier and more successful target. That being said, the use of ovicides could be appropriate in your situation. If using Lorsban, note that it has specific label restrictions and is not currently labeled for SLF control. Lorsban Advanced can be applied prebloom for control of brown mar-

morated stink bug, cutworm, mealybug, and scale. Only one application of chlorpyrifos is allowed per season. Chlorpyrifos can be phytotoxic, so avoid applications after budbreak.

Nymphs

Limited information is available on the threat that the immature stages of SLF (nymphs) pose to grapevines. In general, low populations of nymphs are observed in vineyards and often occur when high numbers of eggs were deposited on the vines and posts in the fall. The nymphs are susceptible to a broad range of insecticides, including those that might be used for Japanese beetle. It is still important to monitor for populations of nymphs in your vineyard and apply treatment as needed. In some cases, spot treatments may only be needed for dense populations of nymphs (i.e., more than 10–50 per vine). Nymphs have not been observed reinfesting vineyards like adults do, so typically only one application of insecticide is necessary (if at all). Residual activity is not needed for the nymphs, so short-acting compounds (e.g., zeta-cypermethrin, malathion, carbaryl) are recommended.

Adults

Adults will most likely appear in your vineyard beginning in late August, but they could arrive as early as late July. Many of

the same insecticides that are effective at killing the nymphs are also good at controlling the adults: dinotefuran (Scorpion, Venom), imidacloprid (Admire Pro), beta-cyfluthrin (Baythroid), bifenthrin (Brigade, Bifenture), fenpropathrin (Danitol), thiamethoxam (Actara), carbaryl (Carbaryl, Sevin), and zeta-cypermethrin (Mustang Maxx). In general, we recommend using longer-residual products during the heaviest period of reinfestation, which tends to be in September. Be mindful of preharvest intervals (PHIs) on the labels and your harvest date. Pyrethroids have the longest residual activity evaluated to date. Closer to harvest, you may need to apply products with shorter PHIs, which generally don't have long residual activity for SLF. Therefore, these products may require repeated applications for adequate control (Table 2). Remember that SLF is primarily a pest on the edge of the vineyard—only treating the edge of the vineyard (the first 50 feet) can be just as effective as treating the entire vineyard. A modified sprayer or cannon sprayer could be used to only treat the edge of the vineyard for SLF, which would save time and reduce insecticide input. In 2020 we found a cannon sprayer (CIMA Cannon Spray Head, BDI Machinery, Macungie, Pa.) to be equally effective at killing SLF with a border sprayer, compared to spraying the entire vineyard with an over-the-row sprayer.

Table 2. Insecticides for SLF.

Active Ingredient	Trade Name(s) Tested	Class (IRAC Group)	Toxicity to Bees	Rate Per Acre	PHI (days)	REI (hours)	Target Life Stage Tested	Longevity of Product (days)*	Efficacy Rating
Bifenthrin	Brigade 2EC/ Bifenture EC**	Pyrethroid (3)	High	6.4 oz	30	12	Adults	7–14	Excellent
Beta-cyfluthrin	Baythroid	Pyrethroid (3)	High	3.2 oz	3	12	Adults	7–14	Excellent
Fenpropathrin	Danitol	Pyrethroid (3)	High	21.33 oz	21	24	Adults	21	Excellent
Zeta-cypermethrin	Mustang Maxx 0.8EC	Pyrethroid (3)	High	4 oz	1	12	Nymphs, adults	0 (knockdown only)	Excellent
Dinotefuran	Venom/ Scorpion	Neonicotinoid (4A)	High	3 oz/ 5 oz	1	12	Nymphs, adults	3–5	Excellent
Thiamethoxam	Actara	Neonicotinoid (4A)	High	3.5 oz	5	12	Nymphs, adults	3–5	Excellent
Carbaryl	Sevin XLR Plus/ Carbaryl 4L	Carbamate (1A)	High	2qt	7	12	Nymphs, adults	0 (knockdown only)	Good to excellent
Malathion	Malathion 8F	Organophosphate (1B)	High	1.88 pt	3	12	Nymphs, adults	0 (knockdown only)	Excellent
Chlorpyrifos	Lorsban Advanced	Organophosphate (1B)	High	1 qt	35	24	Eggs	—	Excellent
Paraffinic oil	JMS Stylet Oil	Mineral oil (n/a)	Low	3%	14	4	Eggs	—	Good

*Longevity of product can vary depending on weather conditions, coverage, etc. The longevity listed is what we determined in our field insecticide studies using four-year-old vines.

**Bifenture EC has a 24(c) label amendment for SLF in Pennsylvania to apply twice (once at preharvest and once at postharvest or twice at postharvest) at the maximum labeled rate. The PHI is 30 days.

Registrations and labels may change, and human error is always possible. You must read and follow the most current label before applying any pesticide. The trade names listed here are examples of products that have been tested on SLF; this list is not an endorsement of any product. Other products with the same active ingredient and rates will likely offer similar control as what is shown above.

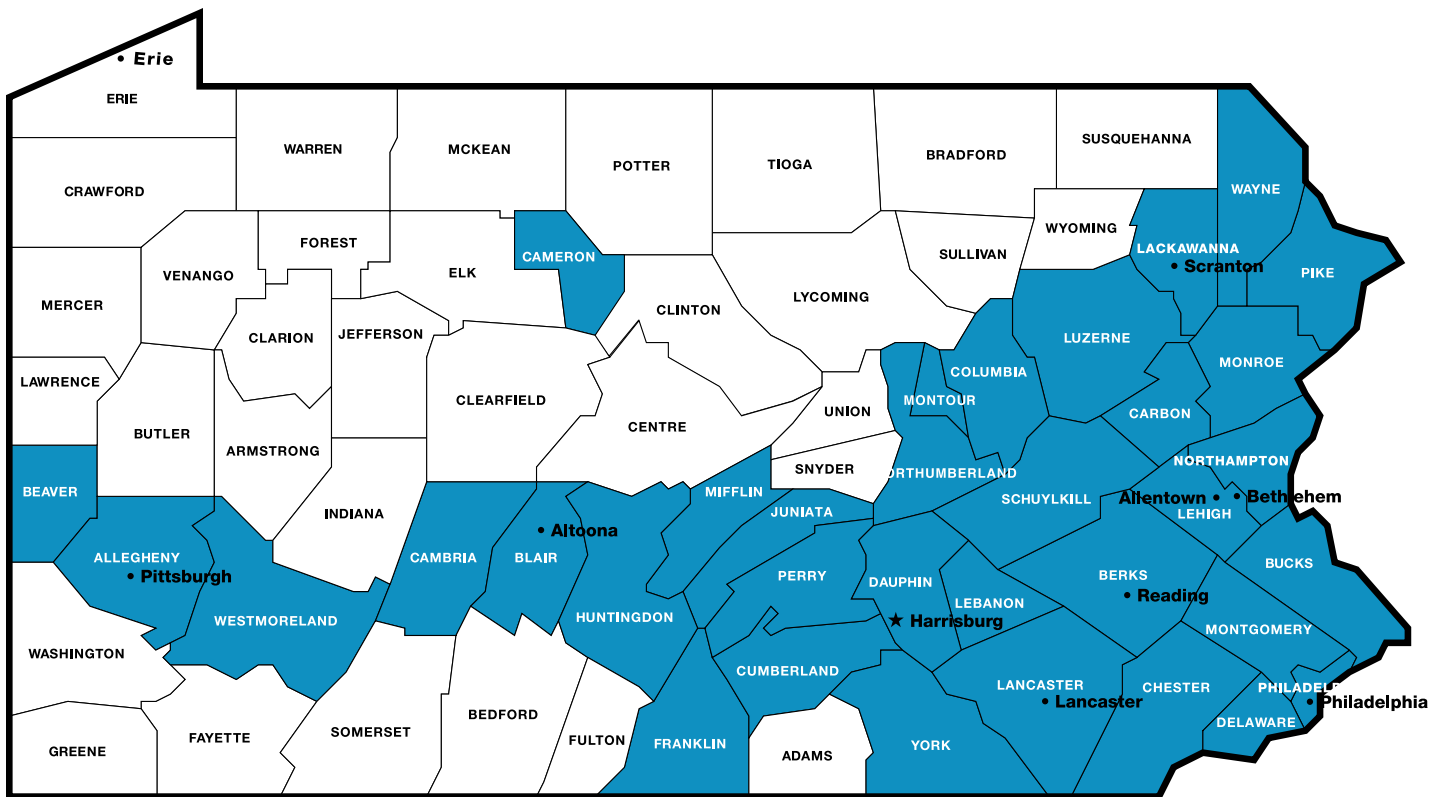


Figure 5. The blue counties indicate the current SLF quarantine zone within Pennsylvania. Last updated January 2021.

Before applying any insecticide, **you must read and follow the label** to be sure you are making a legal application with timings and rates, and have appropriate personal protection equipment (PPE), reentry intervals (REIs), preharvest intervals, and warnings for pollinator protection. Visit www.CDMS.net to check for the most up-to-date label information. While SLF have only one generation per year, you should rotate the use of different insecticide classes or modes of action for SLF throughout the season to reduce the likelihood of insecticide resistance. Be mindful that you are preventing insecticide resistance for not only SLF but also other common vineyard pests such as fruit flies. The use of pyrethroids and other broad-spectrum insecticides may flare up secondary pests such as mites, leafhoppers, or aphids.

Additional products have been tested against SLF and have not shown great efficacy. They are not listed in Table 2 and include the following active ingredients: indoxacarb (Avaunt), phosmet (Imidan), Assail (acetamiprid), and chlorantraniliprole (Altacor).

Postharvest Management

After mating and laying eggs in the fall, SLF have been observed to become less active and eventually die. Typically, no more SLF are observed in vineyards after the first week of November. After harvest, it is likely that you will continue to have SLF populations in your vineyard, and we recommend postharvest insecticide applications. In this case, you can use products with a longer residual for longer control and reduce the number of applications

you need. After egg masses have been laid (late November), scout your vineyard and surrounding wood edge for egg masses to identify potential hotspot areas for nymphs next year.

Building and Tasting Room Control

Many wineries that have outdoor tasting areas have reported nuisance problems from SLF and complaints from customers. Typically, this only occurs at problematic levels during the active flight period (mid-September). If you can identify a main source of the SLF population (e.g., a nearby tree), treating this source with insecticide could alleviate the flight activity. Because this flight period is relatively short, a long-lasting pyrethroid (e.g., bifenthrin or beta-cyfluthrin) could be used on the plants or structures where SLF are found crawling or flying. Keep in mind that you must use insecticides labeled for this purpose. Some wineries have also utilized exclusion netting or shade cloth as a way to keep SLF out of the outdoor tasting areas with good success. In general, it is a good practice to encourage customers to be aware of SLF and check their vehicles and belongings before they travel so that they do not bring SLF elsewhere.

Quarantine Regulations

If you conduct business within the SLF quarantine in Pennsylvania and move products, vehicles, or other conveyances within

or out of the quarantine (Figure 5), the Pennsylvania Department of Agriculture requires that you obtain an SLF permit. The permit training is free and can be taken online. The permit ensures you and all employees have been properly trained on the identification and biology of SLF, and your vehicles and shipments are inspected and found to be free of SLF before moving. SLF adults can be found crawling all over many surfaces, including harvest bins, tractors, trucks, etc., so you must be sure that all of these materials are free of SLF. Businesses receiving shipments of fruit or juice within the quarantine zone must also hold an SLF permit. If a business that needs an SLF permit is caught without one, fines may be issued. Specific questions about the permit can be directed to SLFPermit@PA.gov. Other states have quarantines and permit requirements for this pest, and there is reciprocity of these permits between states.

Summary

1. SLF may cause significant damage to grapevines, including increased susceptibility to winter injury, reduced carbohydrate and nitrogen levels in root tissues, and reduced yield. The degree of damage is likely dependent on the level of SLF infestation, overall health of the vine, winter conditions, and other stressors placed on the vine.
2. Adult SLF are the most problematic in vineyards and arrive from late August through November. Nymphs are typically not problematic and should only require one insecticide application, if any.

3. If you don't yet have SLF or only have low populations of SLF, monitor tree-of-heaven and other highly desirable hosts (e.g., wild grapevines, black walnut) surrounding your vineyard to find potential sources of SLF.
4. If SLF is present in large numbers (more than 10–20 per vine), consider applying insecticides or utilizing exclusion netting. Finding only a few SLF throughout the vineyard may not warrant a spray. Targeted insecticide sprays at the border of the vineyard (~50 feet into the vineyard) are effective at reducing SLF.
5. After applying insecticides, continue to monitor and spray as needed. SLF are susceptible to many insecticides, but they quickly reinvade your vineyard from the surrounding landscape, making them difficult to control.
6. If you had significant feeding from SLF in the summer or fall, check bud mortality and consider leaving more buds on the vine when pruning to avoid winter injury.
7. If you're conducting business in the Pennsylvania quarantine zone, you must get an SLF permit from the Pennsylvania Department of Agriculture.

We encourage you to stay up to date by checking our website, attending regular extension meetings, or contacting your local extension educator. Research on this important pest is ongoing, and information may change as we learn more about this insect. Be sure to check online for updated versions of this fact sheet. *Last updated by Heather Leach and Michela Centinari, April 2021.*

Prepared by Heather Leach, Michela Centinari, David Biddinger, and Greg Krawczyk.

extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

This publication is available in alternative media on request.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

Produced by Ag Communications and Marketing

© The Pennsylvania State University 2021

Code EE0226 Rev1M04/21mpc

Upcoming

Don't forget to check out the calendar on our website (<http://flgp.cce.cornell.edu/events.php>) for more information about these and other events relevant to the Finger Lakes grape industry.



FLGP In-Person Tailgate Meeting

Tuesday, August 3 4:30 – 6:00 PM

Kashong Glen Vineyards

1107 Earls Hill Road

Penn Yan, NY

Our next in-person Tailgate Meeting will be held on Tuesday, August 3. These meetings are primarily intended for those who are not able to or prefer not to participate in our virtual Tailgate meetings, but are open to anybody. The agenda for these meetings is very loose, so please come with your questions, observations, opinions about what's going on in the vineyard. The DEC has approved the meeting for 0.75 pesticide recertification credits (Categories 1a, 10, 22).

There is no limit on the number of people who can attend these outdoor meetings, and therefore we are not requiring any pre-registration for them. Those who are fully vaccinated for COVID-19 are not required to wear masks or remain 6' apart during the meeting. Those who are not vaccinated will need to wear a mask and keep physically distant from others.

DEC Webinars

The New York State DEC is hosting the following two virtual workshops later this month. They might be useful courses for those looking to become certified pesticide applicators. These courses are free (I'm pretty sure, at least).

How to Become a Pesticide Applicator

July 23, 2021 6:00 p.m.

A walk through the process of becoming a certified pesticide applicator. Whether you want to do landscaping, structural pest control, or agriculture, learn how to qualify for the exam and start your new career.

[Register now](#)

New York State Pesticide Use and Regulations

July 28, 2021 6:00 p.m.

DEC Staff will explain the differences between minimum risk, general, and restricted use pesticides, how to avoid common violations in the field, and how to become certified applicators and register a pest control business.

[Register now](#)

Upcoming Events (continued from page 5)



EnoCert Classes for 2021

The EnoCert program is offered by Cornell's Enology Extension Laboratory. It is intended for current winery employees who would like to expand their practical knowledge of winery operations, or for motivated amateurs. All courses will be offered in one or two-day mix and match modules. Our goal is to provide a recognizable standard of training for participants who earn EnoCertification.

For more information, visit <https://grapesandwine.cals.cornell.edu/extension/enocert/> or email Cortni Stahl at ckm53@cornell.edu.

ENOCERT 202 Certification Course: Tasting Room Sales Strategies

NEW Online format! Synchronous sessions approx. 8:30 am – 12:00 pm

August 2, 2021

Overview: Most consumers' first contact with the New York wine industry is in a tasting room, so understanding their interests, motivations, and educational needs is key to promoting the industry as a whole and increasing individual sales. In this course, participants will learn how to engage guests to create a fun and profitable tasting room experience.

ENOCERT 101 Certification Course: Basic Viticulture & Enology (Formerly New Grower/New Winery Workshop)

NEW Online format! Synchronous sessions approx. 8:30 am – 12:00 pm

August 3-4, 2021

Overview: This course will cover the basics of grape growing from the ground up. Through live interactive lectures, participants will understand how vineyard site, climate, and trellising systems impact grape production and quality. Participants will also expand their understanding of production steps for specific wine types. Upon completing this course, attendees will learn how different wine types (white, red, rosé, sparkling) are produced, and the key decisions that need to be made to influence wine style.

2021 GDD & Precipitation

FLX Teaching & Demonstration Vineyard – Dresden, NY					
Date	Hi Temp (F)	Lo Temp (F)	Rain (inches)	Daily GDDs	Total GDDs
7/14/21	82.9	68.2	0.24	25.6	1308.0
7/15/21	88.2	65.7	0.00	27.0	1334.9
7/16/21	77.7	68.4	0.00	23.1	1358.0
7/17/21	68.4	63.3	0.91	15.9	1373.8
7/18/21	76.0	62.5	0.04	19.3	1393.1
7/19/21	83.3	61.8	0.01	22.6	1415.6
7/20/21	87.8	67.1	0.00	27.5	1443.1
Weekly Total			1.20"	178.2	
Season Total			12.56"	1443.1	

GDDs as of July 20, 2020: 1396.4

Rainfall as of July 20, 2020: 9.78"



Seasonal Comparisons (at Geneva)

Growing Degree Days

	2021 GDD ¹	Long-term Avg GDD ²	Cumulative days ahead (+)/behind (-) ³
April	72.0	62.7	+2
May	256.6	254.6	+1
June	608.9	481.5	+7
July	402.1	646.4	+6
August		593.2	
September		358.7	
October		109.9	
TOTAL	1339.6	2507.1	

¹ Accumulated GDDs for each month.

² The long-term average (1973-2019) GDD accumulation for that month.

³ Numbers at the end of each month represent where this year's GDD accumulation stands relative to the long-term average. The most recent number represents the current status

Precipitation

	2021 Rain ⁴	Long-term Avg Rain ₅	Monthly deviation from avg ⁶
April	2.34"	2.83"	-0.49"
May	1.86"	3.12"	-1.26"
June	2.23"	3.55"	-1.32"
July	4.58"	3.43"	
August		3.20"	
September		3.49"	
October		3.40"	
TOTAL	11.01"	22.89"	

⁴ Monthly rainfall totals up to current date

⁵ Long-term average rainfall for the month (total)

⁶ Monthly deviation from average (calculated at the end of the month)

Additional Information

Become a fan of the [Finger Lakes Grape Program on Facebook](#), or follow us on [Twitter \(@cceflgp\)](#) as well as YouTube. Also check out our website at <http://flgp.cce.cornell.edu>.

Got some grapes to sell? Looking to buy some equipment or bulk wine? List your ad on the [NY Grape & Wine Classifieds website](#) today!

Finger Lakes Grape Program Advisory Committee

Eric Amberg- Grafted Grapevine Nursery
Bill Dalrymple- Dalrymple Farm
Matt Doyle- Doyle Vineyard Management
Eileen Farnan- Barrington Cellars
Chris Gerling- Cornell University Extension
Luke Haggerty- E & J Gallo
Tina Hazlitt- Sawmill Creek Vineyards
Cameron Hosmer- Hosmer Winery
T.J. Brahm – Randall Standish Vineyards

Harry Humphreys- Overlook Farms
Gregg McConnell- Farm Credit East
Herm Young– Young Sommer Winery
John Santos- Hazlitt 1852 Vineyards
Steve Sklenar– Sklenar Vineyard
Justine Vanden Heuvel- Cornell University
Peter Weis – Weis Vineyards
Kim Marconi – Three Brothers Wineries & Estates

Cornell University Cooperative Extension provides equal program and employment opportunities. CCE does not endorse or recommend any specific product or service. This program is solely intended to educate consumers about their choices. Contact CCE if you have any special needs such as visual, hearing or mobility impairments.

Cornell Cooperative Extension Finger Lakes Grape Program

Hans Walter-Peterson—Team Leader
Donald Caldwell—Viticulture Technician

The Finger Lakes Grape Program is a partnership between Cornell University and the Cornell Cooperative Extension Associations in Ontario, Seneca, Schuyler, Steuben, Wayne and Yates Counties.

flgp.cce.cornell.edu



"Cornell Cooperative Extension is an equal opportunity, affirmative action educator and employer"