

INVASIVE SPOTTED LANTERNFLY HAS VIRGINIA PLANT OWNERS ON HIGH ALERT

Experts say these tiny insects spell out big trouble for vineyards, orchards, and home gardens



In northern Virginia, vineyard owner Carl DiManno is concerned that his grapes may face a major threat in the coming year.

The invasive Spotted Lanternfly has been moving steadily down the east coast since 2014, leaving a trail of ruined crops and economic crises in its wake.

“Invasive species are always a threat. The Spotted Lanternfly seems to be the biggest one so far,” says DiManno, who operates 868 Estate Vineyards in Purcellville. “Last year, I saw infestations in Winchester [Virginia]. I fully expect to see them in the vineyard this year.”

These insects are native to Southeast Asia, and were first discovered in Pennsylvania in 2014. Experts believe they hitched a ride to the United States via a shipment of stone from China. They are considered to be a threat to grapes and peaches, and are therefore of particular concern to grape-growers like DiManno.

“They are a concern for two reasons: on one hand, they damage or kill grapevines. A damaged vine will not properly ripen fruit and the fruit may be unusable,” DiManno, who has a master’s degree in viticulture, explains. “On the other hand, once a Spotted Lanternfly pierces the vine,

sap and bug secretions attract other insects, including those that break open berries. On top of that, the sap supports mildew growth and traditional grape rots can get established.”

Tina Macintyre, the Virginia Department of Agriculture (VDAC’s State Survey Coordinator, believes the Spotted Lanternfly came to Virginia in 2018 through a shipment of wood from Pennsylvania, where the insect first appeared. In Pennsylvania, higher densities of Spotted Lanternflies have been linked to a decrease in fruit production and vine health, causing some vineyards to shut down entirely.

“The Spotted Lanternfly had been spreading in Pennsylvania. And so we chose it as one of our target tests and went back to locations where we knew wood from Pennsylvania was delivered, and found egg masses at one of the four sites,” says Macintyre.

Once the invasive insect was discovered in Virginia, researchers and horticulturalists began to see an

inexorable spread across the state. A quarantine was established by VDAC in June 2019 for Frederick County and the city of Winchester, and was extended to Clarke and Warren Counties in March 2021. This quarantine requires business owners in these locales to obtain permits and inspect all items that could transport the insect outside the quarantine areas.

Despite the pressure placed on those with plant-related businesses in these areas, Virginia has not yet seen the kind of economic devastation that Pennsylvania continues to experience as a result of the Spotted Lanternfly.

“We do know that the Spotted Lanternfly has been found within vineyards in Virginia. We’re going to be looking very, very closely at those crops this year to see what kind of impact it has on the vines. But there’s not much difference between Virginia grapes and Pennsylvania. So we’re keeping our fingers crossed, but we do know what happened in Pennsylvania,” says Theresa Dellinger, a diagnostician at Virginia



Tech's Insect ID Lab.

According to Macintyre, there are currently six vineyards in Virginia that have confirmed Spotted Lanternfly sightings, but since they were found only this fall, the full economic impact has not yet been realized. Beth Sastre-Flores, Commercial Horticulturist at the Loudoun County office of the Virginia Cooperative Extension, predicts that the Spotted Lanternfly's impacts in Virginia will outstrip its effects in Pennsylvania.

"Based on the amount of vineyards that we have, it's going to impact us really heavily because Pennsylvania, they don't have as many [vineyards]. But [Pennsylvania has] some vineyards and wineries that have already closed because of Spotted Lanternfly problems," says Sastre-Flores.

Given the dire implications of this invasive insect for one of northern Virginia's major economic channels, local and state agencies have been working to come up with a plan of action. VDAC has formed an extensive cooperative network which includes themselves, the Insect ID Department at Virginia Tech, the Virginia Department of Forestry, and local county agents.

Even so, Dellinger believes the Spotted Lanternfly poses a large enough threat to merit a more centralized response.

"We don't have a statewide Task Force for Spotted Lanternfly as of yet, but we're hoping to get one formed soon because we see a need for that," Dellinger says. "We definitely think that Spotted Lanternfly will be

expanding across the state and probably into other states this year. And we do see a need because it is new for so many people, and it's a big insect, and people have questions about it."

Most of the response so far has been focused on outreach, education, and identification. The Virginia Tech extension answers day-to-day questions from plant owners, and VDAC and local extensions handle reported sightings. However, these agencies have run up against some problems.

"We have found Spotted Lanternfly in about fifteen different jurisdictions now, and every time we go to expand the quarantine, we'll find something somewhere else and have to re-evaluate," says Macintyre. "We have the documentation together, but it also has to go through our Board of Agriculture and the Board of Commissioners, so it's really got a long way to go."

Sastre-Flores sees a different problem forming in her own county.

"Money is short. The money is almost gone doing tree of heaven treatment and insecticide applications in Winchester and Frederick County and Clark County," she says. "VDAC will have to apply for grants, or it will be up to the growers and homeowners to do things to control it."

The tree of heaven poses a new set of challenges, but also a potential mitigation method. An invasive species itself, it is the Spotted Lanternfly's preferred host for feeding and egg-laying. Its removal

could help control the Spotted Lanternfly population, but while vineyard owners like Carl have taken note of this step, it may be easier said than done.

“Tree of heaven is also an invasive species. And it was originally considered a desirable plant to have in your garden, but a lot of people planted it and then they realized it's really hard to get rid of,” says Macintyre. “If you mow it down, it seems like you get multiple stems back for every stem that you mow down. If you're going to get rid of tree of heaven, you really need to incorporate an herbicide treatment and stay on top of it.”

In addition, the Spotted Lanternfly's preference for the tree of heaven makes them undesirable targets for the few potential predators they may have in northern Virginia. The tree has alkaloids that are passed to new Spotted Lanternfly generations, causing them to taste terrible to predators.

“Right now, we're not seeing much in the way of biological control,” Macintyre says. “Here in the United States, we do know that reptiles and spiders and generalist predators will sometimes eat Spotted Lanternfly, but not to the extent that we expect it to have a large impact on controlling the population.”

Without any natural checks on this species, growers and officials have turned to insecticides as the only likely solution.

“We will have pesticides on hand for the first signs of SLF. We spray all summer long to prevent issues with



mildew. We try to keep pesticides to a minimum as they are not ideal for human health and they indiscriminately affect other, beneficial species,” says DiManno.

Sastre-Flores echoes the concern over the non-selective nature of insecticides, adding, “It's going to be a threat to the ecosystem.”

Dillinger and Sastre-Flores say that some native insects, certain bee and wasp species in particular, feed on Spotted Lanternfly eggs. These species are not populous in northern Virginia, and insecticides cause their numbers to dwindle further, but Sastre-Flores suggests that breeding and releasing more of them could reduce the need for harmful and costly spray applications. She also says that using fine mesh netting could be a way to protect vineyards without over-using insecticides. Whatever the action,

she hopes it will be undertaken quickly.

"I think it's going to be [in Loudoun County] soon, but you know, the problem is the numbers. So if we can control the population at the beginning, it will be easier later on," Sastre-Flores says.

As officials and plant owners scramble to find ways to mitigate the incoming threat, the Spotted Lanternfly is continuing to expand its range across the state.

"I would be very surprised if the quarantine was not expanded this year," says Dillinger.

Macintyre takes this view a step

further, saying, "Looking at the spread that we incurred this year, I would say we could be looking at a state-wide quarantine in the next three to four years."

She also notes that Spotted Lanternflies have been reported in counties bordering surrounding states, meaning that the invasive insect will likely begin to wreak havoc on orchards and vineyards across the U.S.

"I think the message that we're going to try to get out to the public is that Spotted Lanternflies are here to stay, and it will be a nuisance problem for property owners in the future," Macintyre says. "But there are things you can do."



For resources related to the Spotted Lanternfly, please visit the [Virginia Cooperative Extension](#).