A beauty that is a beast of a problem: the Spotted Lanternfly

There is no doubt that the Spotted Lanternfly (SLF) has a strikingly vibrant appearance that catches the eye, but don't admire it for too long as this insect is proving to be a problem overseas and has quickly become a significant emerging biosecurity threat to kiwifruit and many other horticultural industries.

Native to Asia, SLF invaded the USA in 2014 and has taken a foothold in the Mid-Atlantic states of Pennsylvania, Virginia, Delaware, Maryland, and New Jersey. It is considered a hitchhiker pest, thought to have first entered the country on imported paving stones from China.

While adult SLF can fly, the more worrisome movements are those of their egg masses. SLF can lay eggs on almost anything but prefer hard, smooth surfaces such as tree bark, shipping pallets, containers, and many other outdoor items. Egg cases can travel long distances on imported goods and are easily overlooked because they look like a smear of mud – they have a waxy layer that makes them hard to see and treat with insecticide.

WHY TRY AND STOP IT?

The SLF is an invasive pest with a healthy appetite for many horticultural crops, and it could be a significant nuisance to New Zealanders way of life and enjoyment of the outdoors.

It feeds on over 70 hosts and while it prefers Tree of Heaven (which is considered an invasive weed in New Zealand), it also has a strong preference for many economically important crops, including kiwifruit, grapes and pipfruit.

The adults and nymphs feed on sap, damaging the plant, and excrete large amounts of a sticky liquid, called honeydew. This honeydew promotes the growth of sooty mould which marks fruit, rendering it unsaleable to markets and attracts wasps and ants which can have impacts on many beneficial insects.

Our industry is already battling sooty mould problems (caused by established pests such as passion vine hopper and cicadas) with impacts reported to cost the kiwifruit industry $44 million annually. Observations from overseas suggest sooty mould damages from SLF could easily surpass this, and overall impacts may be more significant than Brown Marmorated Stink Bug (BMSB).

Growers aren't the only ones who will be impacted if SLF establishes here. Homeowners can be left with a sticky mess to regularly clean up on anything the SLF rests on while they are feeding, including patios, cars, and outdoor furniture.

SLF egg masses on kiwifruit.
Image credit: Gonzalo Avila, Plant & Food Research.

The open Spotted Lanternfly is identifiable by it's vibrant red hindwings and spotted forewings.
Image credit: Lawrence Barringer, Pennsylvania Department of Agriculture.

HOW ARE WE PREPARING?

While well-established readiness and research programmes exist for known invaders such as BMSB and fruit flies, the SLF is fairly new to us, and so is its readiness programme.

The Ministry for Primary Industries (MPI) has recently completed a Pest Risk Analysis for SLF which investigates in-depth all import pathways into New Zealand and their likelihood to harbour viable SLF life stages. This is an important piece of work as it ensures that those high-risk pathways are managed appropriately at our borders.

Because SLF is only a recent invader outside Asia, there is sparse English language reference to the damage it causes, however we know kiwifruit is a host through reports in Chinese language literature. Major impacts to other crops such as apples and grapes have been reported in invaded countries (USA and Korea), but not much is known about impacts to kiwifruit. KVH and Zespri have recently commissioned field research in China to help quantify the damage seen there and understand the SLF lifecycle in kiwifruit. This helps our preparedness by ensuring the timing and targeting of management techniques are correct.

We know SLF is a crafty hitchhiker that has continued its spread throughout the USA by travelling across state lines on inanimate goods like vehicles and machinery. To combat this, many states have set up quarantine zones which require preventative measures, such as machinery wash downs, to take place prior to any further movement. This is a simple and clear example of the importance of managing our own internal kiwifruit pathways to prevent spread of all pests and ultimately give us the best shot at preventing the establishment of new ones.

HOW CAN YOU HELP?

The SLF is notoriously great at evading sprays, returning to continue its damage when it is safe to do so. Control methods overseas heavily rely on growers and homeowners helping authorities by scraping egg masses from trees, posts, and outdoor furniture during winter, or applying a sticky band around host trees to manage the movement of the nymphs (young life stages). Support such as this from growers and the greater public is critical.

While we are fortunate enough to not have this pest in New Zealand yet, experience from the USA tells us that early detection is vital if we are to have the best attempt at a successful eradication. So we ask everyone to keep an eye out for any "mud like" smears of egg cases on any imported goods from Asia or the USA, or the vibrant red wings on the adult during the high-risk season each year between September and April. If you see anything catch it, take a photo of it, and report it to MPI on 0800 80 99 66.

SLF egg masses on tree bark.
Image credit: Anne Nielsen, Rutgers University.

SLF infestation on a backyard tree trunk in Pennsylvania, USA.
Image credit: Pennsylvania Department of Agriculture.