Kiwifruit focus on stink bug surveillance

Erin Lane and **Kerry O'Neil** - KVH

A new post harvest surveillance network is adding to our preparedness for one of the industry's most unwanted threats, the brown marmorated stink bug.

Photo 1. A 'beating' stick and sheet is used at vegetation sites near traps to detect stink bugs.

Photo 2. Beating' sheets are inspected for any stink bugs of concern.

The kiwifruit industry and KVH invest significant resources towards making sure we detect and appropriately respond to any detection of the brown marmorated stink bug.

This includes being part of the national brown marmorated stink bug council, where KVH sits alongside other affected industries and government, as well as kiwifruit specific readiness projects such as research funded by Zespri Innovation (a portfolio that spends $1million annually on biosecurity preparedness research).

In order to detect biosecurity threats, like stink bug, surveillance networks are essential, particularly around high-risk border entry points like ports and transitional facilities (where goods are stored and inspected before being cleared for release). These networks aid in early detection, which we know is integral at giving us the best chance of a successful eradication.

The Ministry for Primary Industries (MPI) oversees the national brown marmorated stink bug surveillance programme, which operates on an entry risk basis, associated with past detections and pathway risk, using lure traps and vegetation searches on a fortnightly basis during the high-risk season of September through to the end April each year. Most trapping efforts are concentrated in the main centres, primarily Auckland, Wellington and Christchurch.

KVH is a strong supporter of the national programme, understanding the importance of early detection in any eradication effort. It includes 160 traps at 80 sites (two traps at each site) and in addition, we fund 12 additional traps at six sites to supplement traps in the Bay of Plenty where 80 percent of the kiwifruit production occurs. These traps are checked by an external contractor, SPS Biota, using the same approach as the national programme.

Photo 3. Kerry O'Neil from KVH installing stink bug traps at post harvest sites.

Photo 4. A sticky card trap is used with a high-dose lure. designed to capture adult and nymphal unwanted stink bugs.

Since January 2023, KVH has been working with post harvest organisations on our own industry stink bug surveillance network. This involves traps at major kiwifruit packing facilities in the Mount Maunganui and Te Puke area, initially checked by KVH staff with a view to develop industry capability over the longer term.

This new project enhances nationwide efforts while raising awareness of stink bug across the kiwifruit industry and providing practical, tangible monitoring activities.

Importantly, it also builds capability within the industry for any stink bug response, whether that be specifically dedicated to kiwifruit or to assist in joint efforts involving other industries.

How the traps work

Stink bug surveillance works slightly different from other high-risk pest surveillance, such as fruit fly, in that we don't have a lure to directly attract the bugs to a single point. Instead, we use their aggregation pheromone to attract them to the area surrounding the trap.

Our new industry programme uses the same system as the national network, utilising the Trécé® stink bug dual lure, which has two components: a high-dose lure of stink bug pheromone and an aggregation component.

This lure is designed to attract both adult and nymphal stink bug and is currently considered to be the best available lure. A sticky card trap is used with each lure for the duration of trapping. Site inspections use a combination of trap inspections and vegetation searches using beating sheets to collect any stink bugs within 5-10m of the trap. It has been shown that using sticky traps alongside vegetation searching is more effective at detecting stink bug than a single method.

Surveillance will run for the duration of the stink bug high-risk season with final checks being undertaken in April 2023.

While these targeted surveillance and trapping programmes won't guarantee early detection of stink bug entering New Zealand, combined with public surveillance they will greatly increase our chances of detecting them early enough to be able to do something about them and greatly reduce impacts to our orchards.

Summary of industry stink bug surveillance

- KVH has established a Te Puke and Mount Maunganui surveillance run, each with four to five post harvest facilities hosting stink bug traps
- Nine sites are involved
- There are two traps per site (18 total), aiming for different areas and host trees at each site
- Traps are checked fortnightly during the high-risk season.