

Strawberry thrips project update: Host plants of *Intonsa*

Landcare Research has been working on a piece of thrips control this summer—discovering where *Intonsa* thrips (*Frankliniella intonsa*) build up their population before migrating to strawberries in later summer. The project is funded by SGNZ, with support from the Lighter Touch program and Barkers.

First, a quick review of lessons from the recent 4 year SFFF-funded project done by Plant and Food Research, which worked towards figuring out an effective biological control system for thrips in strawberries.

Thrips are sucking/rasping feeders. When they feed in strawberry flowers and under the calyx of developing fruit, they damage the fruit skin, causing it to bronze and be less elastic. This in turn results in shallow surface cracking as the fruit grows. (It's easy to confuse heat-induced bronzing with thrips-induced bronzing, see <https://berryworldnz.wordpress.com/2024/12/18/gold-silver-bronze/>)

The threshold for control used in California is 10 thrips/flower. Thrips under hot conditions with pollen to eat can build up to startling numbers, but it seems to take quite high numbers to cause major damage. Thrips control has been quite problematic in parts of the country (Auckland, Nelson, Bay of Plenty, Northland).

The SFFF team had found that introduced predators (*Neoseiulus cucumeris* mainly) were able to keep thrips numbers low until mid summer, after which the pest numbers rose. They also discovered that Western Flower Thrips (*Frankliniella occidentalis*, abbreviated as WFT) dominated in the spring, while in January the strawberry fields were dominated by *Intonsa* thrips. Both species are flower thrips and are only distinguishable by various microscopic hairs on their appendages. The SFFF team theorized that perhaps the reason for the loss of control was related to the species change, with predators being less effective on *Intonsa*.

In addition, any large pest migration is a real challenge to get on top of with predators. We wanted to know *where* *intonsa* thrips was building up its population in early summer, before moving to strawberries, so maybe the population could be tackled earlier at its source rather than waiting until they move into strawberries.

Landcare Research started the season by surveying the landscape up to 250 meters from a west Auckland strawberry field that has battled high thrips pressure for years, focusing on flowering plants as both species of thrips are flower-inhabiting thrips. The team surveyed common surrounding vegetation and weeds, and discovered that the most abundant host of western flower thrips in early summer was actually strawberries. In November, none of the surrounding plants had as many WFT as strawberries did. There were a few *Intonsa* thrips present in strawberries in November as well.

As December rolled around, WFT populations grew, both in the strawberries and in the nearby white clover. In late January, the intonsa population grew into high numbers in both strawberries and white clover, which persisted through February. By March, the intonsa population had dropped again, but WFT were still abundant.

Lessons to date:

Western Flower Thrips is still the main thrips species in strawberries in Auckland. It's just plain old WFT that we're not managing to control effectively with sprays or predators.

Nearby white clover could be serving as a "reservoir" for thrips, allowing them to quickly repopulate strawberry fields after control measures. We can use this knowledge to either include surrounding clover in our predator releases, or remove the clover and with it a big nearby thrips population.