

# NZGROWER<sup>®</sup>

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## WHAT'S THE PRICE OF RISK?

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# TESTING CROP PROTECTION WITH NATIVE GROUNDCOVERS

Glenys Christian

Photos by Glenys Christian

**Vegetable growers may soon be planting up more non-cropping areas with native groundcovers and shrubs in order to attract beneficial insects to their crops, but not pests.**

Olivia Prouse from Cropping Services Ltd is a consultant for Vegetables New Zealand working alongside Onions NZ on an A Lighter Touch project, carrying out demonstration work at the Pukekohe demonstration farm on Cronin Road. And she says that even in the short time since December last year when 300 metres of groundcovers started to be planted along drains around a four-hectare area, some promising results are being seen.

The end aim is to be able to provide growers with a list of suitable plants for different situations which they can use as a resource.

"It needs to be something which will help the whole growing system," she says.

"Then they can pick what works well for them. The overarching theme is biodiversity. You can't increase it in the crops, so you have to have it in floral mixes and groundcovers."

Vegetables NZ is looking to show best practice on a semi-commercial level on the demonstration farm which grows onions, broccoli, lettuce, pumpkins, sweet corn and barley in one-hectare areas in a set rotation.

"That's so growers can take up new tools at less risk to them," says Vegetables NZ's newly appointed research, development and extension manager, Daniel Sutton. "They're very reliant on crop protection, but housing biological control options on open fields is difficult. We hope this work will make these control strategies more sustainable."

Vegetables NZ's general manager, Antony Heywood, says the hope is that the project will be an icon for what the sector is planning to do with integrated pest management (IPM).

"It grounds us to a place and shows growers how these practices can be implemented," he says.

A crop scouting workshop held there earlier this year was very popular and attracted 44 people.



*Vegetables NZ's research, development and extension manager, Daniel Sutton with consultant Olivia Prouse*

Already small insects such as hover flies and soldier beetles are being attracted to some of the different species of groundcovers which have been flowering through the first three months of the year. And beneficial insect numbers are higher than pests where crops are growing closest to the groundcovers.

While the range of shrubs planted and staked in a 20m strip, which will grow into a hedgerow, haven't flowered yet, Olivia is hopeful they will also prove attractive to beneficial insects. Groundcovers have also been planted underneath them to suppress weeds.

The aim of the plantings is to provide a permanent source of shelter, nectar, alternative food and pollen (SNAP) to attract and retain beneficials close to crops, as has been shown to be successful in Australia and in Foundation for Arable Research (FAR) research work carried out in the South Island. So growers, by following recommendations from the trial, will be able to increase biodiversity so there are more beneficial insects, fewer pests and less need for them to use insecticides.



The groundcover plant *Leptinella dioica* attracts beneficial insects but not pests

As a base on which to establish the plants, wool mat, a biodegradable, locally-made product, was fixed to the ground with biopins to control weeds without using herbicides. It will break down completely over the next three years.

There are three different growth habits with the groundcovers; some spread over the wool mat, and some underneath, while others put up a single stem from which the rest of the plant grows. While some are already up to one metre across, they are unlikely to reach a height of more than 30 cm above the ground, so will present no problems for machinery turning at the end of a row.

“**The overarching theme is biodiversity. You can’t increase it in the crops, so you have to have it in floral mixes and groundcovers**”

As a result of flooding earlier this year, part of the lettuce crop was underwater on the demonstration area, leading to a disease outbreak.

“With the pumpkins a lot of soil washed down the wheel tracks and we thought we would lose the crop,” she says. “But they came through.”

Flooding also moved a large quantity of soil from crops on to the top of the wool matting, but it stayed firmly in place.

“We found that it suckered to the ground so there was less flood damage,” she says. “If we had used thin plastic, it probably would have been ripped out.”

To reduce run-off over the top of the wool mat, a bund could be created, with wool mat pinned down over the top and drainage channels cut through. Herbicide could be applied here to suppress weeds, removing competition

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Consultant Olivia Prouse working at the site of the A Lighter Touch project at the Pukekohe demonstration farm

with the groundcovers, but this design would mean a drastic reduction in the amount used. The ground would be more stable and the cost of planting groundcovers might be matched by reduced chemical use. "It's a mindset change."

Monitoring of beneficial insects and pests by Plant & Food Research staff will be carried out as part of 'A Lighter Touch' (ALT) work, aiming to meet consumer demands for food produced using sustainable pest management practices with a lighter touch on the environment. The end result should be a list of native plants which work most effectively with different crops, provide a year-round food source and are tolerant to herbicides. To refine recommendations in the future, it is hoped to extend the range of plants being trialed, as well as the area on which they are grown. And Vegetables NZ plans to hold regular grower activities at the farm to show best practice and approach for growers looking to put IPM in place on their properties.

Of the groundcover plants at the demonstration site, *Leptinella dioica* and *Muehlenbeckia axillaris* so far seem to be best at attracting small insects. The two shrubs out of the range planted which are showing the most promise in flowering first are *Pomaderris kumeraho*, also known as golden tainui, and *Olearia cheesemanii*, or tree daisy.

But on the negative side, one of the groundcovers, *Selliera radicans* or remuremu, died during the January rains, as well as a couple of the shrubs also in a wetter area of the plot.

"We will be able to advise growers not to plant these species in areas unsuited to them," says Olivia Prouse. ●



*Pomaderris kumeraho*, also known as golden tainui, and *Olearia cheesemanii*, or tree daisy

## MOST PROMISING CANDIDATES

It's early days yet, but the plants below show the most promise of attracting beneficial insects.

### Groundcover

- *Leptinella dioica*
- *Muehlenbeckia axillaris*

### Shrubs

- *Pomaderris kumeraho*, also known as golden tainui
- *Olearia cheesemanii*, or tree daisy.

