



**SoilWealth | ICP**  
nurturing crops · protecting crops



# Aotearoa – New Zealand Study Tour: Recap and Reflections

25 August – 31 August 2024

Dr Doris Blaesing (RMCG) & Sophia Thach (AHR)



# Special Acknowledgement

The SWICP team would like to especially thank Daniel Sutton, Research, Development & Extension Manager, Vegetables NZ and the wider Vegetables NZ team for their generosity, time and willingness to host Australian vegetable growers and advisors.

## About Vegetables NZ

- Vegetables NZ represents the interests of growers of all fresh vegetable crops (other than potatoes, onions, tomatoes, asparagus, and buttercup squash)
- Vegetables NZ represent approximately 760 growers who produce more than 55 crops

For more information visit: [freshvegetables.co.nz](https://freshvegetables.co.nz)



# Special Acknowledgements

The SWICP team would also like to thank Bryan Hart, Katherine Martin ([AS Wilcox & Sons](#)), Miriam Hall, Dr Kar Mun Chooi ([Plant & Food Research NZ](#)), Greg Pringle ([Syngenta](#)) Stuart Davis, Allan Marques ([LeaderBrand](#)) and Luke Reeves ([Greengrower](#)) for their valuable time and sharing insights into their businesses and projects to the SWICP study tour group.



# Study Tour Purpose

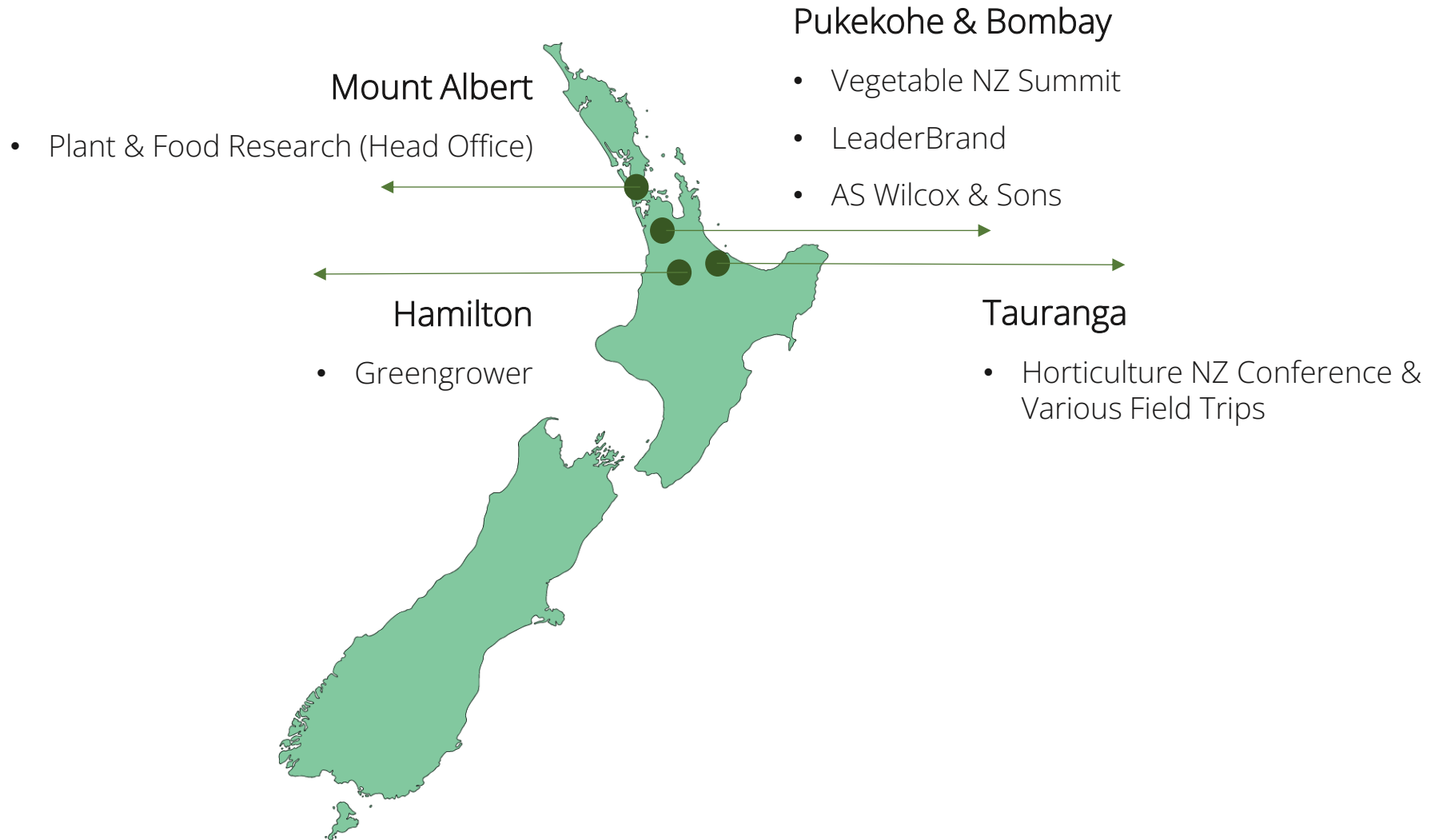
The purpose of the international study tour group for growers and advisors to Aotearoa - New Zealand was to:

- Attend the 2024 New Zealand Horticulture Conference
- Visit vegetable production businesses and research facilities
- Learn from international partners and strengthen global relationships
- Avoid repeating research and initiatives already completed internationally

It was particularly important to continue to strengthen links and foster channels for the exchange of information with international growers, research and commercial organisations.



# Location & Field Visits



# Study Tour Group

## Attendees:

- Andrew Johanson, Mulgowie Farming Company
- Annie Rea, Simplot
- Prakash Adihari, Kalyx
- Julie Finnigan, Muirs
- Sam Hood, Rugby Farming Group

## Project team:

- Dr Doris Blaesing, RMCG
- Sophia Thach, AHR



*L-R: Sam Hood, Prakash Adihari, Andrew Johanson, Julie Finnigan, Doris Blaesing, Annie Rea and Sophia Thach at the Horticulture NZ Conference*



# Field Visits



SoilWealth | ICP

nurturing crops · protecting crops

# Vegetables NZ Summit (Day 1)

## Recap:

Received an overview of the NZ vegetable industry including vegetable production, key market sectors, growing regions, and challenges. In addition, learnt about their combating fungicide resistance and [‘A Lighter Touch’](#) projects.

Toured the Vegetables NZ demonstration farm which featured:

- Moveable pods’ insectaries with mixed plant species
- Permanent border plantings to provide food and shelter for beneficial insects, installed with a woollen weed mat

## Reflections & Observations:

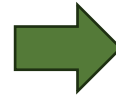
- Resilience: The ability of NZ vegetable growers to adapt and recover post-Cyclone Gabrielle by adopting sustainable practices such as cover cropping was inspiring
- Data-driven: Veg NZ’s emphasises data capture for management post extreme weather events, biosecurity and resistance management
- A Lighter Touch project is an exceptional example of a holistic approach to crop protection
- Insights into biosecurity, resistance, ongoing research, and collaboration were valuable







*The devastating impact of Cyclone Gabrielle on soil*



*Due to crop management practices such as cover cropping resulted in kind season with good rainfall until January and then a dry harvest*



*Stuart Davis (LeaderBrand) presenting the 'A Lighter Touch' project. The goal is to deliver crop protection that is gentler on the environment, shifting from ag chemicals to an agroecological approach*



*A visit to Vegetables NZ Pukekohe demonstration farm that is focused on increasing biodiversity, including planting species that attract beneficial insects and trialing woollen weed mats*



*Moveable pod insectaries with mixed plant species at the demonstration farm. The purpose of the pods is to provide nectar sources to encourage beneficials and able to move from crop to crop as required*

# AS Wilcox & Sons (Day 1)

A family-owned, 4th generation, vegetable growing business with a strong focus on sustainable practices and adopting innovation.

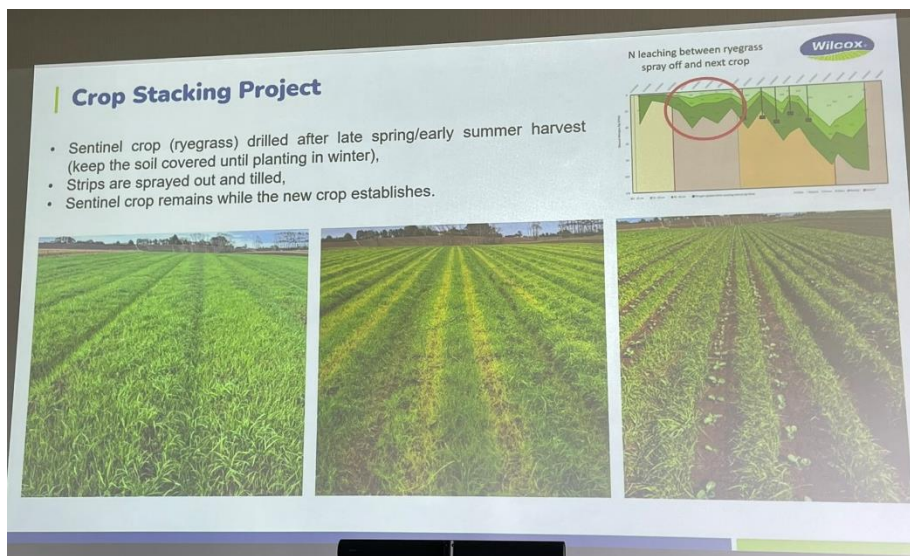
## Recap:

- Received an overview of the business and crops produced (potatoes, onions and carrots)
- Overview of sustainability practices and projects including:
  - Strong focus on IPM including planting border crops to attract beneficial insects
  - Producing compost and compost pellets
  - Use of biological products
  - 'Crop-stacking' (planting into a terminated cover crop)
  - Soil health dashboard
- Visited their Bombay site where they are trialling compost with biological products and IPM practices (planting strips to attract beneficials)

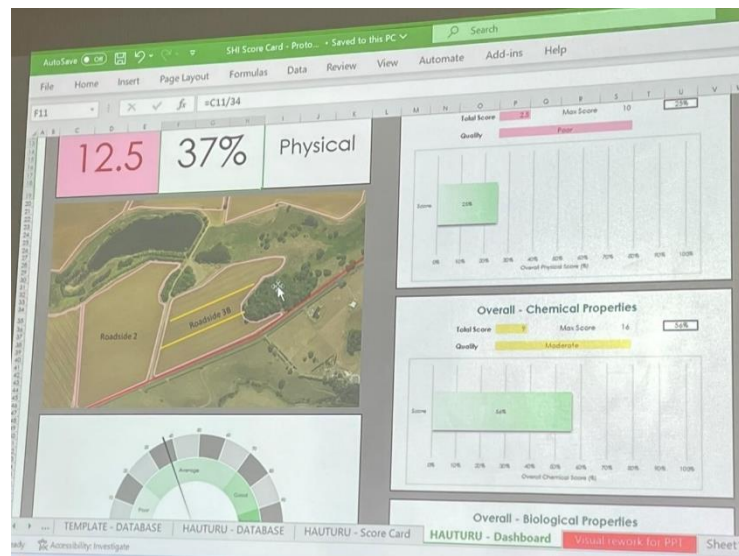
## Reflections & Observations:

- Strong sustainability approach: The use of IPM strips and compost alongside biological products to enhance soil health and promoting beneficial organisms
- Measuring soil health: The development of a clear soil health indicator dashboard showcased their proactive approach to soil health management
- Government support: Underscored the importance of external support in trialling and adopting sustainable practices
- Enthusiasm and willingness: The commitment to trialling sustainable practices, learning and implementing changes was evident

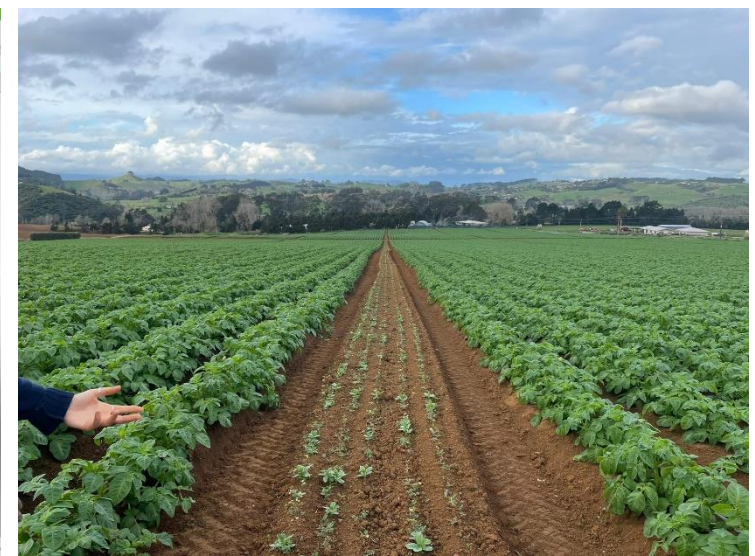




Overview of the crop stacking project



Overview of the soil health indicator dashboard



Border strips to attract beneficials in between potato paddocks



Trial of a biological product and compost on potato crops



Inspecting the soil under compost and biological product treatment



Healthy soils from trial

# Plant & Food Research (Day 2)

## Recap:

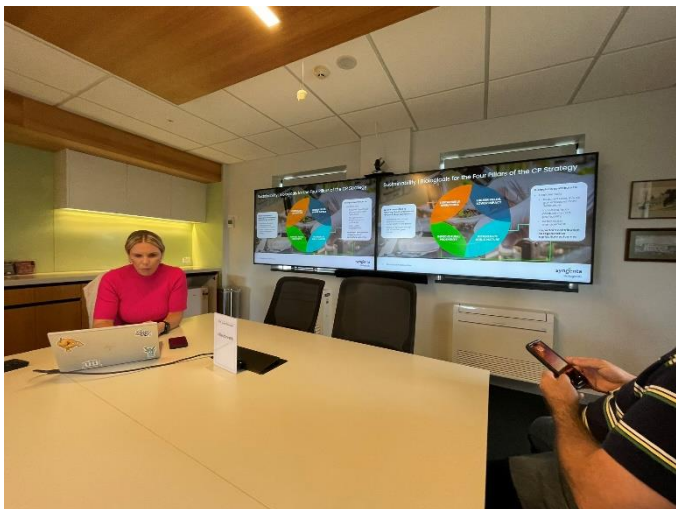
- Received an overview of Plant & Food Research
- Received an overview of biological products in Australia and NZ with Syngenta
- Provided with a brief introduction to an orchard digital twin project and digital tools for virus detection
- A site tour included:
  - Genetics and breeding glasshouse
  - Microscopy facility to see Clara - a scanning electron microscope (SEM) designed for advanced imaging and analysis

A NZ government-owned Crown Research Institute that provides much of the research and scientific knowledge to the horticultural, arable, seafood, and food and beverage industries.

## Reflections & Observations:

- The comprehensive overview provided valuable insights into the extensive research into biologicals, climate resilience, smart food systems, and breeding in NZ
- Impressed by the advanced research facilities, including the microscopy lab, particularly the new Clara, a scanning electron microscope (SEM) designed for detailed observation of micro and nanoscale structures

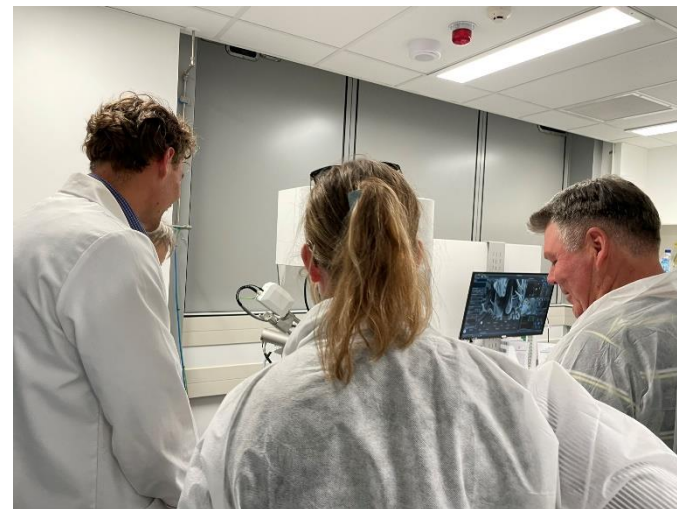




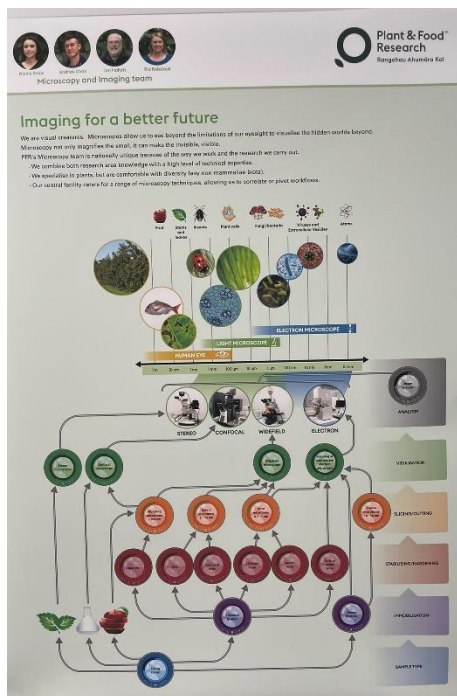
Plant and Food Research overview with Miriam Hall (Plant & Food Research)



Plant breeding facility



SWICP tour group looking at Clara – the new scanning electron microscope



Overview of Clara



Andrew (Plant & Food Research) explaining the use of Clara



SWICP study tour group with Daniel Sutton (Vegetables NZ) and Miriam Hall (Plant & Food Research)

# LeaderBrand (Day 2)

## Recap:

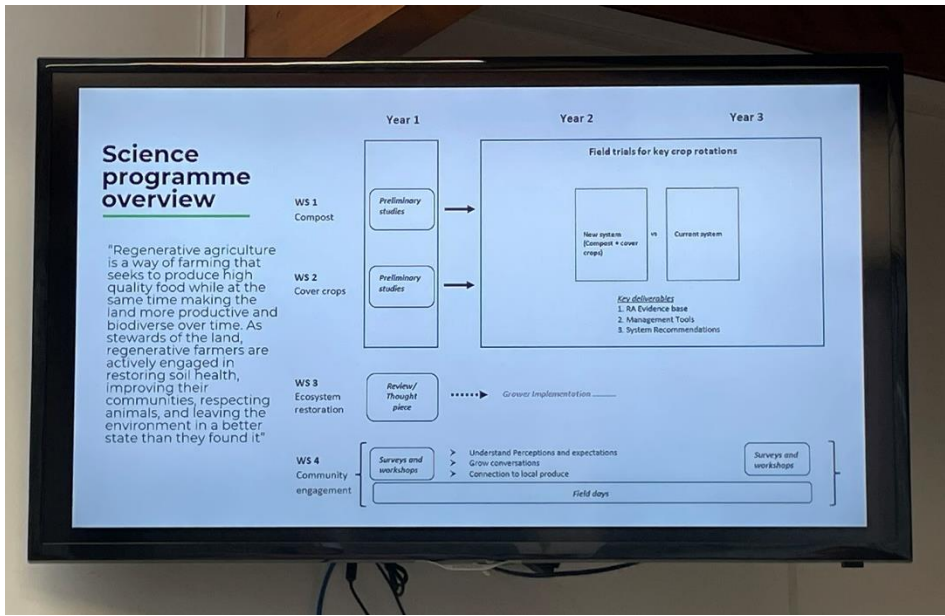
- Overview of LeaderBrand
- Learnt about their Regenerative Farming project, a joint project with Woolworths, Plant & Food Research, and MPI, looking at cover crops, compost, biodiversity, and enhancing the community (people)
- Due to rain, site visit was to the packing shed instead of the paddock

A large family owned and operated farming business established in 1975. Today, they're one of New Zealand's most progressive horticultural businesses.

## Reflections & Observations:

- Commitment to regenerative agriculture: The focus on research in the regenerative agriculture 3-year project was impressive and highlighted a strong commitment to sustainable practices and learning
- Community engagement: The emphasis on community and wetland restoration showcased the importance of involving broader audiences in agricultural systems, fostering awareness and education about farming practices





Overview of regenerative agriculture project

SWICP tour group in the packing shed

Vacuum cooling system



SWICP team with Stuart Davis (LeaderBrand)



Lettuce packaging



Lettuce packaging line

# SWICP Overview (Day 3)

## Recap:

SWICP provided an overview of the project to approximately 40 NZ growers and industry representatives. There was strong interest in the SWICP project, with many questions about cover crops and the economic analysis of soil health results. Julie and Andrew discussed their involvement in the project and shared their positive experiences.

The event offered an excellent opportunity to network with NZ growers.



*Doris and Sophia presenting the SWICP project and Julie discussing her involvement with project as well answering questions about biofumigation*





# Greengrower (Day 3)

## Recap:

Key highlights from this field visit include:

- The entire process from seed to harvest to packing is done in the facility
- Seed is grown in soil before being transplanted into a hydroponic system
- Fully controlled environment
- It takes leafy greens just 28 days to grow indoors compared to 60 days in the field
- 1 ha of leafy greens grown in this system = 5 ha of leafy grown in the field
- 95% less water used
- Two more growing rooms currently under construction



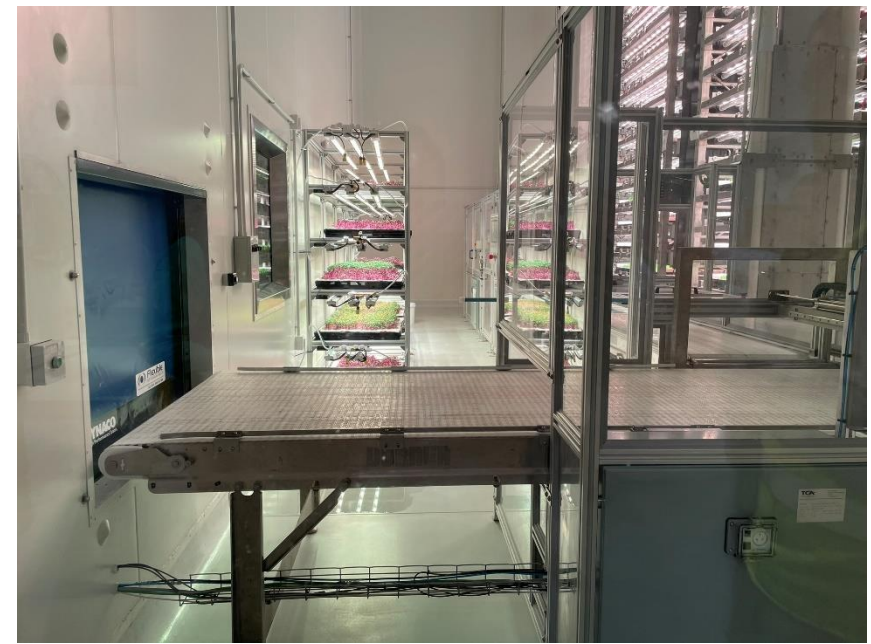
A large indoor vertical farming operation, growing vegetables more sustainably with less water, less electricity, and a focus on renewable energy sources.

## Reflections & Observations:

- Scale and efficiency: Large vertical farm and due to demand, two more growing rooms are being built. Producing a high volume of leafy greens all under one roof
- High technology system: The automation and high-tech systems in action was fascinating. The operational efficiency demonstrated the potential of vertical farming. However, it uses a lot of power
- Addresses food system challenges: The technology has significant potential to contribute to solutions for climate change, sustainability, and food security challenges we face today
- Plans are to set up vertical farms in Australia where fresh leafy green production is challenging



*Seedlings are being transplanted from soil into trays for growth in a hydroponic system*



*One transplanted, tray are moved to the fully automated growing room*



*Growing room with 13 levels*



*Growing room*



*Packaged greens with Greengrower branding*



*Packaged greens with supermarket branding*

# Horticulture NZ Conference (Day 4 & 5)

## Recap:

Topics covered include:

- High level overview of sustainability, climate, food and health from various speakers followed by a Q&A
- Plenty of discussion on regulations and policy
- Focus on Recognised Seasonal Employer (RSE) scheme and most of the trade show

The conference also included a range of field trips (Blue Lab, MPAC, Ngāi Tukairangi, Port of Tauranga) to choose from. The study group chose their field trip based on their interest.

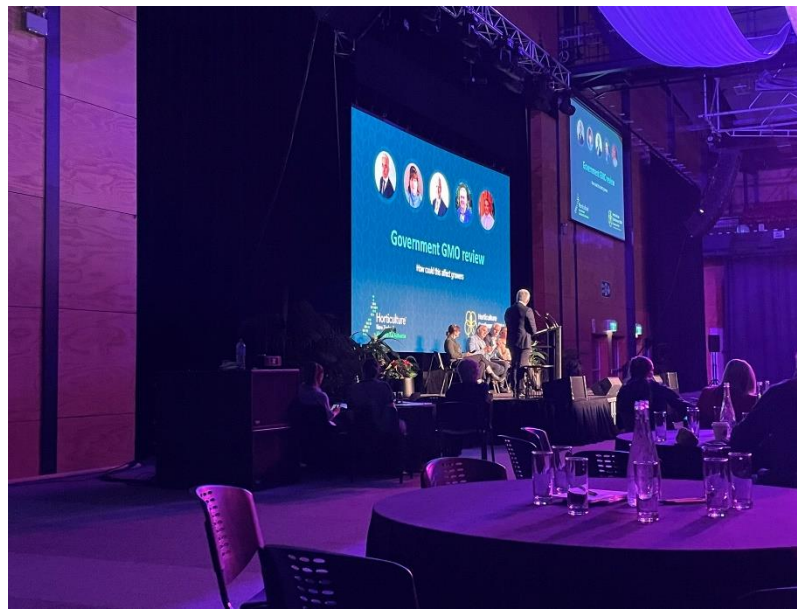
## Reflections & Observations:

- Conference relevance: Participants felt the conference was not particularly relatable, with topics such as policies and water storage. Despite some disconnect, attendees consistently found useful takeaways, especially from presentations like the one on artificial intelligence.
- Trade show relevance: Strong emphasis on RSE initiatives. Notable innovations included Hill Labs' \$20 PCR worm tests and the potential of LandKind and Sunforest technologies for high-value crops like cherries in Tasmania
- Networking opportunities: The gala dinner provided excellent networking opportunities, fostering connections among attendees
- Field visits: Those who attended Blue Lab were impressed with their range and quality of technology equipment. Others who attended the Ngāi Tukairangi field trip showcased the integration of culture and horticultural production left a lasting impression





*Horticulture NZ Conference registration*



*Horticulture NZ Conference GMO panel discussion*



*Horticulture NZ Conference trade show*



*Field visit to Ngāi Tukairangi Marae (meeting grounds) where guests were welcomed with traditional song and ceremony*



*Doris, Sophia and Prakash at the field visit to Ngāi Tukairangi kiwi orchard*



*Discussions and reflections continued throughout the trip*

# What are the lessons and key takeaways for the SWICP project?



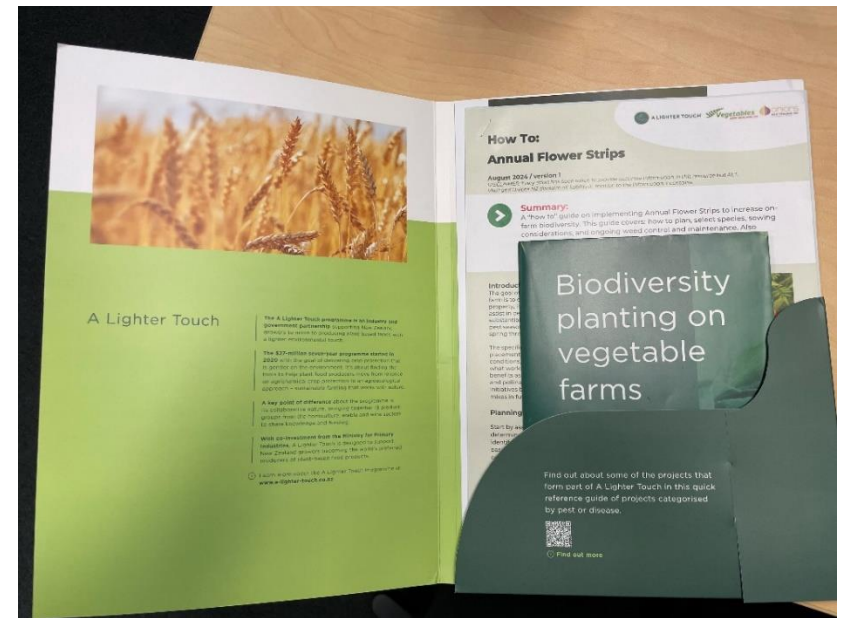
**Longer, practical and hands-on workshop:** Vegetables NZ organised a series of hands-on IPM workshops focused on (1) lettuce and (2) broccoli cultivation from planting to harvest. These workshops aimed to demonstrate IPM principles in a managed environment, empowering growers and crop advisors to confidently implement these practices on their farms.

**Grower needs:** Vegetables NZ conducted a research roadshow led by trusted persons across nine key growing regions to gather insights from growers and the broader industry regarding their needs and priority topics.

**Resource development:** The Lighter Touch project has successfully delivered clear, concise, and informative resources. Depending on the topic, could SWICP produce similar short resource materials, including content for those with low literacy skills?



NZ growers receiving IPM workshop certificate. Source: Vegetables NZ



Example of A Lighter Touch resources



**Preference for field experiences:** Participants noted that growers and industry professionals often prefer hands-on experiences in the field over traditional conference settings. They enjoyed learning from visiting farms, hearing presentations and networking opportunities (gala dinner and meeting NZ growers at the SWICP event).

**Cultural integration in horticulture:** Most visits to organisations paid respect to the Māori people and consult with local iwi's when developing projects. The Ngāi Tukairangi (a kiwi orchard that integrates Māori values into its practices and people) field trip beautifully showcased the integration of culture and horticultural production.

How can the SWICP project do more work with First Nations and CaLD communities?

**Whole farm system approach:** Witnessed great examples of RD&E work with whole farm systems at LeaderBrand, AS Wilcox and the research farm.

How can SWICP better demonstrate farming systems approaches rather than focussing on separate aspects of soil and crop health management with demonstrations farms? Could SWICP have fewer single purpose demo sites and showcase a systems approach with a few that also look at social, community, environmental and economic benefits?



# What's Next?

## Follow up:

- Sustainable Vegetable Systems (SVS) webinar
- NZ grower visit to Queensland ahead of Hort Connections 2025
- NZ grower visit to Victoria and Tasmania, Spring 2025
- Further collaboration opportunities i.e. cooperating, exchanging approaches and learnings from projects such as SVS, SWICP, 'A Lighter Touch' project

## Ideas:

- Exchange students or staff made easy
- Targeted scholarships for young people in horticulture







Thank you