NZGROWER & The ORCHARDIST®

VOL 97 | NO 8 | SEPTEMBER 2024

HORTICULTURE NEW ZEALAND

# INVESTMENT STARTS TO PAY OFF

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## Industry-wide



## What's New

*A regular advertorial section of new products and services. This publication does not endorse the products or services featured here.*



## On the cover:

Grower Mark De Costa at his orchard.
See page 10.
Photo by Kristine Walsh.

# NEW SEASON AND A NEW CEO

*It's wonderful to see the days getting longer and the colours and green shoots starting to come back as spring arrives. Hopefully, we're saying goodbye to winter. And a note to the weather gods, no major frosts in spring please!*

By Barry O'Neil : HortNZ president

**I hope that most of us will see good crops being set in spring, positioning us well for a bountiful harvest.**

We also have an important new beginning at Horticulture New Zealand, with the announcement of our new chief executive Kate Scott.

On behalf of HortNZ, I'd like to warmly welcome and congratulate Kate.

The calibre of candidates for the chief executive role was exceptional, however Kate stood out for her energy and ability to not only deliver on our strategy and priorities, but also look for opportunities for wider collaboration.

I am sure Kate will confidently navigate the sector's complexities, demonstrating the courage to unpick and fully understand key issues while remaining focused on delivering results that will make a difference for growers and the wider horticulture industry.

She has an impressive background, which includes having jointly founded Landpro 17 years ago and being a Nuffield Scholar. She chairs the NZ Rural Leadership Trust and was last year named the Rabobank Australasian Emerging Leader.

She has been working in agribusiness for 20 years, proving herself to be a strong and effective leader, a collaborative relationship builder, a thought leader and practical problem solver.

Kate's whakapapa is to Ngāi Tahu, and she is also experienced in leading organisations and people, fostering a strong sense of team and enabling those she works with to succeed.

We look forward to Kate starting with us on 17 October. Hopefully many of you know Kate already, or met her at our conference and Annual General Meeting.

Michelle Sands, HortNZ general manager strategy and policy, is standing in as interim chief executive until Kate starts.

I also want to congratulate Dean Smith on being appointed the chief executive of Summerfruit NZ and Karen Morrish on being confirmed as the chief executive for NZ Apples & Pears.

It's fantastic to have such great people in leadership roles in the horticulture sector. Our sector needs to get in behind and support our leaders to deliver what our growers want, which is less patch protection, less duplication and more collaboration.

> **"Kate stood out for her energy and ability to not only deliver on our strategy and priorities, but also look for opportunities for wider collaboration**

Of course, with new beginnings there is often a goodbye.

We said goodbye to our chief executive Nadine Tunley at our conference in Mount Maunganui.

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**CONTACT US**
Freephone: 0508 467 869
Web: www.hortnz.co.nz
Phone: 04 472 3795
Email: info@hortnz.co.nz
Horticulture New Zealand
PO Box 10232
Wellington 6140
Level 4,
20 Ballance St,
Wellington 6011

## A WARM WELCOME TO **KATE SCOTT**, WHO IS HORTICULTURE NEW ZEALAND'S NEW CHIEF EXECUTIVE.

Nadine has been amazing in the role, always connected, always looking for the best horticulture and organisational outcomes, and always encouraging us to find a better way of working.

Nadine led us through some really tough times, including Covid-19, a labour crisis as a result of closed borders, as well as Cyclone Gabrielle, and achieved some incredible results horticulture-wide.

She has joined Scales Corporation as its chief risk officer, and we wish her all the best for the next stage of her career.

**Kia kaha.**

NZGROWER & ORCHARDIST

*NZGrower & Orchardist* is produced by Horticulture New Zealand and is free for all levy payers. The magazine is partially funded by a grant from the NZ Fruitgrowers' Charitable Trust to ensure all fruit growers in New Zealand receive a copy each month. The magazine is also supported by Vegetables NZ, Process Vegetables NZ, TomatoesNZ, Potatoes NZ and Onions NZ.

The individual comments and views in this magazine do not necessarily represent the view of Horticulture New Zealand.

**NZGrower** including vegetable growing section:

ISSN: 2230-2700 (Print)
ISSN: 2744-5712 (Online)

**The Orchardist** including fruit growing section:

ISSN: 1173-3802 (Print)
ISSN: 2744-5992 (Online)

**Acting Editor:**
John Gauldie,
editor@hortnz.co.nz

**Advertising Managers:**
- Debbie Pascoe, 027 485 8562
  debbie.pascoe@hortnz.co.nz
- Jackie Enright, 0274 489 913
  jackie.enright@hortnz.co.nz

**Design:**
Scenario.co.nz, 04 385 9766,
joy@scenario.co.nz

**Subscriptions:**
subs@hortnz.co.nz

This publication uses vegetable-based inks and environmentally responsible paper produced from Forest Stewardship Council® (FSC®) certified, Mixed Source pulp from Responsible Sources.

Paper produced using Elemental Chlorine Free (ECF) and manufactured under the strict ISO14001 Environmental Management System.

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# CHANGE IS IN THE AIR

*Kia ora koutou.*

*Welcome to our spring issue! This month Horticulture New Zealand brings together our tandem titles for growers – NZGrower & Orchardist – into one title. For the next three months we will trial this format and gather your feedback.*

As you will have noticed, our June, July and August issues featured the head-to-tail publication of both titles. Thank you to those who shared their feedback. The head-to-tail approach highlighted the value of stronger connections among fruit and vegetable growers – creating opportunities to accelerate innovation, investment and growth across horticulture.

This spring issue is the next step. The *NZGrower & Orchardist* shares horticulture-wide grower stories and best practice. However, you will also find a crop-specific section in the centre of the magazine that relates to your business.

We thank our advertisers for their continued support of the grower community while we work through these changes. We are also grateful for the ongoing support from the NZ Fruitgrowers' Charitable Trust and the vegetable product groups.

Together with your feedback we will decide a sustainable direction for the future. Please contact me to share your thoughts on this issue. Meanwhile we wish you a productive start to the busy spring season!


**Kate Longman**
HortNZ general manager engagement
kate.longman@hortnz.co.nz
029 770 9874

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*Simon Wilcox, the new PVGA president, with one of A S Wilcox's branded fleet*

# CHALLENGES REMAIN IN PUKEKOHE

*Being elected as the president of the Pukekohe Vegetable Growers' Association (PVGA) earlier in the year was an especially memorable occasion for Simon Wilcox.*

Glenys Christian

**Attending the organisation's Annual General Meeting were his grandfather, Alan, who turned 100 last September, and his father, Garth. Both are life members of the PVGA and have represented Pukekohe growers at a national level in the past.**

"It was pretty special," he says.

"I wouldn't be where I am today without them, and they should be recognised for their service to the industry."

And while the older Wilcoxes generally don't give him advice, "they'll tell me if I'm on the wrong track".

Simon, who is in his mid-40s, was very much born into growing, as a third-generation grower. Alan grew vegetables with his brother Graham before he went dairy farming, then with his sons Garth and Rob (who died in 2013), trading as Wilcox Brothers. Simon went to Lincoln University to gain a Diploma in Horticultural Management, working in the third practical year for a Prebbleton grower as well as a packhouse in Hornby.

"That really opened my eyes more to arable production," he says.

He returned home and joined his father, Garth, to form Pinnacle Growers. They cropped around 120 hectares at Bombay with balanced areas of new season potatoes, onions for both the domestic and export market, as well as crown pumpkin and butternut pumpkin.

"We had quite a presence in the market due to branding with stickers of both pumpkins and butternuts," he says.

"Consumers really started recognising our Pinnacle brand."

## ONE MORE VEGETABLE

**Getting one more serving of vegetables on consumers' plates is one answer to the current oversupply situation says new Pukekohe Vegetable Growers' Association president, Simon Wilcox. And he's all for using the power of social media to promote that.**

"We need to be brave to participate in that space," he says.

"While growers are generally conservative, they can share a positive story. And while some growers are doing that very well, we could do more."

The benefits of greater vegetable consumption could also be promoted through linkages with government agencies, demonstrating the potential reduction this could bring in health conditions and the burden they are placing on the country's health system.

On 1 March this year, vegetables.co.nz launched Add One More Vegetable. The aim of this initiative is, as the name suggests, to encourage people to Add One More Vegetable to as many meals as they can.

The initiative is being run in partnership with 5+ A Day. To date, activity has included radio advertising and promotion, social media, interviews with spokespeople, in-store promotion, and the development of lesson plans for use in secondary schools.

But trialling small pumpkins called pumpkinos they struggled to establish this new product and any further work was halted. After a few more years they could clearly see that the scale of their business meant it wasn't sustainable, so they made the hard decision to close it down.

They had existing relationships with A S Wilcox, the company that handled their new season potatoes and export onions, and Simon found work there as potato crop supervisor in charge of field operations and technical issues.

"I was coached by Monty Spencer and that developed my skill set," he says.

> **"Sometimes the vegetable sector doesn't get the recognition of the export opportunities there could be**

"The planning was a lot more detailed than I was used to, with a 52-week sales programme. And I was exposed to more technical elements of growing with for example, agronomists visiting from the United Kingdom."

In 2011 Simon became production manager for Pukekohe, taking the lead in carrots, onions, potatoes and other rotational crops, overseeing 12 full-time workers, with numbers increasing almost to 30 in the summer harvesting period. With a number of nationalities represented he says the cultural mix left him with a better understanding of people.

Five years later he became operations manager – growing, supporting the company in the areas of people, land, processes and equipment. Then in September last year he became general manager of operations, moving more into the post-harvest area, quality and food safety, assets, engineering and transport. Again it was a steep learning curve stepping up to manage 150 workers, understanding more about people and their behaviour as well as alignment to business goals and objectives.

"There were challenges during Covid-19, but our people were amazing coming together to deliver fresh food to New Zealanders," he says.

"They really went above and beyond."

And that extended to some staff who, because of medical condition or age, were not required to be essential workers.

"They were still fighting to come to work."

Those difficult days brought about some positive changes in company processes, particularly in the use of technology.

"We found that with better communication we didn't need so many face-to-face meetings," Simon says.

*Simon Wilcox with the carrots his two children choose over lollies*

And he's "immensely proud" of recent innovations such as the introduction of the Beta Bites snacking carrots, putting snack-sized vegetables firmly in front of children. Simon is married to Steph and they have two children, Hamish (10) and Emily (8), who happily choose these vegetable options rather than lollies when they're offered.

Simon joined the PVGA in 2002, seeing it as a great opportunity to meet other growers, understand their issues and to work with different people.

"All my life I'd seen that through the involvement of my grandfather and father," he says.

"It's more about giving than taking, and making growing a better industry. Most people view it that way and it's a common theme for the Wilcox family."

Asked about the greatest change he's seen during the time of his involvement he says that when he first joined, discussions often were to do with pricing and market conditions.

"Now the conversations are all around the environment and sustainability," he says.

"In those days we didn't even know what that meant. But practices such as silt mitigation are second nature now."

Simon was a board member of LandWISE for ten years, and says its small annual conference never fails to get him thinking about all the potential ways there are to adopt a smarter growing operation. But over that time he says the legislative and regulatory changes around the right to farm have been at the forefront of PVGA discussions.

"It's been very challenging on-farm trying to see the future and how growing systems have to adapt."

But he's adamant that growers have got to be proud of what they have achieved with little in the way of resources.

"They've been exceptional, but it's frustrating that we have to keep doing it. And future challenges haven't gone away with the new coalition government.

He believes a more enabling model is needed which drives investment, science and technology allowing the industry to grow in a more efficient way.

"We need to be able to produce more from less, but without all the regulation."

While he says the government has shown it is intent on a direction to support the rural sector, there are grower concerns around timing and future changes.

"It's critical to form a relationship and understanding."

And for Pukekohe growers getting a framework for that to happen between the government, Auckland Council and Waikato Regional Council is key.

"It's a case of wait and see."

One win for the PVGA has been the removal of the Auckland regional fuel tax. "It wasn't chump change," he says.

"It added to growers' cost structures so there was a bit of a celebration at the on-farm level when that went."

> **"We need to be able to produce more from less, but without all the regulation**

But the PVGA is keeping a watching brief on signalled land use classification changes as well as the future of elite soils. Simon is quickly coming up to speed on the Integrated Catchment Management Plan (ICMP) where Pukekohe growers are represented by immediate past president Kirit Makan, and by Bharat Jivan and Brendan Balle.

Then there are the wider issues of water, climate and access to markets where he believes a more holistic approach should be taken.

"Sometimes the vegetable sector doesn't get the recognition of the export opportunities there could be," he says.

And another area where opportunities abound is for youngsters looking at a career in horticulture. He pays tribute to Pukekohe High School's head of horticulture, Dave Matthews, who spearheaded setting up a gateway programme which enabled two students to compete in the Young Vegetable Grower of the Year Competition this year.

"There are vast and diverse opportunities in horticulture," he says.

"With energy and enthusiasm, you can do anything." ●

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*After growing squash, sweetcorn and maize, in 2017 Mark De Costa turned his attention to apples*

# A TOUGH FEW YEARS BUT GISBORNE GROWER STILL LIKES THEM APPLES

*If you wanted to measure the growth of the apple industry in Gisborne, you could shove a yardstick into the back of one of Mark De Costa's trucks.*

Kristine Walsh

**After the Rockit™ harvest ended in the first week of March, Mark's driving team transported 5500 bins of locally grown fruit – each containing more than 5000 of the small, designer apples – to their exclusive packers in Hawke's Bay.**

"At the same time next year we're expecting to cart around 10,000 bins," he says. "And predictions are that within a few years, there will be 24,000 bins coming out of the Gisborne district."

Mark says that's due to a number of new plantings, combined with existing plantings coming into full production as they reach five or six years old.

He should know: as both a transporter and grower of Rockit apples he has a bird's-eye view of how the apple industry has in recent years taken root in his home region.

But that growth has not come easy. Like other Gisborne growers of recently planted apple orchards, Mark has had to deal with the Covid-19 pandemic, followed by long periods of unrelenting rain, topped off with a couple of devastating cyclones.

"The last four or five years have been tough, really tough," he says. "But we're at the point where, if we can get through a good spring then we have a strong chance of seeing all that hard work pay off."

Like many local growers, Mark's entry to the apple industry came via a roundabout route.

Growing up with his two sisters in the small settlement of Patūtahi, just inland of Gisborne, his parents planted a nine-hectare block of navel and Valencia oranges as well

producing maize, supplying the local Wattie's factory with summer crops like sweetcorn, peas and beans, and running a few sheep and cattle.

That was in the 1960s and by the time Mark was a five-year-old in the early seventies, he was jumping on the farm tractor every chance he got.

> **"I always loved being outdoors and farm life. It was clear I was never going to be stuck in an office**

"I guess you could say I've got diesel in my veins … I've always loved working with big machinery," he says.

"But we all helped out wherever we were needed, whether that be picking oranges in the August school holidays or getting involved with lambing in the spring.

"I always loved being outdoors and farm life. It was clear I was never going to be stuck in an office."

Mark later headed offshore to see a bit of the world and upon his return home in 1990, his parents sold the then 23-year-old a four-hectare block with a house on it.

**10,000**

BINS OF FRUIT EXPECTED TO CART IN 2025

**24,000**

EXPECTED PRODUCTION (BINS) FROM THE GISBORNE DISTRICT WITHIN A FEW YEARS

Five years later they allowed him to buy an adjoining 12.5 hectares and five years after that, at the turn of the new millennium, Mark completed the deal by buying the family home and citrus orchard when his mum and dad were downsizing their property.

## GISBORNE GETTING A FOOTHOLD IN APPLE INDUSTRY

*The 2024 season ended with one of the best harvests in several years, and an increasing portion of that crop is coming out of Gisborne.*

Figures from New Zealand Apples and Pears Inc. show that in 2017, the area of apples and pears planted in the region was just over 198 hectares, two percent of the national crop (which was a total of 9907 hectares).

By last year that had more than doubled to 449 hectares, four percent of the 11,225-hectare national cropping area.

NZ Apples and Pears says that as of 2023, Gisborne had taken over from Central Otago as the third-largest pipfruit-growing region in the country, though it is well behind the big players of Hawke's Bay (64 percent of total plantings) and Tasman (23 percent).

The increase was due to Gisborne growers investing in IP (intellectual property registered) varieties, with Envy™, and Rockit™ as well as Royal Gala dominating recent plantings.

"This diversification across the regions – from Central Otago in the south to Gisborne in the North – is really beneficial for the industry," says NZ Apples and Pears chief executive Karen Morrish.

"It prolongs harvest with various fruit ready for picking at different times, and allows each region to have specialty varieties that do well in their specific climates."

Meanwhile, NZ Apples and Pears says that while the most recent apple season was a good one, at 18.9 million tray carton equivalents the exportable crop was 11 percent lower than estimated due to the lingering impacts of last year's Cyclone Gabrielle and spring weather conditions.

But while the fruit was smaller than expected across the board, Karen says fruit flavour and storability were among the best the industry has seen in years, thanks to exceptional summer conditions.

"Long hot days, dry conditions and cooler nights produced apples with delicious eating quality and good colour across most varieties," she says.

"But at many facilities packing finished earlier than expected so it is likely fruit will be in shorter supply."


*Grower Mark De Costa says there's an art to getting bud thinning right to ensure the Rockit trees produce large numbers of smaller fruit, while the Envy trees respond with fewer, but larger, apples*

In those early years as a property owner, Mark and long-time partner Julie Talmage devoted much of their energy to building up the transport and contracting business De Costa Enterprises, while at the same time leasing up to 500 hectares of land – mainly up the East Coast – to grow squash, sweetcorn, maize and seed maize.

But as the years went by his attention turned back to home ground. In 2017–2018 he planted the 12.5-hectare block in Envy™ apples, then bought 6.4 hectares (directly over the road) for his 2022 plantings of Rockit.

So why did a citrus and corn grower like them apples?

"At the time we thought the Envy would grow well here; it had good prospects in the market, and even better for us, there were no licensing costs (though that has now changed)," he says.

"The Rockit was again an up-and-coming variety and we liked that it would be harvested a few weeks earlier than the Envy, so we could manage a smooth flow of labour.

"But most important was that both would be producing within 18 months, so we could count on getting some return on our investment in infrastructure."

That did happen … and it didn't.

"We've been facing some hugely challenging weather, but for our first Rockit harvest (in 2024) we managed to achieve a 75 percent pack-out, and the Envy gave 85 percent, so that's a pretty good result that we look forward to improving on going forward."

> **"Mark believes his survival in trying times is down to the diversity of his operation, and his willingness to try new things**

The two apple varieties are sought after at opposing ends of the spectrum – Rockit's claim to fame being its compact size, while growers can earn a premium for larger individual Envy apples.

And because he still considers himself a newbie in the field of apple growing, Mark is always willing to learn new ways to achieve that.

*The Envy trees are supported on a six-wire spindle structure, while an 11-wire 2D system was chosen for the Rockit*

At a recent T&G sponsored workshop in Nelson, for example, he was interested to see how more southern growers managed their trees.

"The regions are different in that, due to both soil and climate conditions, trees grow a lot faster in Gisborne but the Nelson growers do cut back quite heavily, so maybe we could be a bit braver in our own pruning decisions," he says.

> **"The Envy trees have pretty much matured, so we've got high hopes for the next harvest**

"My view is that if you get just one idea from an event, then that's incredibly useful. Other growers are a fantastic resource so we'll just suck up anything we can learn from them."

Overall, Mark believes his survival in trying times is down to the diversity of his operation, and his willingness to try new things.

When Eastland Port trialled coastal shipping for squash exports, for example, his crops were on board. When he heard about the availability of new platforms for apple pickers, he got a couple of those too.

In terms of diversity, he reckons that saved his skin over the last few tough years.

"It allows us to ride both swings and roundabouts, like while our crops up the East Coast got absolutely smashed in the last big cyclone, the citrus just ticked along doing its thing. And when apple trees were struggling with wet feet, the contracting services were in big demand."

And, of course, Mark De Costa still likes them apples.

"The Envy trees have pretty much matured, so we've got high hopes for the next harvest, and with the Rockit coming up to three years' old the output from those trees too, should be on the up," he says.

"Things have absolutely been hard but we're just going to keep talking to people, learning from them, and sharing those learnings with others.

"That's the fantastic thing about the horticulture industry and it makes us all stronger." ●

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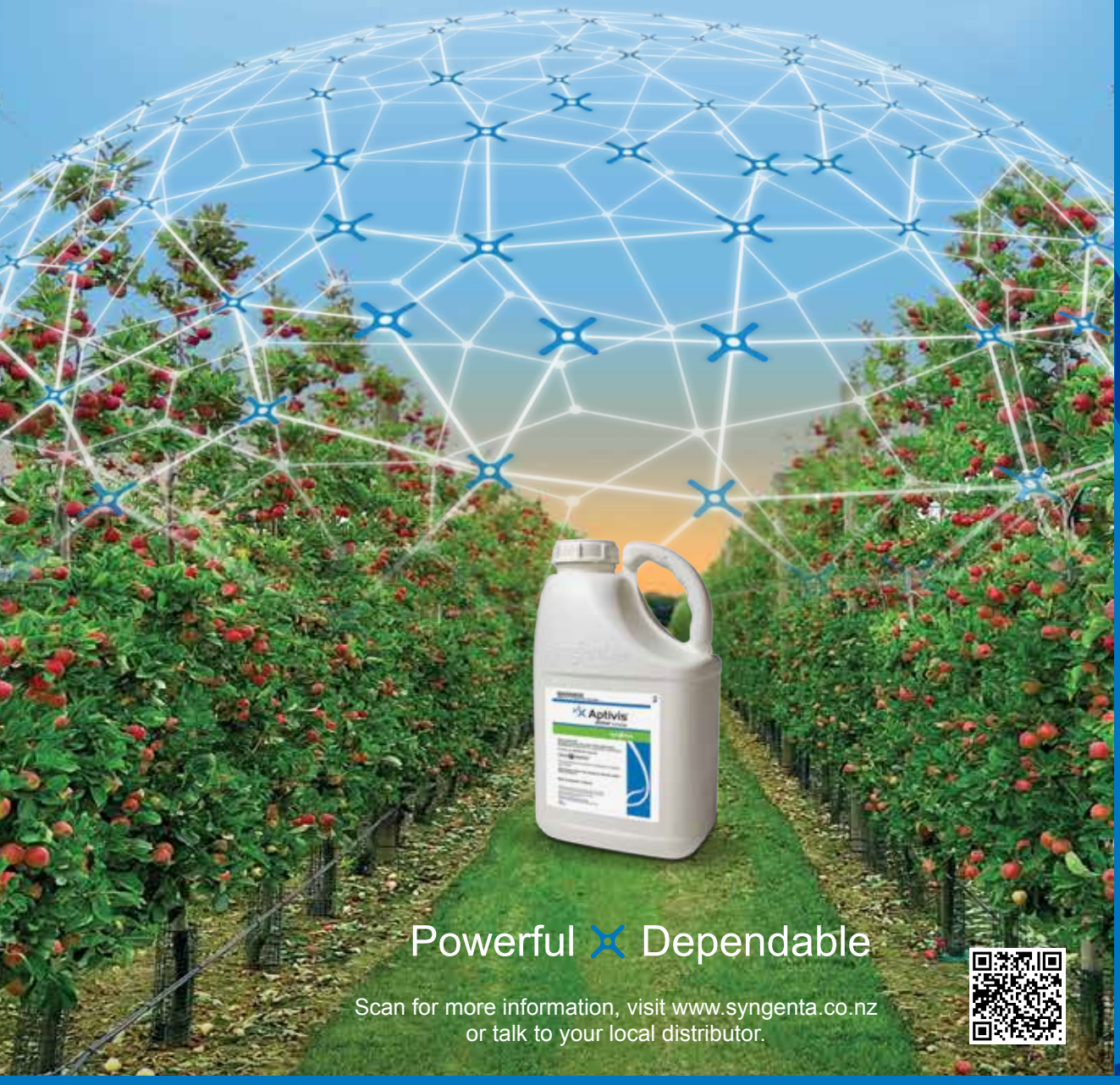


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*Paul Olsen at the family farm, comprising 800 hectares of dairy, dry stock and cropping in Opiki and the foothills of the Tararua Ranges*

# FRESH START FOR SPUDS

*Paul Olsen reckons the industry has turned a corner.*

John Gauldie

**After attending the World Potato Congress in Adelaide, Paul Olsen – chair of Potatoes NZ – sees opportunities for potato growers. He shares his congress highlights as the industry prepares to meet at the Potatoes NZ Annual General Meeting in Ashburton on 12 September.**

"Environmental regulations have put a lot of pressure on us in the last few years but hopefully that is changing now," Paul says from the family farm in Horowhenua. "It is looking more promising with legislation that the government is working on. It does feel like we've turned a bit of a corner. Hopefully that sends the right signals to the bigger players in the process sector, which should be good for growers."

There is every reason to be optimistic about New Zealand's potato sector, Paul says.

"At the World Potato Congress, we saw that New Zealand was at the top as far as yield goes. We are probably quite lucky when you look at our natural resources – good fertility, land, water, kind growing conditions for the most part. If you look at some of these other countries, the temperatures, they have a lot going against them and that's reflected in lower yields."

Nevertheless, he certainly knows how challenging the last few years were for New Zealand growers.

"I don't know what average looks like anymore. We lost a lot of potatoes with flooding and wet. We had distribution challenges. That led to an artificial demand and prices reflected that. In some instances, prices were probably double what the market would normally be paying. I think at the moment we're seeing a bit of a market realignment."

Yields were more favourable this year thanks to a consistent growing season, but economic woes and household pressure on spending are swinging prices the other way.

"It's definitely character building. Things will change and evolve. There's opportunity in export markets. There's still a lot of opportunity in process growing. I think the big process players have a good appetite for that growth."

Domestic consumption is still there but people are making different choices.

"At the end of the day we still need to eat. Potatoes are a great-value source of energy and nutrition. But whether consumers are buying a finished product or a raw potato is changing.

"I think sometimes as growers we're not so end-user focused. On the back of my Nuffield Scholarship I've tried to really refocus on the consumer end rather than the growing end.

"Talking to growers at the World Potato Congress, a lot of them are really pushing down the low carbohydrate option to meet the expectation of the consumer. Here in New Zealand I think low carb is probably still a small segment but it's growing.

"I've been trying a bit of Colomba which is a low carb variety under the Sunlite brand in conjunction with GroPak. I've been doing that for a couple of years."

As well as low carb varieties, consumers around the world are looking for more convenience. It can be a challenge for growers to develop their packaging, product range and added value products.

"The larger growers can probably get more involved in the value add with their sheer size and scale. There's been some really successful marketing done by bigger players. It's a different skill set within those businesses to achieve that. It's not a traditional grower machinery background, it's a marketing degree. This is great to see.

"But it's not just the bigger growers. I think we've seen some good collaborations with growers pooling together to get an outcome that's more favourable."

**POTATOES NZ**

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**9266** HECTARES PLANTED IN 2023

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Consolidation and collaboration are likely to continue reshaping the sector, he says. Economies of scale will be the focus for some growers, while others might focus on risk diversification through growing other crops, dairy or dry stock (as in Paul's case).

"We are losing a few growers, but we're probably growing the same if not more hectares and that's due to consolidation, and possibly some bigger growers getting bigger. But it's a dynamic industry and we will still need growers of all sizes and specialties to service the market."

As the industry consolidates, ensuring career pathways for young growers is critical.

"It was really encouraging to see so many younger people at the World Potato Congress. You can see that they just have that fire and that passion to be in the industry. That was quite refreshing to see.

*In addition to Moonlight for export and processing, Paul grows Agria for local markets and a Colomba low carb variety under the Sunlite brand in cooperation with GroPak*

## PAUL OLSEN GREW UP ON POTATOES

"When we were growing up, we used to have mashed potato sandwiches for breakfast."

Paul Olsen says the Opiki farm has been in the family since the 1970s. Paul's uncle Terry Olsen was Potatoes NZ chair from 2005 [part of VegFed at the time] to 2010. After Lincoln University and working on South Island farms, Paul was drawn back to potatoes and into leadership – initially encouraged by the late Ron Gall [then the business manager for potatoes]. "It wasn't really a question, it was more that this is what's happening."

In the following years he completed the Horticulture New Zealand Leadership, Kellogg Rural Leadership Programme and Nuffield Farming Scholarship trajectories. He chaired New Zealand Young Farmers for a number of years. Meanwhile he and his brother Shaun with the wider family developed the family farm from 130 hectares to just over 800 hectares, keeping a product mix of dairy, dry stock and cropping. In 2019 he became a Potatoes NZ board member and has been chair since 2023. Paul is also an elected Councillor on the Horowhenua District Council representing the Miranui Ward.

"I probably haven't seen it so much in New Zealand in recent years. We need to be supporting programmes that enable those students or younger people to develop that appetite. It's something that I'm pretty passionate about. I'm really keen on the likes of Young Grower of the Year to celebrate the success in the industry and younger people coming through. Without them we will struggle."

As the industry consolidates, success might look different than it has in the past, for example an equity partnership or having a stake in a bigger operation.

> **"As the industry develops, consolidation and collaboration should extend to industry good organisations too**

"Being an agronomist [within a larger-scale organisation] has its own career opportunities – in contrast to a smaller business where you do everything yourself and often probably don't do everything as well. There's a lot more opportunity especially in these bigger operations for younger growers to get skin in the game and progress."

As the industry develops, consolidation and collaboration should extend to industry good organisations too, Paul says.

"Look personally I don't have an ego about being chairman of a product group if there's a better way of doing it."

Nevertheless, potato growers have varying views about industry good body governance.

"You've got to remember that we represent growers from someone growing only potatoes, right the way through to those growing ten different crops or more, and probably paying levies to a whole bunch of organisations. We have to be mindful that we're doing the right thing with that levy dollar and getting the biggest return out of it for producers.

"Certainly there has been duplication across different product groups and different farming systems. There are a number of conversations going on about how we could work more closely with especially the vegetables side of things. The SVS tool is an example of collaboration that worked well."

That also applies to international collaboration. At the World Potato Congress, Potatoes NZ's Iain Kirkwood chaired the launch of the International Potato Partnership R&D Forum. The partnership aims to enhance global collaboration across potato research and industry.

"We're building those alliances so we can share research and innovation that other countries are working on and vice versa. That's an opportunity and probably we can collaborate more, rather than trying to do everything ourselves." ●

# THE OUTLOOK **FOR SPRING**

James Millward : MetService consultant meteorologist

## Short-term climate drivers grapple for influence

With big global drivers like the **El Niño Southern Oscillation (ENSO)** and **Indian Ocean Dipole (IOD)** looking set to remain in neutral states until at least late spring, we need to look a bit closer to home and what has been influencing our weather maps over recent months, for clues as to what is coming next. Factoring in the poor performance of seasonal modelling over winter is also likely to bear fruit (excuse the pun!) this spring.

So, what does this all mean for New Zealand this spring? Well most importantly, keep an eye on your forecasts routinely! **Things are looking volatile**, and with competing local influences and less confidence than normal in the seasonal models, keeping up with weather patterns at more predictable time frames (days and weeks, rather than months) will pay dividends. But let's pick out some of the key insights for the upcoming season…

## Temperatures: Winter chills to linger into early spring

With seas around the country now much warmer than three months ago, it looks a safe bet that a milder than normal spring is likely to occur. These warm anomalies right across the country are widely supported in the modelling – but are unlikely to tell the full story.

> "We need to look a bit closer to home and what has been influencing our weather maps over recent months, for clues as to what is coming next

Early spring will deliver a lot of variability, as is typical for the time of year, and September is likely to see temperatures spiking ahead of fast moving cold fronts, then crashing behind. When you factor in the rare Sudden Stratospheric Warming climate driver and colder synoptics, this may well deliver an **elevated risk of frosty mornings in September, especially across the South Island**, as well as another heavy snow event or two. As we head deeper into spring, and beyond mid-October, expect warmer than normal conditions.

## KEY SHORT-TERM DRIVERS AND TAKEAWAYS FROM RECENT MONTHS

**Higher than normal pressures across southern latitudes of New Zealand** have limited the number of Southern Ocean systems affecting the country this winter, with widespread drier than normal conditions across wide swathes of central and western New Zealand as a result. This high-pressure anomaly may well persist or emerge at times this spring.

**Sea surface temperatures around New Zealand have now recovered to near normal**, after being notably cooler than normal in late autumn.

**The Southern Annular Mode (SAM) has been strongly negative from mid-July**, likely tied to a rare and unpredictable Sudden Stratospheric Warming (SSW) event over Antarctica. SSWs can enhance westerly weather patterns across New Zealand, with some very cold outbreaks possible too (as seen in the late July snowstorm across the South Island).

**Seasonal models have not been performing well and need to be taken with a pinch of salt** over coming months whilst big global climate drivers remain neutral.

**A weak La Niña event looks likely to develop this summer**, albeit we may not hit the thresholds to officially declare the event. In any case, the atmosphere should begin to tilt towards La Niña by the summer months, when it would typically have its greatest impact on New Zealand weather patterns. In late spring we may start to see the fingerprints of this developing event.

| | Sep-24 | Oct-24 | Nov-24 |
|---|---|---|---|
| Whangārei | +0.6 | +0.5 | +0.7 |
| Auckland | +0.7 | +0.6 | +0.7 |
| Hamilton | +0.8 | +0.6 | +0.7 |
| Tauranga | +0.7 | +0.6 | +0.7 |
| Gisborne | +0.5 | +0.5 | +0.7 |
| Napier | +0.6 | +0.5 | +0.7 |
| New Plymouth | +0.8 | +0.7 | +0.8 |
| Taupō | +0.8 | +0.6 | +0.8 |
| Wellington | +0.7 | +0.8 | +0.9 |
| Nelson | +0.8 | +0.6 | +0.8 |
| Christchurch | +0.9 | +0.9 | +1.0 |
| Timaru | +0.9 | +0.8 | +1.0 |
| Hokitika | +0.9 | +0.7 | +0.9 |
| Ōamaru | +0.8 | +0.8 | +0.9 |
| Dunedin | +0.8 | +0.8 | +0.9 |

Above/below average  Significant

***Table 1:*** *Raw European Centre for Medium-Range Weather Forecasts (ECMWF) monthly minimum temperature anomaly (°Celsius, deviation from 1993 to 2016 average). Forecast anomalies within +/- 0.3°C of the monthly average are considered 'near average'. Predicted monthly temperature anomalies +/- 0.3–0.8°C are considered 'above/below average', while monthly temperature anomalies exceeding +/- 0.8°C are considered significant (well above or well below average). As a guide, record warm monthly anomalies are typically around 2.0°C – 2.2°C*



## Precipitation: Stormy westerlies emerging this September, but hints of a Chatham High by late spring

The first half of spring is expected to see westerly weather take hold, with seasonal modelling predicting significant low-pressure anomalies across the southern Tasman Sea, these extending across New Zealand during September (see Graphic 3).

> "Things are looking volatile, so... keeping up with weather patterns at more predictable time frames will pay dividends

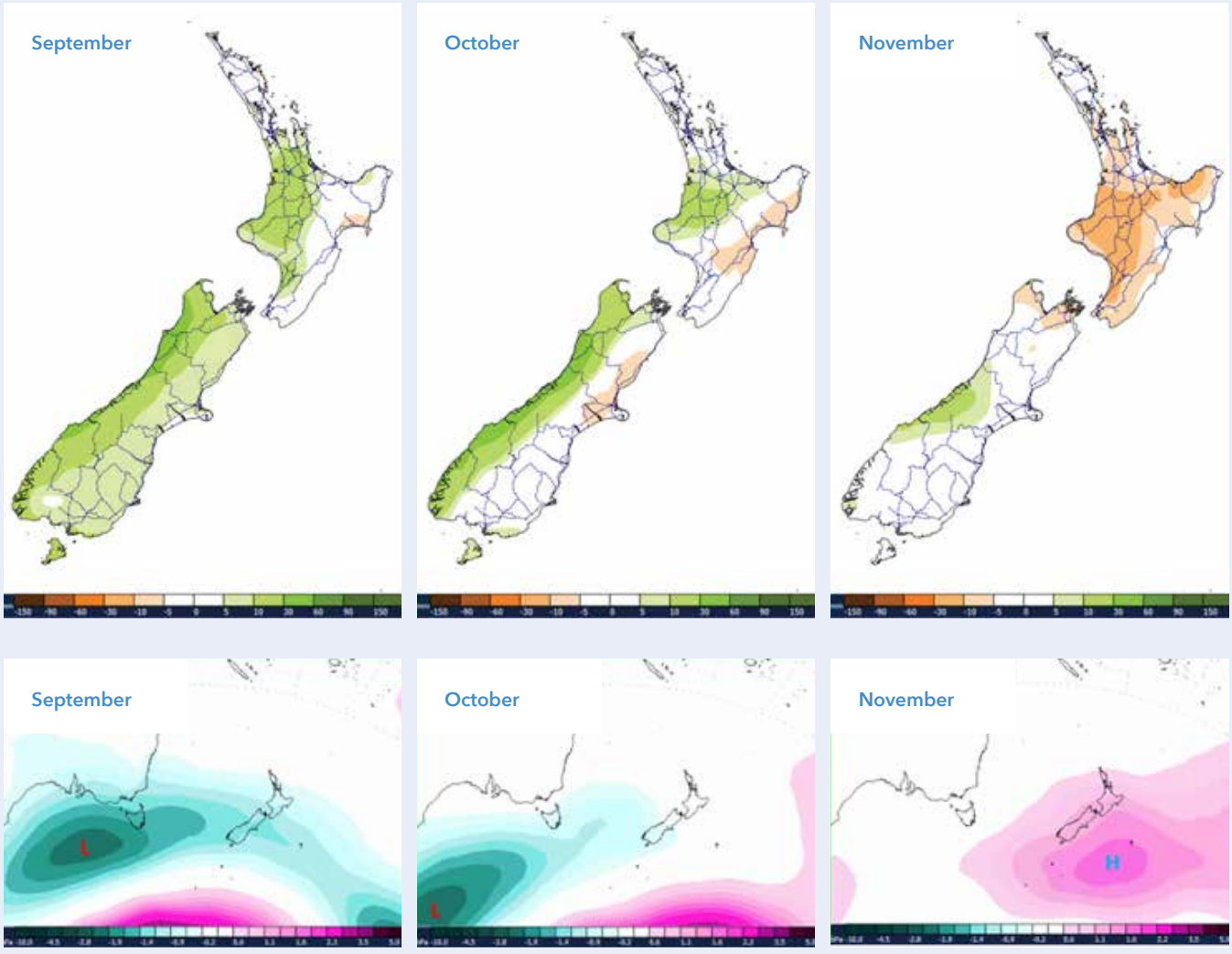
This is likely to bring much more frequent frontal activity than in recent months, and crucially more of these are likely to originate in the Southern Ocean. This will switch the focus of the wettest conditions to windward western areas (unlike winter), but given the ferocity of the stormy signal, eastern areas of the South Island are likely to see a number of spillover events, with rainfall across the Divide and driving slightly wetter than normal conditions in places like Central Otago, the Canterbury foothills and Marlborough in early spring (see Graphic 2). Hawke's Bay may well see nearer normal rainfall overall, with the eastern North Island generally more sheltered in this dominant westerly flow.

Note that these weather patterns are conducive to some **very windy spells of weather, especially across eastern New Zealand, and it is shaping up to be a notably windy start to spring**.

As we head through October, expect the southern high-pressure bias that we saw through winter to rear its head at times, generally settling things down as compared with early spring, and some drier anomalies may well start to develop across eastern and central regions, and the potential for soils to begin readily drying out with strong, warm foehn winds a regular visitor.

In November, these drier regions could become increasingly widespread as a more typical La Niña weather map begins to appear, with higher pressures near the Chatham Islands expected to slowly become the dominant feature into the start of the summer months. This would tend to direct warmer north-east flows across New Zealand, limiting rainfall returns across the lower half of the South Island.

**Note that MetService forecasters expect that September anomalies will be cooler than shown here, especially further south.**




***Graphic 2 (above):*** *Raw ECMWF forecast monthly rainfall anomaly (mm deviation from 1993 to 2016 normal). Green shades indicate wetter than normal conditions, and orange shades drier than normal. Dotted blue lines show major state highways*

***Graphic 3 (below):*** *Monthly ECMWF forecast monthly Mean Sea Level Pressure (MSLP) anomaly (hPa deviation from 1993 to 2016 normal). Cyan shades indicate lower than normal pressures, and pink shades higher than normal pressures*

While the North Island is modelled to be widely dry in November, caution is advised for Northland, Bay of Plenty, Gisborne and the Hawke's Bay, which can quite frequently pick up heavy rain events in this wind direction. Much will ultimately depend on the strength and speed of our burgeoning weak La Niña and the northern reach of that famous Chatham High pressure cell. ●

As always, you should keep up to date with the MetService long-range forecast at **http://metservice.com/rural/monthly-outlook**, or ask us questions on the MetService Facebook or Twitter feeds.


*HortNZ partnered with Rural Leaders to deliver the 2024 Leadership Programme*

# NEW **LEADERSHIP SCHOLARSHIPS** AWARDED

*Horticulture New Zealand has announced 19 new scholars who will benefit from its 2024 Leadership Programme.*

*NZGrower & Orchardist* staff

**The successful candidates come from diverse roles ranging from self-employed growers to those working in sales and marketing, export management, human resources and logistics for grower businesses.**

They also bring varied experience, ranging from science or engineering backgrounds to previous careers in the army, agronomy, geology, rural banking, auditing and butchery before moving into horticulture.

"What these applicants all have in common is that they have demonstrated leadership or leadership potential and a willingness to assume responsibility in grower or industry matters," says Nadine Tunley, chief executive of HortNZ.

"The programme is designed for potential and current leaders in the fruit and vegetable industry. They will join the ranks of more than three hundred graduates since 2002 who have developed their leadership knowledge and skills in a popular and highly respected programme that is well supported by industry leaders.

"The scholarship programme is important to the sector as it continues to grow, with ambitious goals that include doubling the farmgate value of production.

"More than ever, we need a strong pool of high performing leaders that have the confidence and skills to take our industry into the future. This programme will help prepare participants to successfully capture the opportunities and address the challenges that this growth offers."

This year's intake of 19 scholars is larger than the usual twelve, says Nadine.

"This was made possible with support from the Grower Relief Fund and the generosity of people who donated to it through the North Island weather events of 2023.


*In August, this year's intake of 19 scholars took part in phase one of the Leadership Programme in Auckland*

"We wanted to support businesses affected by the cyclone, so that they could participate in this important programme and look positively towards the future after a challenging few years."

HortNZ has partnered with New Zealand Rural Leadership Trust (known as Rural Leaders, the trust also provides the Kellogg Rural Leadership Programme) to deliver the renewed programme.

The programme has been reviewed against the current industry landscape and the food and fibre sector leadership framework funded by the Food & Fibre Centre of Vocational Excellence (FFCoVE) in collaboration with Rural Leaders.

"A sustained flow of capable and self-aware leaders is critical to the Food and Fibre sector remaining vital and vibrant into the future. The sector needs leaders that are continuously developing themselves and the teams they work with", said Lisa Rogers, chief executive, Rural Leaders.


## HORTNZ LEADERSHIP PROGRAMME SCHOLARS 2024

**Amy Willoughby**
Business development manager forTrevelyan's Pack and Cool Limited in Te Puke

**Annabelle McGuire**
Asia sales manager for Kiwi Crunch in Twyford, near Hastings

**Bobby Lowe**
Commercial manager SKL Produce, Auckland

**Mei Qi Cheah**
Post-harvest supervisor for Oakley's Premium Fresh Vegetables in Southbridge, Canterbury

**Jake Tully**
Shipping and operations associate for Taylor Corp, Hawke's Bay

**Jeremy Whitten**
Operations manager – covered crops for T&G Fresh, from Waiuku

**Justin Wehner**
Orchard operations manager for Echodale Marketing in the Tasman region

**Michaela Horcinova**
People and culture partner for Southern Cross Horticulture (SCH) in Tauranga

**Nicole Hope**
Assistant manager at Craigmore Sustainables' Springhill Orchard in Central Hawke's Bay

**Niel Redelinghuys**
Operations manager, LeaderBrand, Canterbury

**Oliver Hoare**
Grower services representative for Hume Pack-N-Cool, Katikati

**Reuben Carter**
Crop manager for Oakley's Premium Fresh Vegetables in Southbridge, Canterbury

**Rowan Wallace**
Owner and manager of Zebor Orchard, Tauranga

**Sammy Sinclair**
Regional postharvest quality manager for T&G Fresh for the Hawke's Bay/ Tairāwhiti region

**Scott Harvey**
Onion crop programme manager for A S Wilcox & Sons in Pukekohe

**Sinnead Flannery**
Horticultural manager for Howatson Rural in Tairāwhiti region

**Taurion Colquhoun**
Growing supervisor for Kaipaki Berries in Ōhaupō, Waikato

**Tim Officer**
Orchard manager of the Dunstan Hills stone fruit orchard in Earnscleugh, Central Otago

**Tim Tietjen**
Fifth-generation horticulturalist, and orchard owner/manager, Gisborne

# FRUIT GROWING

## EXTRA SECTION FOR YOUR SECTOR

Contents



NZGROWER & The ORCHARDIST

Photo by James Munro @ itch.nz, courtesy of Onside

*Cherry trees on their second winter in the ground (rising two-year-old) Gisela® 5 (top) versus Colt (bottom) rootstocks*

*The difference in bud density on a Gisela® rootstock (top) compared to a traditional Colt (bottom) rootstock*

# CHERRIES CATCHING UP ON DWARFING ROOTSTOCK

*Selections of Gisela® cherry dwarfing rootstocks have recently been licensed for the New Zealand orchard industry, and will become more widely available to growers from 2026.*

Aimee Wilson

Waimea Nurseries in Nelson confirmed that Gisela® 6 and Gisela® 12 are in production and Gisela® 5,13 and 17 are currently under importation and in quarantine, which is quite an advancement for the industry.

Gisela® 12 and 6 are currently being grown indoors in tissue culture at Waimea Nurseries' laboratory and are being trialled on orchards in Central Otago – including Clyde Orchards and Suncrest Orchard in Cromwell.

Trials of dwarfing cherry rootstocks are underway in Hawke's Bay as well.

Manager of variety development Tallulah Simpson says more of these will also be available in commercial numbers at the end of 2026.

When Professor Dugald Close of the University of Tasmania came to New Zealand back in July, he said Australasia still had a long way to go until benefits available in America and Europe, such as widespread availability of dwarfing rootstocks, were realised.

Dwarfing cherry rootstocks bring great opportunities to set up more intensive growing systems, but Waimea Nurseries says that up until now they have been difficult to propagate in a nursery environment.

"It's not easy and we are cautious," general manager sales and marketing Kate Marshall says.

The benefit of growing the rootstocks from tissue culture is that they are virus free.

Growing on dwarfing rootstock as opposed to traditional Colt rootstock means that growers can produce very large volumes quickly, Kate says.

Orchardists have been reluctant to use them in the past because they came at a cost, and the investment only paid off if their soils had enough nutrients, and they could successfully implement the new changes into their orchard systems.

Tallulah says New Zealand has been behind the United States, Europe and Chile on availability of these rootstocks due to difficulties with importing the plant material, and because they require a lot of investment.

Gisela® has already been well commercialised overseas and Central Otago is ideal for using dwarfing rootstocks because it has such a unique climate and soil conditions, and a range of different soil types throughout the district as well, Kate explains.

But dwarfing rootstocks require full efforts from the growers to make them viable and many growers now realise this.

Clyde Orchards first planted a row of Gisela® cherry dwarfing rootstock back in 2018 as a trial, and their output is looking promising.

Manager Kris Robb says the issue was being able to make it worthwhile enough for the business, and to do that you need larger numbers of trees, (such as a whole block) to work with.

Bulk amounts of new rootstocks were necessary to enable growers to manage their orchard systems more efficiently, he said.

Kris says the lack of dwarfing cherry rootstocks has been detrimental to the overall productivity of the industry.

"It has probably done some underperforming varieties an injustice by not being able to source them on dwarfing rootstocks."

Kordia, Regina and Folfar were three cherry varieties that sprang to mind, but he acknowledged the challenges were on the side of both the grower and the nurseries to make it work.

> **"The lack of dwarfing cherry rootstocks has been detrimental to the overall productivity of the industry**

"It has taken a long time for people to learn, and for the nurseries to get their systems right."

More orchards will now look to start using dwarfing rootstocks as they become available.

"If you can pick more fruit then your harvest costs reduce. You end up with smaller, more compact trees that are more efficient to prune and pick," Kris explains.

Growers will see returns faster and their yield per hectare will be higher as well.

With Colt rootstocks still making up 99 percent of the industry, the new dwarfing rootstocks will offer growers fruiting options in two years instead of the standard five.

Cromwell grower Michael Jones of Suncrest Orchard planted 10,000 trees over two different time periods, but says it is still early days to know how they will perform.

He received some of the Gisela® 5 and 12 in 2020, and planted more in 2022.

"We were given permission to graft and bud several varieties onto those stocks and grow trees for our pergola system at a density of 4000 trees per hectare.

"Success rates varied from 40 to 70 percent depending on rootstock and variety. Usually the failure resulted in the rootstock growing on and the bud or graft failing, so this enabled the rootstock to be re-grafted."

The grafting and budding had been done onsite by contractors, and so far he has had a positive experience.

"We appreciate the input from several people with advice on what we could be doing or trying in this situation, and it was great to float ideas past people like Andy McGrath or Ronald Vermeulen and get their perspective on what we were doing."

Michael says because of the options nowadays with growing systems, it will be interesting to see how the industry progresses through the next decade.

"We have investigated the use of dwarf stocks because we are frustrated at inconsistent yield and the time it was taking for less intensive plantings to reach full yield; also because of the potential to maximise quality and size and reduce labour and other growing inputs."

Admittedly the capital expenditure is a large cost, but his advice for growers is that they should be trying different stuff on their blocks, "whether it's two trees, two rows or two hectares. If you don't try then you don't know. I am really looking forward to seeing and working with our new blocks as they start to go into their production phase."

> **"We appreciate the input from several people with advice on what we could be doing or trying in this situation**

With dwarfing rootstocks growers can also plant more trees per hectare, which improves land use efficiency.

Over time, existing orchards will be able to redevelop into higher density orchards, which means less land use, but maintaining the same volumes on a smaller footprint.

Summerfruit NZ technical advisor Richard Mills says dwarfing stocks will also be a major benefit to other cherry growing areas, particularly in the strong Hawke's Bay soils.

"The earlier potential harvest period should also benefit consumers due to a longer harvest season."

He says good dwarfing apple rootstocks that emerged about 20 to 25 years ago were a significant factor in enabling that product group to make huge steps forward to increased yields on a smaller footprint.

*Rootstock tissue culture plantlets at Waimea Nurseries*

Waimea Nurseries is currently propagating the new dwarfing cherry rootstock selections in an 'Ellepot' which has a paper membrane, and they are grown indoors in a 'Cravo' house (a glasshouse with an automatically retractable roof).

The baby plantlets come into the Nelson nursery for growing on, grafting, and then growing on some more until they are ready to supply to growers.

"We're hoping that we have more success with these in a temperature-controlled environment, they are gentler on the plant than in a traditional field," Kate says.

Growers have managed extraordinarily well with the vigour of Colt rootstock in New Zealand orchards, using FOPS (Future Orchard Planting Systems), UFO (Upright Fruiting Offshoots) and pergola growing systems, and techniques to improve productivity, due to the lack of dwarfing rootstocks, she says.

Tallulah notes that cherries from New Zealand are a premium export, and soon with more availability of dwarfing rootstocks will become more competitive in this space.

"Central Otago is an incredible growing area that produces top quality fruit, and we as a nursery want to give orchardists every opportunity to make the most of that." ●

# NEW **SUMMERFRUIT NZ CHIEF EXECUTIVE** APPOINTED

*Dean Smith starts in his new role as chief executive of Summerfruit NZ on 30 September. Based in Hawke's Bay, Dean is well known in the fruit and wine industries.*

He headed up the Hawke's Bay Fruitgrowers' Association during the aftermath of Cyclone Gabrielle. In that role, he demonstrated calm leadership during considerable uncertainty and understandable stress, says Summerfruit NZ chair, Trudi Webb.

"We are extremely pleased to have been able to appoint a chief executive of Dean's calibre," she says. "We had considerable interest in the position. We selected Dean based on his vision for the summerfruit industry, wider horticulture industry experience, approachability, and can-do attitude.

> **"My vision for the summerfruit industry is to consolidate and continue to expand, leveraging the investments that growers have made**

"We are confident that Dean will expertly apply his skills and experience across the whole of the summerfruit industry – export, domestic, South Island and North.

"The Summerfruit NZ board and I look forward to working with Dean to build on what outgoing Summerfruit NZ chief executive, Kate Hellstrom has achieved over the past three and a half years."

Dean says he is thrilled by his appointment, and his approach will ensure that summerfruit growers prosper and returns improve.

> **"We are extremely pleased to have been able to appoint a chief executive of Dean's calibre. We had considerable interest in the position**

"I can't wait to get going and meet all our growers. As an industry, we have so many things in our favour – growers that are passionate, fruit that is great tasting, and export and domestic consumers that look forward every year to the taste of a Kiwi summer.

"My vision for the summerfruit industry is to consolidate and continue to expand, leveraging the investments that growers have made and will make in new varieties, and growing and harvesting methods that ensure consumers get the best taste experience possible, season after season."

*Orchard manager Madi Ellingham with Robbie Mayston at Bruntwood Farms, an early adopter of the tracking technology. Photo by James Munro @itch.nz, courtesy of Onside*

# KIWIFRUIT GROWERS SWITCH TO DIGITAL TRACEABILITY

*A new mobile app that tracks biosecurity movements on, off and between rural properties, has an estimated 950 kiwifruit properties out of 2500-plus already connected to the app. CARLY GIBBS finds out more.*

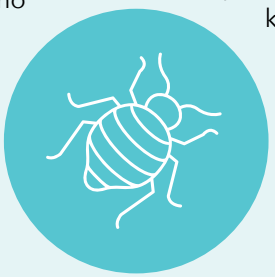
**"We've got risks out there, unfortunately," says Kiwifruit Vine Health (KVH) chief executive Leanne Stewart.**

She's referring to kiwifruit's most feared villains who live offshore but could cause havoc if they reach and spread across orchards and farms.

They include fruit fly, Brown Marmorated Stink Bug, Spotted Lanternfly, plant and soil-borne pathogens and water mould.

If they made their way onto orchards by people or vehicles inadvertently carrying them, their impacts would differ but be equally significant – from making the fruit unmarketable to widespread vine loss. Some infestations on orchards overseas have shown no proven control methods.

However, Leanne says there are practices that growers and contractors can implement that would help prevent catastrophe.



Along with basic orchard hygiene practices, recording visitors and everything they move with them is crucial to prevent the spread of risky pests or diseases. All kiwifruit growers under the legislated national Pathway Management Plan must record plant material movements and have in place a five-step biosecurity plan, which can be found on the KVH website.

Leanne also recommends the risk management mobile app Onside, developed by the Kiwi agri-tech company of the same name.

In 2022, Onside was selected to partner with the Ministry for Primary Industries in a $9 million multi-year project co-invested through their Sustainable Food & Fibre Futures fund to tackle global biosecurity risks and create an app that simplifies safety and communications.

Industry groups pay to use the Onside app's tracing feature, Onside Intelligence. As part of that, their grower members can use the Onside app free of charge, which includes recording biosecurity movements on, off and between properties.

So far, they've mapped 16,000 properties and logged over 2.6 million movements across New Zealand and Australia.

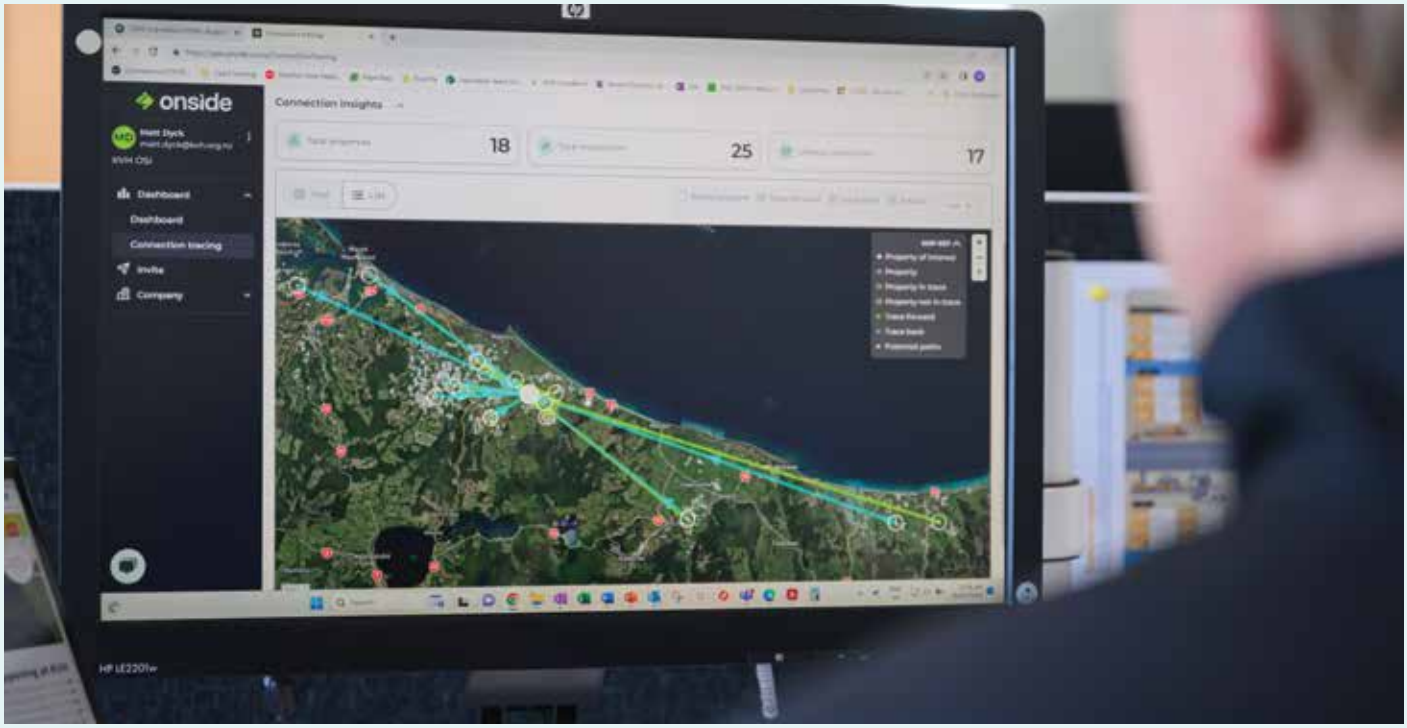
> **Recording visitors and everything they move with them is crucial to prevent the spread of risky pests or diseases**

The latest update within the app, Onside Intelligence, is a tracing mechanism. In the last six months, it has identified over 1000 'check-in' movements that presented a heightened risk of spreading a biosecurity threat.

Kiwifruit Vine Health, Biosecurity NZ, NZ Winegrowers, NZ Pork, Aquaculture NZ, and NZ Avocado Industry are the first industry partners to use the technology.


Leanne estimates that around 950 kiwifruit properties out of 2500-plus are connected to the app.

Bruntwood Farms manages around 76ha of kiwifruit between the Tauranga suburbs of Te Puna and Pahoia and was an early adopter of Onside's technology.




*Data collected by growers is private within the app but in a biosecurity incursion, KVH can access the data back-end to identify risk points and focus on interventions*

Compliance specialist Hannah Mayston says the traceability function provides a record of their plant movements, which can be "many and vast" across the 23 orchards they manage.

As a bonus, the reporting functionality makes requests for proof at GAP (Good Agricultural Practice) audit time "a pleasure" to provide.

When contractors and visitors sign in at an orchard, vineyard or farm (often as easy as scanning a QR (Quick Response) code at the property gate), plant material, people, machinery and equipment are recorded to map interactions and potential disease pathways.

Onside has partnered with KVH to implement technology to power its national Plant Pathway Plan, a programme designed to protect the $4 billion kiwifruit sector from harm.

"If something happens, we know where to trace the risk so we can effectively eradicate what has come in," Leanne explains.

In the past, the same recording was done via pen and paper or online spreadsheets, and while that's still acceptable, the app does make it easier.

"Many growers were already using Onside for health and safety, so the extension for biosecurity traceability (a free option) wasn't a massive step for some of them."

When users enter a property and open the app, it prompts them with questions such as, 'Have you moved plant material?' If they have, they fill out the details.

"Which is easier than filling in forms and then not being able to find them, so it's increasing efficiency, which at the end of the day would free up some of their time," Leanne says.

Leanne says the data collected by growers is private within the app. If there is a biosecurity incursion, KVH can access the data back-end to identify risk points and focus on interventions.

> **"If something happens, we know where to trace the risk so we can effectively eradicate what has come in**

The kiwifruit industry faced its first significant biosecurity challenge just over a decade ago with Psa (Pseudomonas syringae pv. Actinidiae). The devastation cost the industry an estimated $1 billion.

Leanne says new technology allows KVH to focus on identifying the highest-risk spots instead of making countless phone calls and digging through records in a time-sensitive situation.

"It will allow us to quickly access information and effectively target our risk interventions and response actions." ●

# NEW LEADERS AT KIWIFRUIT WEEK

*In August the kiwifruit sector from near and far gathered together for the 25th Zespri Annual General Meeting (AGM), the NZ Kiwifruit Growers Inc (NZKGI) AGM and Kiwifruit Vine Health's AGM. Zespri says it was very pleased with the turnout for its AGM with more than 350 attendees in the room and another 300 online.*

**The Zespri AGM featured inaugural addresses from new chair Nathan Flowerday and new chief executive Jason Te Brake. The mood was positive after a strong start to the current 2024 season and reflected the progress made in lifting fruit quality and rebuilding trust and confidence in Zespri after a couple of really challenging seasons.**

Two new Zespri grower directors were elected: Andrew Dunstan, chief executive at Southern Cross Horticulture; and Sally Gardiner, managing director at Start Afresh Ltd. Zespri stated, "Our industry succeeds because we have people with outstanding skills and experience who want to help take it forward, and we look forward to the contribution Andrew and Sally will make in the years ahead."

Colin Bond, NZKGI chief executive, also congratulated the new elected Zespri directors. "The [NZKGI] Forum and I look forward to working with both of them in their new capacity. I also acknowledge the contributions that Bruce Cameron and Tony Hawken have delivered to our industry after many years on the Zespri Board and thank them for their service."

NZKGI's AGM was also well attended – Colin was pleased to see the number of attendees grow year on year. Among the resolutions, members voted in favour of increasing NZKGI's levy by two tenths of one cent per tray to a total of 1.3 cents per tray. Before the vote,

*New Zespri grower directors Sally Gardiner and Andrew Dunstan*

NZKGI chair Mark Mayston noted the cost of the organisation's successful bid to retain Hi-Cane – a critical win for the kiwifruit sector – but one that left NZKGI without the financial viability to fight such cases in the future.

**HortNZ AGM:** It's been a busy couple of weeks for horticulture in Mount Maunganui. The annual RSE Conference and Horticulture Conference took place 28-30 August as well as the Horticulture New Zealand Annual General Meeting. You can read about those events in the October issue of *NZGrower & Orchardist*.

New Zealand Apples & Pears

# EMISSIONS BASELINE FOR APPLES

Karen Morrish : NZ Apples and Pears chief executive

*One of the key strategic priorities of NZ Apples and Pears Inc. is to minimise the environmental impact of our industry, and this month we took another step forward on this journey with the development of a life cycle analysis (LCA) for a kilo of exported apples.*

In no small feat, the LCA tracks apples from 'cradle' (the orchards) through to 'grave' (consumption and disposing of packaging) and is designed to serve as a baseline, ensuring our already low impact industry continues its focus on reducing carbon emissions.

We are delighted to deliver this for growers.

The science-based research is designed to guide industry to make informed decisions on sustainable development, while also identifying 'hotspots' in the value chain that contribute significantly to environmental impacts.

We know pipfruit growers across New Zealand take their role of caring for the whenua seriously. Our industry is future-focused, already low impact and growers seek sustainable and environmentally friendly innovation when faced with challenges. However, unless we have a benchmark to measure ourselves against, there is no way of knowing whether new solutions are making the difference we want them to.

What's more, this is about comparing (New Zealand) apples with (New Zealand) apples.

There is currently no standard comparison for environmental impacts in the fresh produce sector, so despite a growing need, comparisons can't be made with other fresh produce LCAs.

Instead, we hope the LCA will help growers and businesses explain, communicate and manage environmental performance with their teams, business partners and customers, who now demand environmentally friendly practices from their favourite produce and brands.

The release of the LCA also comes hot on the heels of the distribution of our Future Focused Orchards guide. Developed in partnership with local growers, international leaders, and local mana whenua, this guide is an industry vision of key practices that reduce harm and deliver health and prosperity to the industry, and improve environmental, social and economic outcomes.

> **We hope the LCA will help growers and businesses explain, communicate and manage environmental performance**

We want to ensure our industry is wholly sustainable – environmentally and economically, and across the communities we operate within.

The LCA is a critical benchmark for this – it will drive best practice and seed sustainable motivation to ensure our sector prospers well into the future.

Growers can find the LCA in the member portal at **applesandpears.nz**

# KELVIN TAYLOR'S LEADERSHIP RECOGNISED

*NZGrower & Orchardist* staff

*Kelvin Taylor has been named as the 2024 recipient of the NZ Apples and Pears Outstanding Contribution to the Industry Award.*

Kelvin, founder of family-owned Taylor Corporation Ltd in Hawke's Bay, received a standing ovation as he was honoured at the NZ Apples and Pears Conference dinner on 30 July.

A long-standing supporter of the New Zealand apple and pear industry, Kelvin is someone who has a very strong sense of community, said outgoing NZ Apples and Pears director Evan Heywood.

"His leadership benefits not just Taylor Corp, but the entire industry," he said.

"Kelvin's family has been growing, packing and exporting premium apples for over 100 years. He has always been a grower at heart and at the forefront of new ideas and technology.

"After Cyclone Gabrielle, he showed unwavering commitment, courage, and dedication to his company and the industry. When many would have walked away from the devastation and losses, he refused to let it be the end of his legacy.

"His priority was the community – offering the company helicopter for rescues and supply drops – and he stood up for horticulture, rallying local and central politicians, and hosting them onsite to see the devastation first-hand.

"This award is a symbol of our gratitude for Kelvin's contributions and as an inspiration to all of us to continue striving for excellence in our industry.

"Kelvin's passion, dedication and vision have left a mark on our industry, and his legacy will continue for many years to come." ●

*Budbreak on Royal Gala in Hawke's Bay*

# **REST** AND **RECOVERY**

*Spring is a wonderful but precarious time of year in an orchard. As buds break, green, white and pink slowly overtake the dull browns of winter, and activities on the orchard start picking up pace.*

Sean Gresham, Ph.D. : AgFirst consultants

**Although it is impossible to accurately predict conditions this spring, the high amount of winter chill most regions experienced this year suggests that we should see a compressed and potentially early budbreak, which could translate through to an early and rapid flowering period.**

This spring thankfully differs from last year in that floral potential should be high due to favourable summer conditions. In last year's spring article in *The Orchardist*, Sarah de Bruin talked about the poor condition of trees following the challenges of Cyclone Gabrielle and the miserably wet and mild winter. Thankfully, we are starting this season under almost completely opposite conditions.

Every season brings new challenges, but we are well set up for an excellent start. The high winter chill and favourable summer conditions for floral bud development will require some consideration for spring management decisions though. A condensed bloom period can compress risk and shortens the window of opportunity for certain applications such as primary thinning on apples. Therefore, more than ever this season, growers will need to be nimble and have the capacity to cover large areas quickly.

## Dormancy and winter chill

Dormancy is an important stage of the growth cycle, allowing the trees or vines to be protected from freezing temperatures, conserving nutrients and carbohydrates that are stored in the trunk, stems and root system, avoiding pests and pathogens, and also synchronising new growth and fruiting.

| | Winter chill (Richardson Chill Units, May 1st–August 1st) | | Solar Radiation (Jan + Feb, Mj/m²) | |
|---|---|---|---|---|
| **Region** | **2023** | **2024** | **2023** | **2024** |
| **Bay of Plenty (Te Puke)** | 722 | 892 | 448 | 600 |
| **Hawke's Bay (Twyford)** | 803 | 1112 | 580 | 650 |
| **Tasman (Riwaka)** | 1073 | 1259 | 273 | 768 |

***Table 1:*** *Comparison of winter chill accumulation (Richardson Chill Units) from May 1st – August 1st in 2023 vs 2024 and early summer solar radiation (average of total monthly solar energy (Mj/m²)*

As spring arrives, the trees or vines must break out of the dormancy phase to mobilise carbohydrates needed to initiate new growth. Dormancy release is influenced by two distinct phases: endodormancy (chill accumulation) and ectodormancy (heat accumulation).

**Endodormancy** is the true resting stage which is only released after sufficient chilling occurs. The specific chill requirements differ across plant species and cultivars. Many growing regions in New Zealand have marginal chill hours in most years, but this winter has seen above average winter chill. This means it is likely that trees and vines would have reached required chilling earlier to shift from endodormancy to ectodormancy.

During **ectodormancy** the buds largely remain dormant due to cooler temperatures and will start to swell, crack open and begin to grow once temperatures consistently increase above the critical threshold. This process can be accelerated with the aid of dormancy breakers.

Several different products are available for inducing early or more consistent budbreak. Product selection and timing is dependent on a number of site-specific criteria and the desired outcome (advancement versus compression of bloom). In general, dormancy breakers accelerate the natural process of budbreak through inducing metabolic changes within the treated trees or vines. Dormancy-related inhibitors such as abscisic acid are disrupted, short bursts of oxidative stress trigger a growth response, and in turn, growth promoting phytohormones such as cytokinins and gibberellins are produced.

The timing of natural budbreak is largely dictated by consistent heat accumulation in spring and therefore, at this stage we do not know whether natural budbreak will be early or not. If natural budbreak does occur early, then there may not be a marked effect of dormancy breakers.

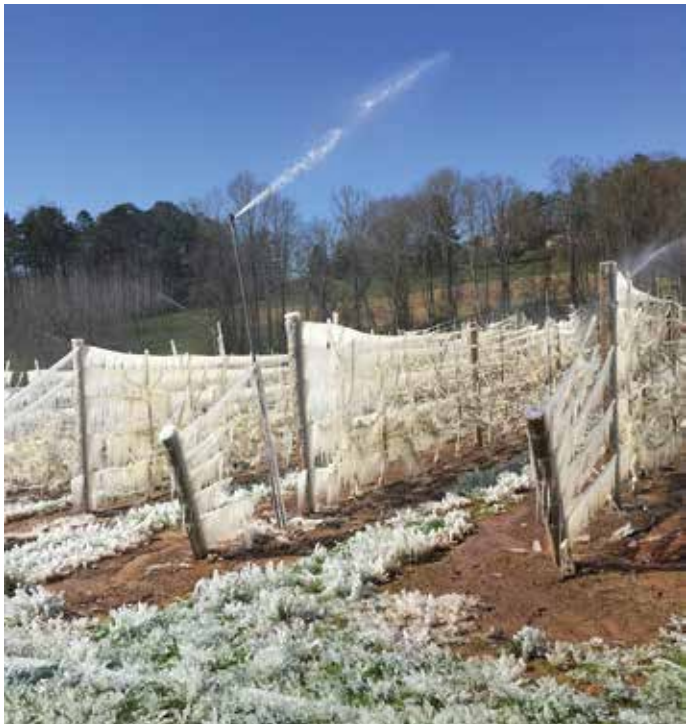
## Flowering starts the previous season

Environmental conditions over winter and spring and application of dormancy breakers influence the timing and duration of budbreak. The environmental conditions, crop load, and nutrient status of the trees or vines dictates the ratio of floral buds to vegetative, and the quality of those floral buds.

The primordial cells that become flowers and ultimately fruit this season started growing last spring as undifferentiated cells. At some point in summer, the fate of those cells is determined – differentiating to either a vegetative or floral bud. The exact timing of cell differentiation differs across species and cultivars and can be influenced by environmental factors. For Gala apples, bud differentiation occurs around 100 to 120 days after full bloom. Therefore, the intensity of flowering this spring will be largely influenced by the crop load, nutrient status and weather conditions last summer.

Overall we had good growing conditions last summer with plentiful sunshine and growing degree days. Therefore, if the plants had sufficient water and nutrients, and the trees were not overcropped, we should expect to see a very good flowering this season and therefore good potential crop of fruit. Accurate bud counts and data-driven pruning decisions will ultimately determine the potential floral load this spring.

*Kiwifruit canopy in spring*



*Frost protection using overhead watering maintains buds above critical temperature through the latent heat of freezing beneath the ice*

## Spring temperatures – pollination, cold damage

Each flower has the potential to produce a fruit and therefore, having plentiful flowers should mean that there is plenty of fruit. However, several factors affect whether each flower gets the chance to become fruit. Most importantly, successful pollination must occur. There is often a short time window when compatible pollen must come into contact with the stigma and successfully travel down into the ovary. In New Zealand, honeybees are usually the most efficient for transferring pollen to the fruiting flowers. In some other countries native bees and flies play an important role but in New Zealand, our native insect species are not adapted to visiting economically important fruit trees or vines. Therefore, intentional placement of managed honeybee hives is critical for effective pollination. It is likely that we will have a compressed flowering this spring due to the high winter chill – that means a greater number of flowers will be open to pollination on any given day. To account for this, it is worth considering increasing the hive density to ensure there are sufficient bees to pollinate the higher number of flowers.

Honeybees are fantastic workers but are fair-weather friends – they will only actively forage when conditions are right, avoiding bad weather and cooler conditions and can get confused under hail netting. Bumblebees, being larger and covered in a thick hairy coat, will forage at much lower temperatures and hence they are useful pollinators when honeybees are not in evidence. The efficiency of bees pollinating kiwifruit is hotly debated so it is common practice to help pollination along by blowing pollen harvested from males onto the flowers.

Once the right pollen has successfully attached itself to the stigma, it must travel down into the ovary. The speed at which this occurs is temperature dependent. For apples, the ideal range is 15–25°C, lower temperatures can slow or even prevent pollen tube growth, and at excessively high temperatures heat stress can inhibit pollination.

Cold temperatures close to freezing are also a major threat at flowering and early fruitset. Prior to flowering, the unopened flowers have higher tolerance to freezing temperatures, but the risk of frost damage increases once flowering starts. Therefore frost protection is vital over this period, especially if flowering is condensed and early.

> **Several factors affect whether each flower gets the chance to become fruit. Most importantly, successful pollination must occur**

The paradox with fruit production is that although we need flowers to set fruit, excessive fruitset is detrimental to fruit size and quality. The earlier fruit are removed, the bigger the benefit in fruit size. Hence chemical thinning plays such an important role for optimum apple production. Last spring required a very conservative approach

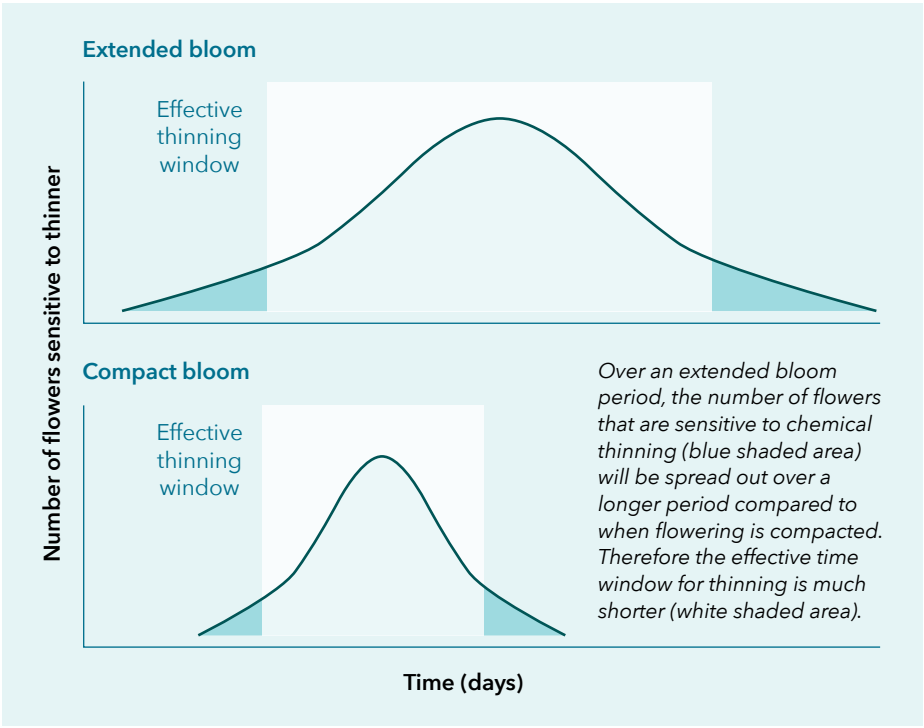



***Figure 1**: Growers will need to be more nimble than ever this season*

ALTHOUGH WE NEED FLOWERS TO SET FRUIT, **EXCESSIVE FRUITSET IS DETRIMENTAL TO FRUIT SIZE AND QUALITY**. THE EARLIER FRUIT ARE REMOVED, THE BIGGER THE BENEFIT IN FRUIT SIZE.

to chemical thinning due to the challenging environmental conditions trees experienced during bud differentiation, relatively weak winter chill and marginal spring conditions.

It is highly likely that most crops will have strong potential for a heavy and compressed fruit set. These conditions require very careful consideration for chemical thinning. An aggressive approach will probably be needed to achieve the target outcome. However, when flowering is condensed, chemical thinning decisions must be adjusted and timing becomes more critical. Chemical thinners, especially primary thinners are most effective at particular stages of flowering or fruit development. When flowering occurs over an extended period (14–20 days in some years), multiple applications of primaries may be required to achieve target outcomes.

When flowering is condensed, there is a much shorter window of opportunity when the optimum number of flowers are sensitive to thinners.

## Summary

Fruit harvested in 2025 started growing as undifferentiated cells last summer under ideal growing conditions and have rested as dormant buds through winter with above average winter chill. We are well set up for strong, compressed and potentially early flowering. However, spring conditions will also influence the timing of flowering and percentage fruit set. Although we cannot predict the future, we can make sure we are prepared in anticipation of potentially compressed and early bloom. This season, as always, careful monitoring and readiness to respond will be critical.

# GROWERS' TRUST COMPLETES BUILDING UPGRADE

*NZ Fruitgrowers' Charitable Trust executive officer KEITH MACKENZIE shares an update for growers following the trust's annual general meeting. The trust supports New Zealand fruit growers through grants for research, funded programmes and scholarships.*

## Trustees

Rick Curtis from Northland has retired after serving fruit growers for 27 years as a director of the NZ Fruitgrowers' Federation and trustee of the NZ Fruitgrowers' Charitable Trust. He has also been a director of Huddart Parker Building Company.

He has achieved an outstanding level of service having spent many dedicated years as president of NZ Citrus Growers Incorporated and has been instrumental in driving change in many areas of the industry. His clear and direct focus on outcomes together with a sincere dedication to industry good has served the industry in spades and his contribution is very much appreciated.

Rick has been replaced as a trustee by Brad Davies who assumes the seat until the end of term in 2025. Brad comes from a lineage of fruit growers with his father, Roger, a director of NZ Fruitgrowers' Federation and his uncle, Warwick, who built the two kauri board tables and donated them to "the fruit growers of New Zealand", one of which now stands proudly in the Zespri head office.

*Citrus grower Rick Curtis served fruit growers for 27 years as a trustee of the NZ Fruitgrowers' Charitable Trust*


*The newly refreshed Huddart Parker Building in Wellington is owned by the NZ Fruitgrowers' Charitable Trust*

The current trustees are **Andrew Fenton** (chairman – Bay of Plenty, Waikato), **Richard Easton** (Nelson, Marlborough), **Leon Stallard** (East Coast, Hawke's Bay, Wairarapa), **Earnscy Weaver** (Central Otago, Canterbury) and **Brad Davies** (Northland, Auckland).

## Huddart Parker Building

The building owned by the NZ Fruitgrowers' Charitable Trust on Post Office Square in central Wellington known as the Huddart Parker Building was behind a wrapped scaffold earlier this year while a full exterior refurbishment has been completed, including a new roof. The refreshed building looks outstanding, and as a landmark building it proudly reinforces its heritage status.

## Financial Year 2024

The 2024 audited consolidated accounts for the NZ Fruitgrowers' Charitable Trust and Huddart Parker Building Company show net assets of $27.64 million. Total grants for the year were $506,000 that provided financial assistance to scholarships, Young Grower of the Year competitions, educational initiatives, *The Orchardist* magazine, those impacted by Cyclone Gabrielle and various regional and central applications that met the criteria set in the Trust Deed. Trust applications are generally considered by trustees at meetings in September and March of each financial year.

# PUBLIC CAMPAIGN LAUNCHED

*Horticulture New Zealand has launched a campaign to create greater awareness among Kiwis about the dedication, hard work and passion that goes into producing New Zealand-grown fruit and vegetables.*

**The *Taste the Yakka* online campaign highlights the challenges that growers face and encourages support for policies that support the sector.**

It includes a short video which is available on YouTube, information on the HortNZ website and in the wider media and a competition to win a year's worth of Wonky Box fruit and vegetable deliveries.

*Taste the Yakka* is aimed to help all New Zealanders, in towns and cities across the country, to connect with where their horticultural produce comes from.

This is especially important when food plays such a key role in people's lives, bringing together families and friends.


> **Taste the Yakka is aimed to help all New Zealanders to connect with where their horticultural produce comes from**

HortNZ wants New Zealanders from all walks of life to support our horticulture sector and stand with us in delivering fresh, high-quality produce.

We know Kiwis believe in an honest day's work and getting on with it. That's exactly what you, our growers are doing every day, rain, hail or shine. This results in some of the best food on earth.

The video shows the process that our food goes through to get from growers like yourselves to the table, the surprises of weather, the research, planning, science, soil, teams, dedication and the passion.

By raising awareness, HortNZ aims to inspire support for policies that will sustain and strengthen New Zealand's horticulture industry. People entering the competition sign up to the campaign and pledge their support for the sector.

We know as growers you face a range of challenges including extreme weather events, stringent government regulations, sustainability pressures and rising production costs.

Every day, we see you displaying resilience and resolve to overcome these obstacles so you can continue to produce nutritious fruit and vegetables for Kiwi dinner tables.

However, not everyone knows about all these ongoing challenges facing New Zealand food producers.

This campaign exists to change that by fostering a deeper understanding and support for those who work tirelessly to bring fresh produce to our tables.

We want New Zealand to join us on this journey. It is about understanding and appreciating the immense effort, skills, resilience, passion and innovation that go into growing our food.

Recognising the dedication of our growers is crucial for making informed decisions that benefit our food supply, environment and communities. We are encouraging Kiwi consumers to join us in supporting the heart of our nation's food supply. ●

For more on Taste the Yakka, go to **www.hortnz.co.nz**


*At the 2019 launch of the NZKGI-commissioned book* Seeds of Success *with former Agriculture Minister Damien O'Connor and former NZKGI chairman Doug Brown and author Elaine Fisher. Photo – Jamie Troughton/Dscribe Media*

# COVERING HORTICULTURE
## A JOURNALIST'S PERSPECTIVE

*Contributing writer ELAINE FISHER is retiring after decades of service to horticulture, including stints as editor of the* New Zealand Kiwifruit Journal *and president of the New Zealand Guild of Agricultural Journalists and Communicators. In her final article for Horticulture New Zealand's magazines, she reflects on a changing media landscape and half a century of journalism.*

**Newspapers were arm-stretching broadsheets, and the Saturday *New Zealand Herald* was door-stop heavy. A plethora of weeklies and magazines served rural communities. Deadlines were daily and radio and television provided the 'breaking news'.**

That was the media landscape when I became a journalist. No computers, internet, cell phones or digital cameras – I remember the nose-stinging smell of darkroom chemicals and the noise and heat of Linotype machines with their crucibles of melting lead.

Unsurprisingly, 50 years on the media has changed significantly. Newspapers have shrunk to tabloid size; many weeklies and magazines have disappeared, and news is 'instant' whenever and wherever you want it.

Throughout my career, the basic principles I learnt from tough sub-editors in the *Waikato Times* newsroom, served me well. Research, talk to both sides and ask who, what, where, when, how and why, then check your facts. Keep your opinions out of the story, unless it is an editorial. Let readers form their own views.

Failure to do so resulted in a very public summons across the newsroom floor to the sub's desk for a 'please explain'. No better way to learn.

Now more than ever, those skills are needed to not only serve the public, but also to protect the craft and integrity of journalism and even democracy.

What is now called The Legacy media – print, radio and television – has suffered and, in some cases, collapsed from the emergence of 'new media' – social media, email, search engines and most recently generative AI (artificial intelligence).

*Elaine Fisher covered horticulture for decades, and broke the story on Psa's discovery in Te Puke in 2010. Photo – Merle Cave/Coast & Country News*

The changes began 20 years ago when Facebook launched. People no longer had to rely on the news and views provided by big (or even small) formal media organisations – they had their own voice and the voices of others around the world.

Anyone could be a reporter, quickly uploading information and images based on their own opinions and observations with no critical oversight. It was exciting and liberating but also dangerous on a personal and political level.

The popularity of social media pulled in the advertising dollars of companies keen to tap into new audiences. This hit print media hard, as did significant increases in printing and postal charges.

Rising costs have led to staff cuts, so increasingly generative AI is used to help create news content, including by the *NZ Herald* which, in July this year, used an AI tool to produce a *Weekend Herald* editorial about the All Blacks.

According to a 31 July item by Hayden Donnell of RNZ Midweek Mediawatch, New Zealand Herald's publisher NZME said it should have employed more "journalistic rigour" before publishing the editorial.

Artificial intelligence may be a useful tool to quickly research and assemble information in an overstretched, under resourced newsroom, but not to write an editorial which should showcase the best of human generated writing, style and content.

Following the fallout from the admission by NZME, it's likely it and other media will disclose the use of generative AI in future articles. That could be both reassuring and worrying for readers, many of whom already distrust mainstream media and are even more nervous about AI.

And with justification. It's hard to know exactly who is controlling the AI tools, but one thing is certain – every time we use them, artificial intelligence is learning from us and getting smarter.

> **"Print, radio and television has suffered and, in some cases, collapsed from the emergence of 'new media'**

I believe it is time to return to the best principles of journalism: truthfulness, accuracy, objectivity, impartiality, fairness and public accountability. Doing so will help regain public trust and ensure the survival of journalism as a critical part of democracy, to hold power to account and to accurately inform and entertain readers.

One organisation which seeks to help rural journalists do that is the New Zealand Guild of Agricultural Journalists and Communicators. Among its aims are to: "Maintain a high standard of agricultural journalism", and "Promote better understanding of agriculture, and its place in New Zealand's economic and social life".

For decades I have been a guild member and served on its executive and a term as president. The guild has a code of ethics, offers personal development opportunities, seminars and rewards excellence through its annual journalism and communicator of the year awards. Long may it continue to do so.


Seeds of Success – The stories of New Zealand's Kiwifruit Pioneers *by Elaine Fisher was commissioned by NZKGI to mark its 25th anniversary in 2019. In 2021 Kiwifruit Vine Health published the book* Psa, The New Zealand Story *written by journalists Sue Hoffart and Elaine Fisher*

Elaine is your contact

Elaine's a Times girl, as we told you yesterday. She's a reporter who is well known to many people associated with many Waikato organisations.

The Times is a community newspaper—your newspaper—and Elaine will be heading a new Times service which, we trust, will encourage more organisations, clubs and readers to help The Times keep the Waikato informed.

Elaine, who is used to getting out of the office and meeting people, has volunteered for a desk job.

If your cat has learned to knit, if you have just seen a flying saucer, if your favourite organisation has done something important, don't just tell the neighbours.

Dial 80129 and ask for Elaine. She will discuss your news with you.

And don't be shy about it. If you even think your big news may interest your fellow Times readers, Elaine will advise you. She's your contact girl!

*This 1970* Waikato Times *promotion to encourage more local news input from readers featured cadet reporter Elaine Smith*

Technology is of course not all bad. Computers, digital cameras, cell phones and the internet enable me to work from home now, and did so while our children were young, long before Covid-19 made it necessary.

Technology has brought changes unimaginable when I began writing for the *Lower North Weekly News* in Wellsford in my last year at high school. That opportunity came on the recommendation of the best careers adviser I could have – retired journalist and my school bus driver Gus Dallas.

My first job, straight from school, was with the *Plateau Gazette* in Taumarunui in 1969. In the years that followed I worked for daily and community papers in Taupo, Hamilton, Whakatane and Tauranga.

It wasn't until the 1990s that I specialised in horticultural reporting as editor of the *New Zealand Kiwifruit Journal*. Growers, post-harvest operators, scientists and industry leaders patiently taught me about growing, packing and marketing kiwifruit.

I wrote about the launch of Hort16A, the first commercial gold kiwifruit with its distinctive 'beak' which taught the industry to handle fruit gently. I also reported on the structural changes within the industry and the branding process which resulted in the Zespri name. It's amusing now to remember the public uproar 'renaming kiwifruit' caused.

I left the *NZ Kiwifruit Journal* in 1998 to join the *Katikati Advertiser*, and in 2008, became the *Bay of Plenty Times* rural editor, including editing the monthly publication *Country News*. I broke the story about the discovery of the vine disease Psa on a Te Puke kiwifruit orchard on 5 November 2010.

Over the coming months and years, I witnessed and wrote about the pain, sorrow, loss and also the determination and innovation of growers and the industry to survive the impacts of the disease. The threat was met head on, and the industry survived by working together, being flexible and innovative and never forgetting the human toll it was taking.

I accompanied a group of growers to Italy in 2011 to see the devastation the disease had caused there and to find answers, if any, to combat it in New Zealand.

In 2012 I joined Tauranga based Sun Media, owned by Claire and Brian Rogers, as editor of *Coast and Country News*. In 2018 I left to write the book *Seeds of Success – The stories of New Zealand's Kiwifruit Pioneers* to mark the 25th anniversary of New Zealand Kiwifruit Growers Inc.

> **"It's amusing now to remember the public uproar 'renaming kiwifruit' caused**

Together with journalist Sue Hoffart, I wrote for the 2021 publication *Psa, The New Zealand Story*, produced by Kiwifruit Vine Health and edited by Lisa Gibbison. For some years I have also been a freelance writer for HortNZ's publications and for the *New Zealand Dairy Exporter*.

Every day as a journalist I've learnt something new. It's a richly rewarding career which has taken me to North America, Italy, Europe, Japan and throughout New Zealand. I've been privileged to meet and talk with people from all walks of life and been humbled by their trust, especially those recounting stories of grief, loss and hardship.

I've been impressed too, by the generosity of so many who have shared their knowledge, especially those in the horticultural industry.

Now that Graham and I have moved to Māpua in the Tasman Region, it's time to enjoy family, friends and exploring the South Island and beyond. ●

Up to 50% Off* Fees

# There's never been a better time to sign up for training in Fruit Production!

Do you or your team members want to develop new skills and knowledge in fruit production? We have training options at level 3 and level 4, plus get up to 50% off fees* for fruit production programme sign-ups in 2024.

**If you'd like more information, call us on 0800 20 80 20, email info@primaryito.ac.nz or visit www.primaryito.ac.nz/fruitproduction**

*Terms and conditions apply.
Visit primaryito.ac.nz/halfpricefees for full T&Cs.

PrimaryITO

*Prime Minister Christopher Luxon and Judith Collins, Minister for Science, Innovation and Technology with members of Plant & Food Research's molecular biologists. Photo courtesy of Plant & Food Research*

# GENE TECHNOLOGY CHANGES IN THE PIPELINE

*Two proposed regulations could change how New Zealand manages gene technology in fruit and vegetable cultivation and food safety.*

*NZGrower & Orchardist* staff

**In the last months, further details on gene technology proposals were released by the Ministry of Business, Innovation & Employment (MBIE) and Food Standards Australia New Zealand (FSANZ). This article summarises information produced by government officials to explain proposed changes to regulations.**

## Gene Technology Bill

In August the New Zealand government revealed more details about its proposed Gene Technology Bill, which would establish a regulator to enable New Zealand to safely benefit from gene technologies.

The legislation will be closely based on Australia's Gene Technology Act 2000, and like Australia, New Zealand will take a 'hybrid approach' to regulation, with applications assessed under a risk framework. This means the government will regulate higher risk activities and exclude some low-risk activities.

Non-regulated technologies and organisms will include some "gene editing" techniques. Applications that would be exempt include those producing results indistinguishable from those achieved using traditional processes or natural mutations – two examples that have been provided are GABA tomatoes (containing gamma-aminobutyric acid which can lower blood pressure and relieve stress) and disease-resistant potatoes.

Some technologies and organisms will also be exempt if they are already exempt from current GMO (genetically modified organism) regulations.

For non-exempted technologies and organisms, the legislation will distinguish between contained activities (e.g. undertaken in a laboratory), environmental release, and medical applications.

It is expected that non-exempted crops for environmental release will be assessed for risk on a case-by-case basis. If they are categorised at the highest level of risk, then a full risk assessment will be conducted including public consultation. The regulator would only approve the application if they were satisfied the risks could be appropriately managed.

The gene technology regulator can apply conditions to the licence to manage the risks, for example a boundary or a particular distance to be applied to the perimeter of the crop (similar to conditions currently imposed on use of agrichemical sprays).

The government proposes that any industry programmes that provide suitable assurance will not be overseen or regulated by the gene technology regulator.

Expedited assessments would apply to activities approved by overseas gene technology regulators previously recognised by the New Zealand gene technology regulator.

The proposed bill will also remove the Resource Management Act (RMA) provision that allows councils to restrict use of GMOs.

> **It is expected that non-exempted crops for environmental release will be assessed for risk on a case-by-case basis**

Horticulture New Zealand, the Kiwifruit Breeding Centre and Zespri are part of an industry reference group. MBIE is seeking advice from industry on trade, market access (global regulations), consumer perceptions, New Zealand branding, competitiveness in the global market, commercial and economic impact. MBIE is also seeking industry views on the efficiency, effectiveness, consistency and practicality of policy options.

Legislation will be introduced to Parliament by the end of the year. MBIE is the lead agency for this work. The regulator would be a new business unit within the Environmental Protection Authority (EPA). Enforcement will primarily be undertaken by the Ministry for Primary Industries (MPI).

## FSANZ Proposal P1055

Food Standards Australia New Zealand (FSANZ) recently announced proposed changes to how genetically modified (GM) foods are defined in the Australia New Zealand Food Standards Code.

The effect of the proposed change would be to redefine "genetically modified food" (GM food) as food derived from an organism (or cells of an organism) that contains novel DNA (genetic material) as an outcome of the genetic modification process.

> **"Food from a genome edited organism that does not contain novel DNA in its genome will not be considered GM food**

This differs from the current approach where food is considered GM food if it is derived using gene technology, irrespective of the outcome of that process.

FSANZ prepared the proposal following an earlier review which concluded the definitions for 'food produced using gene technology' and 'gene technology' are no longer fit for purpose because they are unclear and do not reflect the diversity of techniques now in use, or that may emerge in the future.

The FSANZ assessment has concluded that when a food derived using new breeding techniques (NBTs) is equivalent in its characteristics to food derived through conventional breeding, it also presents the same low risk. Because of this low risk, a pre-market safety assessment by FSANZ is not needed, and such food should therefore not be GM food for Code purposes.

This will mean that food from a genome edited organism that does not contain novel DNA in its genome will not be considered GM food and will be exempt from regulations (with some exceptions).

Foods produced in, or imported into, Australia and New Zealand that do meet the new definition of 'genetically modified food' and are approved for use will be subject to mandatory GM labelling requirements in the Code. If the food is unpackaged, the information must accompany the food or be displayed with the food.

Proposal P1055 commenced in early 2020, following the completion of FSANZ's Review of food derived using new breeding techniques. The first call for submissions was released in 2021. Submissions on the second public call for submissions close on 10 September.

## Current situation in New Zealand and Australia

Genetically modified vegetables, fruit or meat can be sold now in New Zealand and are already regulated under the Food Safety Act and labelled as GM. Food Standards Australia and New Zealand (FSANZ) sets the standards.

There are currently nine GMO crops approved by FSANZ for use as an ingredient in food sold in New Zealand, including varieties of soy, wheat, potatoes, corn and rice. There are no fresh whole GM fruit or GM vegetables in the food supply in Australia or New Zealand.

The majority of GM foods in Australia and New Zealand are from GM crops grown overseas. Various food ingredients from these crops (e.g. oil, flour, sugar) are used in processed foods, some of which are imported into Australia and New Zealand.

No GM crops have been approved for growing in New Zealand. Since the Hazardous Substances and New Organisms (HSNO) Act came into force for new organisms nearly 30 years ago, only three unconditional releases of GMOs into the environment have been approved. All three approvals were for medical uses.

Some GM crops including canola, cotton and safflower are approved for growing in Australia (by the Office of the Gene Technology Regulator).

THERE ARE CURRENTLY **NINE** GMO CROPS APPROVED BY FSANZ FOR USE AS AN INGREDIENT IN FOOD SOLD IN NEW ZEALAND, INCLUDING VARIETIES OF SOY, WHEAT, POTATOES, CORN AND RICE.

Earlier this year, the Cavendish banana line QCAV-4, genetically modified for resistance to Panama disease (*Fusarium* wilt) at the Queensland University of Technology (QUT), became the first whole GM fruit assessed and approved by FSANZ and the first GM banana approved in the world. The Office of the Gene Technology Regulator in Australia also approved a licence for the commercial cultivation of the banana line. It is the first time GM food safety and plant cultivation licensing assessments have been conducted in parallel in Australia. However, QUT has indicated there are no immediate plans to commercialise the GM banana in Australia as Panama disease is currently contained and effectively managed in the domestic industry. ●

*Organics Aotearoa New Zealand wants the opportunity to directly engage and participate in a proper public consultation on the government's Gene Technology Bill*

# THE ORGANIC VIEW OF GENE TECHNOLOGY

*Conventional growers understand that gene technology is prohibited under global organic standards. However, not everybody understands why the organic sector wants to keep gene technology in the lab – and therefore not available for commercial release for conventional growers in New Zealand.*

*NZGrower & Orchardist* staff

**Brendan Hoare, GE spokesperson from Organics Aotearoa New Zealand (OANZ), wants to improve dialogue with all growers. OANZ doesn't see why the government's proposed Gene Technology Bill should split horticulture into those for and against. What is good for the organic sector might also be good for all New Zealand growers.**

"It's true that outside of organic circles, the organic position is not well understood."

Brendan has an extensive history in the sector nationally and internationally and was closely involved in the long process towards New Zealand's landmark Organic Products and Production Act 2023. Currently OANZ resources are focused on seeing the national standard and regulations developed and in place.

Meanwhile, the government is on a mission to introduce new regulations on gene technology. In August, the government unveiled the direction it was taking and the timeline that lead agency the Ministry of Business, Innovation & Employment (MBIE) is working toward.

Acting as OANZ's spokesperson on gene technology, Brendan says the organisation recognises that the government is delivering on an election promise and welcomes the review of the rules. But he believes the organic sector needs to be part of a proper consultation process. OANZ wants the opportunity to directly engage and participate in the discussions.


*"Bio" or organic produce is becoming high profile at Fruit Logistica. The NZ$245 billion organic global market is the fastest growing multi-food sector in the world. Photo courtesy of Messe Berlin*

"Anyone contributing to New Zealand's export revenue should be welcomed at the table. Given the level of commercial sensitivity to multiple stakeholders, we expect a close engagement with the government. It's not difficult for the government to engage with us. We have a national organisation. The New Zealand organic community is very united."

The organic sector is growing steadily and OANZ reports the revenue for certified organic exports at $580 million, including $70 million in apples and $160 million in kiwifruit.

Brendan says that while organics are a small player within horticulture, New Zealand's current "non-GMO status" (or at least the 30-year effective ban on GMOs) adds a clear point of difference and brings benefits to, not just organic products, but also to New Zealand's conventional brand propositions globally.

This is also the main reason that the Tasmanian government has extended its moratorium on commercial release of GMOs until 2029.

"As an innovative, high value and diverse, entrepreneurial sector, there is a lot for us to absorb, consider and consult on," he says. "What's happening here is happening in many places around the world and all about at the same time. We're still digesting it as a global organic community."

New Zealand is an exporter nation – and that applies to organics too. In fact, Brendan says that New Zealand's organic production has the largest percentage of exports in the world – 60 percent of the almost $1 billion that the sector generates. This is why New Zealand is more vulnerable to reputational damage than other countries who already permit gene technology or are moving in that direction.

OANZ highlights the potential for growth in organics as a major contributor to New Zealand's export revenue.

"The organic global market is the fastest growing multi-food sector in the world as it is valued at over NZ$245 billion annually."

The United States is the world's largest market of organic food, accounting for 43 percent of organic food retail sales in the world. European Union countries like Germany and France are another large market, followed by China which is already an approx. NZ$22 billion organic market and rapidly growing, according to FIBL (The Research Institute of Organic Agriculture) & IFOAM (Organics International) statistics and emerging trends 2024.

"I've just come back from China," Brendan says. "New Zealand is the only country in the world with an organic equivalency agreement with China. We have a huge market advantage there. Given the progress on organic regulation and the value in leveraging a non-GMO position right across New Zealand's primary sector, any regulatory change should continue to protect these national advantages in a competitive world."

He says New Zealand horticulture's value chain proposition is focused around truth, trust, authenticity and demonstrability. Whether developing that proposition as an organic or a conventional product, growers bank off the same brand New Zealand promise to consumers in the same markets.

"Any change to the promise is a real risk."

Brendan believes the horticulture sector has too much to lose by rushing into environmental release of gene technology. The sector needs to first understand the dynamics of its country-of-origin branding and its non-GMO status in a rapidly changing marketplace.

Authenticity includes naturalness as well as communicating New Zealand's world-leading on-farm sustainable practices as part of the primary sector's wider story.

"We also have to understand what digital has done and is doing. Particularly with horticulture, trade has become really sophisticated. The customer has never been closer… Buyers want a direct relationship with growers. Buyers are looking for provenance. They are taking that growing experience to the market.

However, technology will change how things are authenticated. Brendan says there is a rapid push toward real time measurement and instant traceability. Markets will demand it. Just like spray drift on crops and pesticide in honey, pollen drift from genetically engineered crops can cross-pollinate with organic crops, potentially leading to genetic contamination. This can lead to them losing their organic status if the test is positive. With isotope and PCR (polymerase chain reaction) testing becoming more prevalent, this could become a major problem for all New Zealand horticulture exports.

> **"The government has not invested in understanding the value of New Zealand's non-GMO status**

OANZ believes more work should be done to carefully evaluate the potential returns from gene technology in agriculture with the potential returns from New Zealand's non-GMO producer status. The organisation cautions against the expectation that gene technology will bring any quick wins for growers.

"I hear the Minister saying that there will be a market for GMO products. Where is the demand? Show us. What is the case for growers? What's the actual economic case for scenarios like rapid-flowering apple trees? I don't know. Producers and consumers would genuinely like to see that."

He also questions assertions that the regulations will be used to develop environmentally friendly varieties. Looking at the Australian Office of the Gene Technology Regulator,

**NEW ZEALAND'S ORGANIC PRODUCTION HAS THE LARGEST PERCENTAGE OF EXPORTS IN THE WORLD – 60 PERCENT OF THE ALMOST $1 BILLION THAT THE SECTOR GENERATES**

of the 22 current agricultural commercial licences for Dealings involving an Intentional Release of GMOs into the environment, 16 are for herbicide tolerant varieties.

"I think it's fast and shallow and I don't understand the vision forward. I think it's not respectful to growers. These are people who have invested their whole lives and their livelihoods in these markets."

Food systems take time to change, but brand reputations can be destroyed overnight.

"The government has not invested in understanding the value of New Zealand's non-GMO status. Let's get some real data. Let's get New Zealand Trade and Enterprise involved to do some rigorous work to find out what's happening in our markets. Let's understand what we do well and what we do better than other countries. Let's listen to our customers before ramrodding new regulations in place." ●

*Growing Change appointed advisors receiving nutrient management training at Pukekohe demonstration farm, Cronin Road, Pukekohe (2024)*

# GROWING CHANGE PROJECT UPDATES

*The Growing Change project helps growers to navigate the government's regulations that address the decline in New Zealand's freshwater quality. The project aims to build capacity and capability within the horticulture sector, and enduring support for growers.*

**Rowena Bennett**
**Growing Change project manager**

**Growing Change is a three-year collaborative project between Horticulture New Zealand and the Ministry for the Environment and is entering its final year with a focus to launch a microcredential training programme and complete ongoing catchment projects.**

The microcredential training programme is a crucial component and deliverable of the project. This programme is designed to educate growers, horticulture advisors and auditors on managing freshwater risks. Developed in partnership with Muka Tangata, the People, Food and Fibre Workforce Development Council, the microcredential ensures that the skills standards and learning outcomes are aligned with industry environmental codes of practice. Primary ITO and Fruition Horticulture are also integral to the development of the programme, contributing to the creation of study materials and learner resources.

There are ten Growing Change Catchment Projects, each with its own unique freshwater challenges. The catchment projects support growers through a network of advisors and technical specialists across ten selected regions, in completing the NZGAP EMS (Good Agricultural Practice Environment Management System) Add-on for GAP certified fruit and vegetable growers. The EMS is a tool to assist growers in meeting freshwater farm plan regulatory requirements.

Noteworthy successes include the completion of Waimea, Manawatū and Auckland-Waikato Catchment Projects. These efforts have led to a significant increase of growers completing NZGAP Freshwater Farm Plans (FWFP), covering nearly 14,000 hectares of productive horticulture land.

*Effective sediment retention pond (silt trap) – Tuakau, Waikato (2024)*

*Growing Change grower meeting held in Pukekohe introducing the Auckland-Waikato catchment project (2023)*

Additionally, there has been an average six-fold increase of audit-ready NZGAP FWFPs across these completed regions.

Ongoing projects include the Selwyn and Clutha catchments, with final catchment projects launched in Northland, Gisborne, Hawke's Bay and Bay of Plenty.

High levels of grower participation and early adoption within the Growing Change project provides a more complete picture of freshwater risk management practices within the catchment/s and wider industry. It also demonstrates strong support for the NZGAP audit and certification process as an efficient and effective way of meeting freshwater farm plan requirements. Together, this strengthens the case for the EMS and Industry Assurance Programmes as a recognised pathway in achieving freshwater compliance.

**Mark Shelly**
**Regional extension officer**

**Waimea Catchment Project**

The Waimea Plains project was completed at the end of July 2024. Project funding covered a suite of technical maps for each property and one-on-one advisor support from Mike Nelson of Fruition Horticulture. Growers saw real value in the support provided to prepare and meet their Freshwater Farm Plan regulatory requirements.

Of the project, one grower wrote: "Thank you very much for providing the funding to allow us to have (our advisor's) assistance to create our EMS. My initial look at what was required made me throw up my hands in horror, but Mike soon had me settled down and made the task bearable. He had a really good understanding of what was required."

**Clutha Catchment Project**

The Clutha Mata-Au project is being run in two phases. In both phases, advisor support is being provided by Jason Cochrane and Ayla Meikle of Landpro and independent consultant Alex Huffadine. The first phase closed in July, phase 2 is underway, and the catchment project is scheduled to be completed by April 2025.

**Selwyn Catchment Project**

The Ballance Agri-Nutrients farm sustainability team in Ashburton are providing advisor support to the dozen registered Selwyn Catchment Project growers. In addition to supporting growers in completing EMS add-ons, the Growing Change Project organises and facilitates workshops for growers focused on freshwater risk management. A workshop introducing Selwyn vegetable growers to the Sustainable Vegetables Systems tool (a tool which assists growers in making nutrient application decisions) is scheduled to take place at Plant and Food Research, Lincoln on 18 September.

*Potato crop growing in Ohakune (2024)*

**Arjune Dahya**
**Regional extension officer**

### Auckland-Waikato Catchment Project

The Auckland-Waikato catchment project provided comprehensive support for growers operating across the Auckland and Waikato regions. With growers already implementing on-farm practices across their operations, utilising the NZGAP EMS Add-on was hassle-free and a positive outcome for growers. The timeframe for this project was extended to accommodate additional growers seeking advisory support.

Growers were given the opportunity to work with Growing Change appointed advisors who specialise in compliance, technical advisory and environmental consultancy. Providing growers with the opportunity to extend their business network with local advisors has bridged gaps in capacity and capability, creating pathways for future services.

Regional meetings and workshops were well attended by growers and stakeholders both in person and online, which focused on various topic discussions with regional councils and industry and the introduction of the vegetable sector's nutrient management SVS (Sustainable Vegetable Systems) Tool.

### Manawatū Catchment Project

The Manawatū catchment project provided extensive support to both commercial fruit and vegetable growers operating across the region. Key growing areas including Ohakune, Rangitikei, Bulls, Palmerston North, Opiki and Levin were supported and experienced increased grower uptake of the NZGAP EMS Add-on, placing growers in a proactive position to meeti regional freshwater farm plan requirements.

Various engagement activities with growers across the region were initiated throughout the duration of the project. Grower site visits by the Growing Change team were beneficial in connecting directly with growers on the ground. Regional meetings and workshops were also held in Ohakune, Opiki and Levin, which were well supported by growers and industry representatives.

The events were in collaboration with Agrilink NZ, NZGAP and Horticulture New Zealand Environmental Policy. The events were well attended by growers and stakeholders engaging in various topics relating to on-farm freshwater management, nutrients and other on-farm activities carried out across various parts of the Manawatū region.

For growers seeking additional support, please contact your Regional Extension Officer:

- Arjune Dahya (Northland, Auckland, Waikato, Gisborne, Hawke's Bay) **Arjune.dahya@hortnz.co.nz**
- Nat Bond (Bay of Plenty) **Nat.bond@hortnz.co.nz**
- Mark Shelly (Tasman, Canterbury, Otago) **Mark.shelly@hortnz.co.nz**

*A 'biodiversity pod' in a lettuce crop. Photo by Olivia Prouse, A Lighter Touch biodiversity vegetable project*

10 TIPS

# TEN TIPS FOR YOUR FIELD TRIALS

*Public and private investment into science, research and innovation within the primary sector continues at pace as our industry works to maintain competitiveness on the global stage, improve profitability in a challenging environment and gain momentum on sustainability practices.*

Tayah Ryan : Lighthouse Horticulture

**The global adoption rate of new tools and technologies by growers and farmers is variable and often low, with challenges around complexity, unclear value propositions, up-front investment, and risk.**[1]

Grower-led trials are considered a crucial part of the development and adoption process, offering opportunities to test new technologies and practices in a commercial setting, often at larger scale than what is possible in the initial research phase. It is where the nuts and bolts get ironed out and traction begins. In an ideal world, grower-led trials should be considered a shared responsibility between growers, researchers, private sector and industry and invested in as such. This article highlights some considerations for growers.

## 1. Be selective

When faced with countless opportunities, being selective in what you agree to trial is important. It is far better to trial one thing well than try to tackle too much at once and not get anything meaningful out the other end. How much research or testing has been done up to this point? How confident are we in this technology or practice doing what it is meant to do and returning the desired outcomes? What is the opportunity and risk associated with doing this trial, and can that risk be managed appropriately?

Your industry body may also aid your mission. It is worth asking the question whether additional support is available for you as a trialist – this may be in the form of advice, resource or grants depending on what is being trialled and your specific industry.

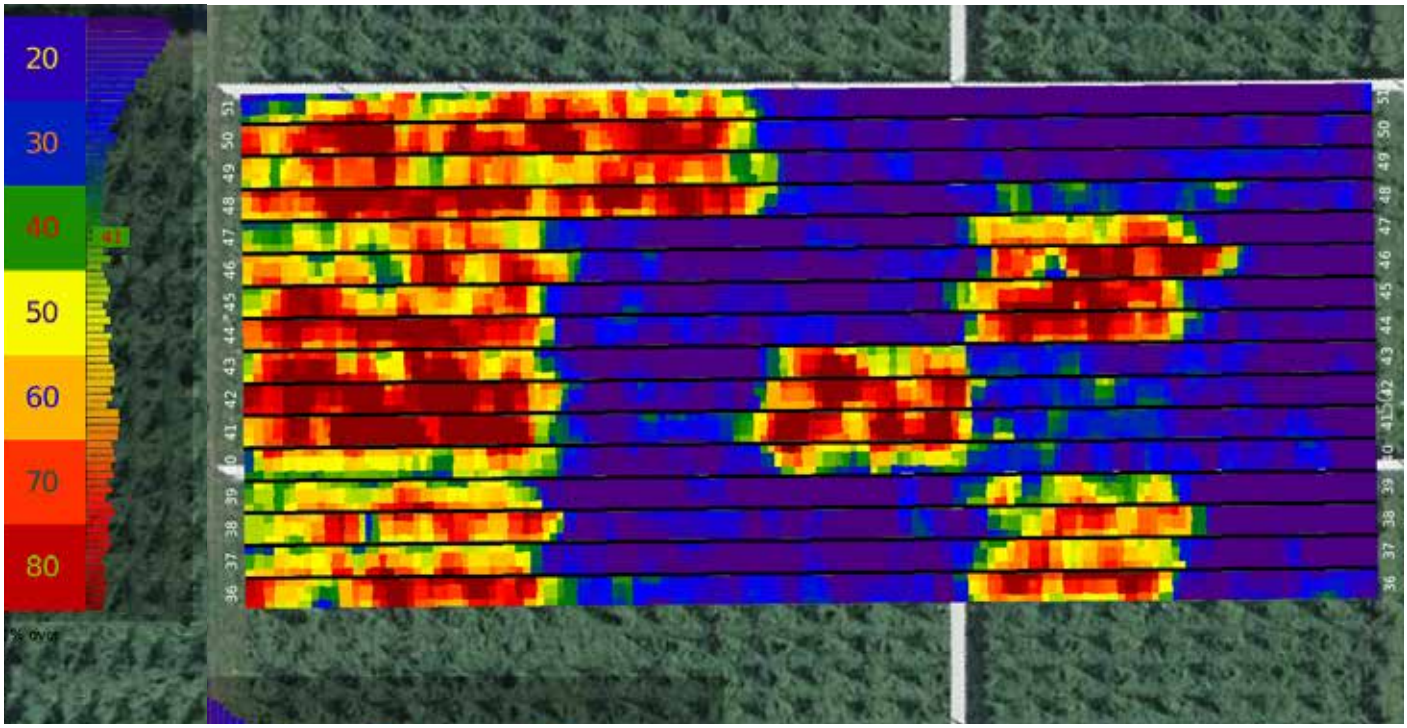



***Figure 1**: Fruit density scan (from Fruitometry) from a grower-led trial in kiwifruit as part of a Zespri Innovation Project*

## 2. Break it down to build it up

The evidence is clear – as the complexity of innovations increases, the adoption rates decrease.[2] So how do we tackle things that are complex but appealing? Where do you start? In these situations, acknowledging up front that an innovation or change is complex alters mindset in terms of what success looks like. It encourages longer term thinking with steady progress rather than quick wins and answers. 'Breaking it down' simply means to pick something and start with it, with the aim to run the trial, bank the knowledge and build on learnings season to season. For example, optimising the use of one promising alternative product within a conventional spray programme, rather than attempting a complete system change in one season.

**EMBRACE COLLABORATION:**
CREATE A NETWORK OF TRIALISTS THAT SHARE THEIR LEARNINGS

## 3. Field trial design

Complicated designs suggested by well-meaning scientists can often put people off trialling anything. There is typically a balance here – grower-led trials need to be practical, achievable with the resources available but also achieve meaningful outcomes. It also assumes, importantly, that we are starting from an existing knowledge base – the grower will be guided by the principles and learnings emerging from the research but will often end up adapting the technology to fit their operation.

## 4. Make a plan

When you have made the call to go ahead, spending some time up front forming a brief project plan can be useful. This does not have to be complex, but outlining a bit about the what, the how and most importantly **who** will do the work should be a focus. It is fairly common for enthusiasm to wane as operational pressures come on, so building assessments into the season plan is more likely to yield the outcomes you desire.

Every good trial should have a hypothesis – what do we think or hope will happen? The trial is then designed to test that hypothesis. It is important to be realistic – will cover crops result in significant, measurable changes in soil quality in a single season? It is possible but unlikely – some changes take time and we might be waiting years before we see measurable differences. This is not necessarily an issue but does require a 'realistic mindset' and longer-term thinking. We also live and work in a biological system and at the hands of Mother Nature. What works well in a wet season may not be as effective as in a drought. At least a couple of seasons of data and learnings are typically required to form a more complete view of something.

## 5. Make it visible

Getting everyone on the same page, from the manager to the spray operator to the person pulling weeds, will always lead to better outcomes (and less screw ups!) than a random

trial in the back of a block that no-one knows anything about. The block closest to the office is often a good location. It is also a great way to get staff excited about and interested in what's happening, particularly if the concepts are challenging or different from what they are used to.


### 6. Fair and equal test

Biological systems are rarely uniform and crops are no different. The 'edge effect' of blocks is a great example. Plant health and productivity, pest and disease pressure, exposure to weather, shelter belts and other factors create inherent variation. Applying one treatment along the edge of a block may be convenient, but it is not a fair and equal test if we compare it to another treatment applied to the rest of a block.

### 7. Replication

Replication is essentially applying the same treatment, randomly, to several different plots so that true statistical differences can be detected between treatments. In its simplest form, it means we are conducting the same test on several areas and seeing if we get the same result. Typically, the smaller the differences you are expecting between treatments, the greater the number of replicates required to achieve significant differences.

For those that have visited research sites with complex patterns of small plots, you might be forgiven to writing this off as too hard, but there are several ways we can incorporate the foundation of replication into our trials. If our risk analysis suggests a low or manageable level with the new tool, then we could test our treatments across multiple blocks (for example, a split block with two treatments, replicated across three different blocks). You could also consider partnering with your neighbour, or other collaboration partner interested in adopting similar things, and run one replicate or block each.

### 8. Technology and precision ag from a trial perspective

The amount of data and information being captured on an operational basis is ever increasing as we look towards a precision approach to growing. This has the potential to serve us well as an industry as we seek to trial innovative solutions to our unique challenges. It also offers opportunities to increase our observations or data points within trials without the heavy reliance on people resource.

The digital crop load scan in Figure 1 is a great example of this in action. This was a grower-led trial in kiwifruit (supported through a Zespri Innovation Project) whereby new products were being trialled in a replicated 'large plot' set-up applied with a commercial sprayer. The heat map shows fruit density results – spot the ineffective plots!

### 9. Embrace collaboration

Consider closely the ecosystem around the innovation or practice – are other growers trialling the same thing? Creating a network of trialists that share their learnings (and failures) along the way increases the rate of learning and leads to a richer experience for everyone involved. In an ideal world, this would be actively facilitated (e.g. industry field days) but can be developed separately outside of this setting if that's not an option – either way, the benefits stand true.

### 10. Record the outcome

Too often, innovative trials are initiated but those involved fail to record the outcome. Outcomes (positive or negative) should incorporate data and results where appropriate and a summary of lessons learned. ●

1. Voice of the US farmer 2023-24: Farmers seek path to scale sustainably (2024). Mckinsey and Company.
2. Social principles for agricultural extension in facilitating the adoption of new practices. Frank Vanclay. In Changing Land Management.


*Peter Schreurs & Sons south of Melbourne "hardly apply any nitrogen now" on their 420-acre farm*

# 'ALWAYS CHANGING, ALWAYS EVOLVING'

*Vegetable growing in Victoria, Australia is "always changing, always evolving," says Butler Market Gardens chief executive officer, Rick Butler.*

Andrew Bristol : Vegetables NZ communications manager

**"I'm a sixth-generation grower and I am making decisions for generations seven and eight," says Rick.**

"Our family has been growing for more than 110 years, and we have been supplying the major supermarkets directly for more than 50 years, every day of the year.

"I bought the business off my parents in 2015 and since then, have developed the Butler Gourmet Pantry brand, packaging herbs in punnets and sleeves."

Rick showed a bus load of delegates around his herb growing operation – situated near Mornington Peninsula, about 45km south of Melbourne – as part of the Hort Connections conference in early June.

"This site used to be used for growing flowers," says Rick. "Being so close to Melbourne means our herbs can be with consumers in less than 24 hours from harvest, as we are about 40 minutes away from major distribution centres."

Rick's business is big enough – delegates saw acres of basil, mint and thyme being grown predominantly under full cover – to negotiate directly with supermarkets.

"I negotiate a standard price for six months, but within that there can be further negotiation if there's an issue elsewhere in the supply chain, for example. On a Tuesday I finetune orders, and on a Monday I get paid for the last week's orders.

*Mark Schreurs employs 50-60 people with a low staff turnover*

*Butler Market Gardens negotiates a six month price directly with supermarkets*

"I am able to employ people who live close by – most are just ten minutes away. These people like working here because they don't have far to travel and there's a real sense of community. Most are from families who immigrated to Australia from Vietnam or Cambodia in the 1980s and '90s. My staff turnover is very low, and I do not employ anyone through a third party."

Rick heats his fully enclosed greenhouses for four to five months of the year, using a biomass boiler burning wood waste from CHEP. "If the plants are too comfortable, shelf life is limited due to shock. As a result, I grow mint more or less outdoors."

### 'Growing's a lot of bloody fun. That's what keeps you going.'

As part of the bus trip, delegates visited Peter Schreurs & Sons, also on the Mornington Peninsula.

This 420-acre, predominantly leek and lettuce growing operation was established by Peter Schreurs in 1964. The business directly employs 50 to 60 local people, and enjoys low staff turnover.

"We've gone out of our way to eliminate crappy jobs like harvesting leeks in the wet and mud in the field. Our focus is to get the product into the packhouse as soon as possible," says Mark Schreurs.

"We've developed our own leek as well as lettuce harvesting machines. We're on the fourth iteration of our leek machine, which is operated by one person, however, it is that person that makes this machine. Their role is to ensure it is functioning properly, but not to drive it, at least in the rows."

Peter Schreurs & Sons is a great proponent of integrated pest management.

"We encourage life. We don't discourage it," says Mark. "We build on the biology and not the chemistry, as once the biology is active, it looks after itself.

"We have divided the farm into 30-acre blocks, surrounded by native plants, which provide shelter as well as homes for the beneficials. If we have a problem in one block, our approach is to leave things to nature and then put the block in a cover crop.

> **"We've gone out of our way to eliminate crappy jobs like harvesting leeks in the wet and mud in the field**

"On each block, we grow two cash crops a year. For the rest of the time, the block is in a cover crop. Our focus is on sustainability and guardianship – ensuring we leave this land in a better place. Our crops do better by not putting so much onto them. For example, we hardly apply any nitrogen now, relying on cover crops and composting, which we've done for 15 years. We also now use less water."

Mark sums up the family's philosophy by saying, "Growing's a lot of fun. That's what keeps you going." ●

*If any work is required within the tunnel at Greengrower, hospital level hygiene is used!*

# HAMILTON'S **PLANT FACTORY**

*For* NZGrower & Orchardist, *MIKE NICHOLS was shown around the Greengrower plant factory in Hamilton by former Massey University horticulturist Dr Huub Kerckhoffs, Greengrower's head of research.*

**Is Greengrower, in Hamilton, the future face of horticulture? Only time will tell, but the forward-looking innovation of Greengrower chief executive Tom Schuyt is certainly a wake-up call for the New Zealand horticultural industry.**

The choice of Hamilton as the growing site is logical as half of the New Zealand population lives north of Taupo. Tom told me he has plans in the future to establish a similar operation near Christchurch, and another in Australia possibly near Sydney.

In 2020 Greengrower approached the Waikato Innovation Park team to build the 6200m$^2$ custom designed facility. It may appear to be a relatively small building, but it is capable of supplying a similar quantity of cut fresh greens as 150 ha of field-grown product due to the 13 layers of crop grown, and critically the fact that the plants receive the optimum growing environment during their life. There is no winter or summer in the vertical farm. In addition (and critically) the crops are grown without using any pesticides, and the growing system is hydroponic, so the produce at harvest is free from soil, and requires no washing before being packaged for sale. In fact it is so dry that a small amount of sterile water must be sprayed on it at harvest to package it easily.

> **"The 6200m$^2$ custom designed facility is capable of supplying a similar quantity of cut fresh greens as 150 ha of field-grown product**

Currently Greengrower produces what is best defined as cut fresh greens, which includes a range of lettuces, spinach, brassicas and herbs. In New Zealand this type of product was pioneered by a Massey University horticultural student, Ashley Berrysmith, who brought the concept

back to New Zealand and established a market (through his company Snap Fresh Foods) for prewashed baby leafy greens using a 'from seed to plate' philosophy. For this he was awarded the Ernst & Young NZ Entrepreneur of the Year Award in 2007.

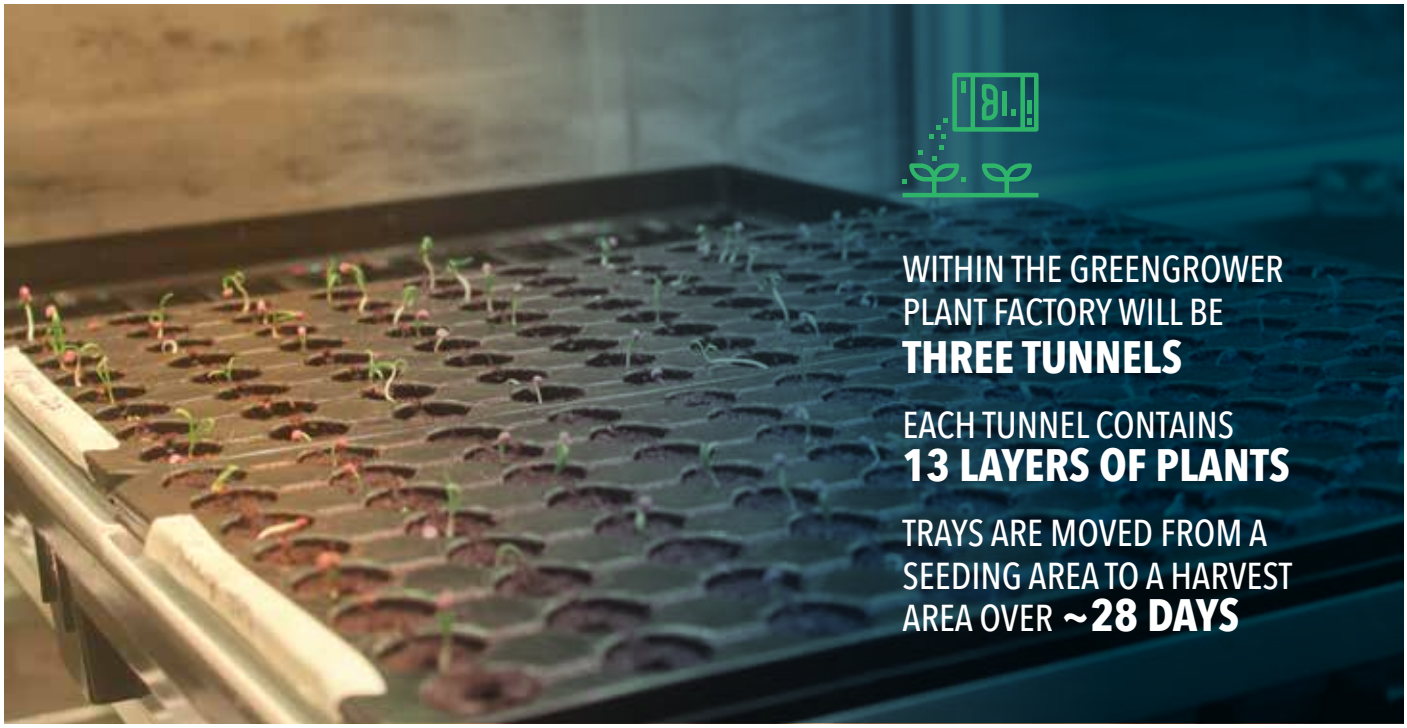
The Greengrower system differs totally from the normal production of cut fresh vegetables, which are conventionally grown in the field or in large plastic greenhouses in soil.

Within the Greengrower plant factory will be three tunnels. Currently one tunnel is in operation, and two others are under construction. Each tunnel contains 13 layers of plants in large cell trays, and the trays are moved steadily from a seeding area to a harvest area over a period of about 28 days.

The seeding is done automatically using a conventional air sower, which places a single seed into each specially developed coir 'glue plug' in a high-density cell tray.

These trays are then transferred automatically to the germination chamber, and on emergence to a small growing on area. When the plants are large enough (and just before they start to shade each other), they are robotically transferred plant by plant into similar cell trays, but at a lower plant density at their final spacing.

*The third tunnel is now under construction*




*Germinating spinach in a module*

The environment in the tunnels is computer controlled for temperature, $CO_2$ level, humidity, and of course light levels, namely duration, intensity and wavelength. Air speed and humidity are also controlled to avoid tip burn of sensitive plants such as lettuce. Water comes from the Hamilton town supply, and prior to use is treated with ozone to eliminate any pathogens.

The hydroponic nutrients are then added to the water using the classical A and B solutions (water-soluble granular (A) and water-soluble powder (B) plant food that contains nitrogen, calcium, iron and other trace elements). The pH (acidity/alkalinity) of the solution is adjusted with phosphoric acid. There is minimal loss of water from the system, as the only water leaving the factory is within the product, as the water vapour in the air is condensed, and returned to the hydroponic system in the nutrient mixing tank. The recirculating hydroponic solution is treated every cycle by ozone and/or Ultraviolet B light to ensure a pest and disease-free solution.

The $CO_2$ in the air is supplemented, and the relative humidity is controlled.

Field or greenhouse grown cut fresh is harvest by a mower, and must be washed several times to ensure any agrichemicals and soil are removed. It then must be spun dry.

In the case of the Greengrower product as it is grown hydroponically and in a sterile environment where no agrichemicals are used it is not necessary to wash it before packaging. The product therefore has a much longer shelf life.

Of course the technology of Greengrower is of international origin. Much of it comes from Elevate Farms in Ontario, Canada and from Finland. Both countries with extremely cold winters. In fact much of the Canadian technology was developed at the University of Guelph, where I spent a year as a visiting professor in 1971, well before plant factories were a serious development, though all the teaching plants for Plant Science were grown in large rooms under fluorescent lights.

> **“ The key greenhouse crops such as tomato, cucumber and capsicum are more complex to produce**

There is of course, a limit to how much cut fresh salad New Zealand can consume, and alternative crops are a little problematical. The key greenhouse crops such as tomato, cucumber and capsicum are more complex to produce. Maybe year-round berryfruit production will be next. (There is already a strawberry plant factory at Foxton (26 Seasons) in converted carpet factory premises). My choice would be cherries, where the huge advantage of being able to control temperature would be a major plus in terms of obtaining possibly as many as three or even four crops per calendar year, simply by controlling the winter dormancy. Modern cherry dwarf rootstocks and training systems would mean that large numbers of trees could be grown in a very small plant factory! ●

# LEADING THE WAY IN **SUSTAINABLE PACKAGING**

*In August a Sustainability Summit hosted by United Fresh, in partnership with the International Fresh Produce Association (IFPA), was marked by thought-provoking discussions, innovative solutions and a shared commitment to advancing sustainability within the fresh fruit and vegetable sector.*

**A central theme of the standout "Packaging, Global Trends and Innovation" panel discussion was the evolving landscape of packaging materials. The panel brought together Tony Sayle, managing director of Jenkins Freshpac Systems; Rachel Depree, executive officer for sustainability at Zespri International; and Sandy Botterill, head of environmental social governance at Foodstuffs NZ. The session was expertly moderated by Tamara Muruetagoiena, vice president of sustainability at IFPA.**

*The "Packaging, Global Trends and Innovation" panel*

One of the key trends discussed was the increasing use of recycled PET (polyethylene terephthalate) referred to as r-PET. Often r-PET has been used to augment the use of virgin PET in packaging.

In New Zealand, as with other countries, some manufacturers still incorporate a thin overlayer of virgin PET in their trays to meet stringent food contact regulations. This approach means that the trays are not made entirely from recycled material, reducing the overall sustainability impact.

> **"Conversation also touched on the impending ban on non-home-compostable fruit labels, set to take effect in July 2025.**

A number of European manufacturers have invested in advanced 'super cleaning' systems that allow for the production of 100 percent r-PET trays suitable for direct food contact. These systems involve more rigorous decontamination processes that exceed the required standards, making it possible to produce trays that are not only fully recycled but also safe for fresh produce.

This material supports a closed-loop system, significantly extending the lifecycle of plastic and mitigating the environmental impact of disposal.

Another innovative solution highlighted was the introduction of palm fibre trays, a type of agro fibre (home compostable, biodegradable and kerbside recyclable). This packaging utilises the empty fruit bunches (EFB), sourced from sustainably managed palm plantations, along with kraft paper (30 percent agro fibre and 70 percent kraft paper).

The panel underscored the importance of adhering to the principles of Reduce, Reuse and Recycle. These strategies are vital in reducing waste, conserving natural resources and minimising energy consumption.

Moreover, the panel emphasised that the end-of-life stage for packaging must be considered in tandem with new packaging developments. Compliance with rapidly changing international standards remains a critical factor in packaging design and implementation.

Zespri International shared insights into their strategic approach to packaging, describing it as their "shop window", a crucial interface for branding, food safety and ensuring high quality kiwifruit.

Zespri's sustainable packaging initiatives are driven by global regulatory, customer or shopper expectations, with varying demands across different markets shaping their approach.

The conversation also touched on the New Zealand government's impending ban on non-home-compostable fruit labels, set to take effect in July 2025. The industry remains optimistic, with ongoing efforts to develop a fully home-compostable label, including adhesive, anticipated to bear fruit by next year. ●

# FARMLANDS HORTICULTURE BUILDING BACK BETTER

*The nationwide rollout of the Farmlands Horticulture brand shows a renewed focus on horticulture across the co-operative – backing up Farmlands' vision of being the go-to for everyone connected to our land.*

The first piece of a complex puzzle has been to provide increased horticulture support in Hawke's Bay. Chris Binns, Head of Sales & Strategy – Horticulture at Farmlands, says the Bay is a key region for the co-operative as it signals a refreshed offering for the horticulture sector. "For Farmlands to have a national horticulture presence, we have to be a major player in Hawke's Bay. That really comes back to Farmlands' policy of being the go-to for everyone connected to our land. If that's our mantra, then we've got to live and breathe it, and that means being everything for horticulture as well."

"Horticulture is not just a box to tick; it's one of the major pieces of New Zealand's primary industries, so we have to give it renewed support and offer a high level of service nationwide. We do horticulture very well in the Bay of Plenty, and we are having some real growth in places like Northland, but we need to make sure that we are investing in capability right across the country, and Hawke's Bay is the next big piece of that puzzle."

To support horticulture in Hawke's Bay, Farmlands has opened a new dedicated 'Horticulture Hub' in Hastings, which Chris says will serve several important functions. "Our growers will be able to come in, they'll be able to see somebody there. It will be a base for our expanding team of technical advisers, and our supply chain will be smoother as it will also be a distribution centre for agrichemicals and for horticulture. You will still be able to come and pick stuff up, which will be perfect. It will have a sales operation, so it will be a little bit different to a standard distribution centre."

Chris says with the horticulture sector becoming increasingly sophisticated and tech-focused, Farmlands needs to ensure it has an offering fit for the modern-day grower, and this not only ties in with Farmlands' new ordering tool FarmlandsPRO, but the new regional hub system the co-operative is implementing in its supply chain to improve efficiency. "There's a combination of so many things: not only technology changing on-farm, but it's about how we best support our customers' needs, in the most cost-effective way."


*Chris Binns, Farmlands Head of Sales and Strategy – Horticulture*

"Part of that is operating better from within a hort hub, a regional hub like this, and having our transport and supply chain capabilities in the right place, whether that's to a grower through us from a supplier, or supplier direct to grower, or importing products from offshore to our regional hubs. The one bit that doesn't change is our shareholders' reliance on the technical expertise of our people. That will always remain there." ●


Find out more about the people who make the new Farmlands Horticulture brand tick at **www.farmlands.co.nz/products_and_services/horticulture.html**

Farmlands | Horticulture

# TRANSFORM YOUR ORCHARD MANAGEMENT WITH THE SENTEK DRILL & DROP™ PROBE AND IOT DTU™

*In the dynamic world of horticulture, managing soil moisture is crucial. It impacts plant health, water usage, overall crop yield, and the environment.*

Many methods of soil moisture monitoring often fall short, providing limited data that doesn't capture the complexities of soil and plant behaviour. Enter Sentek Technology's Drill & Drop Probe with new IoT Data Transmission Unit (DTU)™ – combines 30 years' experience in soil moisture monitoring that brings continuous, real-time insights to your fingertips, easier than ever!

## You can't manage what you can't measure

It's no secret – soil moisture is a vital component for plant growth and soil health. It influences various soil functions, including nutrient availability, microbial activity, and plant water uptake. Not enough and yields are impacted, soil organisms wane, plants become weak and may even die. Too much moisture and plant functions are compromised, nutrients may be leached, fungal problems may develop, waterlogged roots can suffocate and die. By monitoring soil moisture, growers can make **informed decisions** that optimise crop production, conserve water, and protect natural resources.

However, sporadic or single-depth monitoring doesn't provide a complete picture. Do you know the depth your irrigation applications reach in comparison to your plant's active root zone? Continuous monitoring throughout the soil profile is essential to understand how water moves through the soil, where the plant's active root zone is, daily plant water use, and the effectiveness of irrigation applications.

For example, at the point of which a kiwifruit vine shows visible signs of water-deficit stress, the vine has already been stressed for up 10 days. If this occurs during the fruit growth phase, final fruit size will be irreversibly impacted. Real-time, continuous monitoring using Sentek Drill & Drop™ probes enables you to put your eyes underground for timely, **pre-emptive identification of plant stress** and crop water use.

## Sentek Drill & Drop™ Probe with IoT DTU™

The Drill & Drop™ Probe is now available with the new IoT DTU™, providing continuous data at your fingertips, anywhere in the world. This innovative DTU combines the latest low-power cellular technology with Sentek's advanced sensors (TriSCAN™ optional), installed in 10 cm increments down the length of the probe. This enables soil moisture, temperature, and optional salinity data to be captured throughout the soil profile, at depths up to 120 cm.

> "Continuous monitoring throughout the soil profile is essential

The IoT DTU™ improves efficiency by combining a solar panel, antenna, and modem into an all-inclusive, slimline unit. The self-sustaining system ensures continuous data transmission without the need for an external power source or manual intervention, enabling busy growers to focus their time on other key tasks. The IoT DTU™ transmits real-time data to IrriMAX Live™, the cloud-based platform where you can view your data anywhere you have internet access.

Unlock your orchard's potential with the Drill & Drop™ Probe with IoT DTU™ for continuous, real-time soil moisture monitoring.

Sentek probes are available nationwide.
Contact **Sentek@fruition.net.nz** for more information.

FRUITION Horticulture

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