

NZGROWER & The ORCHARDIST®

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HORTICULTURE NEW ZEALAND

CONVERTING IDEAL LAND TO HORT

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Ben Scott at Scottfresh's coastal block in North Canterbury. See page 13. Photo by Tony Benny.

A ROSE BY ANY OTHER NAME WOULD SMELL AS SWEET?

Incoming Horticulture New Zealand board chair Bernadine Guilleux pens this month's column, painting the path forward for the HortNZ board.

By Bernadine Guilleux : Incoming HortNZ chair

As the Horticulture New Zealand Board prepares for a change in leadership when current chair Barry O'Neil steps down next March, I indicate to you that we will maintain a clear focus on the following key areas over the next 18 months:

- Empowering our new chief executive to lead as we come head-to-head with a rapidly moving regulatory space. Of note, the consultation on gene technology is going to be an important social science matter and the public will be looking to horticulture for expert guidance as they make their minds up about how New Zealand advances in this space.
- While Resource Management Act (RMA) reform seems on paper to be favourable for primary production, the devil is in the detail, particularly with regards to the future of commercial vegetable production, and we need to be prepared to advocate strongly within this nuanced space.
- Water storage, water storage, water storage. What this looks like across the country varies, and so we are intent on enabling the team to get the best outcomes for growers in their respective regions.

In the area of governance, the board plan to:

- Come to the Annual General Meeting in 2025 with clear, acceptable changes to our constitution so that we don't spend too much time internal politicking in Wellington amongst product groups, at the expense of growers.
- Achieve a desirable outcome for growers on industry collaboration. While growers have always asked for limited duplication, when push comes to shove many do still hang on to the status quo.



Being bold to set the industry up for future success will require unwavering commitment to our true north principles as we move through this.

- Support NZGAP (Good Agricultural Practice) as it navigates the evolving Food Industry Assurance environment. The programme has been a forerunner for growers, but as the rest of the food sector recognise the enormous potential behind a strong provenance-led (Country of Origin) assurance scheme, we need to be ready and agile to ensure our growers and our markets maintain confidence in the system.

When it comes to more subtle governance matters, the change in leadership provides the opportunity to re-question the way we do things, making ourselves open to change, failing fast and taking the learnings to keep moving forward. The HortNZ board are seeing things within our sphere of influence that are not necessarily broken but feel outdated and it seems the opportune time to tackle these now.

An example of this is the magazine you have in front of you. It has evolved through trialling new formats over the past few issues and has been met with ready acceptance. One would wonder if the timing was simply right, or that any hesitation (which there was) for the concept quickly dissipated when new formats were trialled in print. Our next step is to consult and decide on the future format/s going forward, including naming. So, growers to your pens - if we were to join fruit and vegetable content into one publication, what name would you suggest? As we already have two existing names, to keep things simple, the logic could otherwise be to use one of them. Since "grower" represents all of us, "NZGrower" would make sense?

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Please share your thoughts and suggestions by scanning the QR code on this page and completing the online form by **14 November**. Feel free to contact me directly if you have any questions or comments about this (or anything else mentioned in this article).

The other name up for evolving is the interchangeable use of *President* and *Chair* for the chief governing officer of Horticulture New Zealand. As articulated by Sport New Zealand in a recent paper regarding governance structures for their society, the role of *President* is said to be a *ceremonial* role while the *Chair* role holds accountability for the actual functioning of the Board of Directors.

“

I have faith in the collective wisdom that can be achieved around a table of committed, forward thinking people



This clear delineation of the tasks behind these names for me reflects evolution in the governance space - the increasingly diverse profiles of board members, governors who are at varying stages of their careers, belonging to varying types of organisations, along with questions as to the need for *ceremony* within incorporated societies. My sense is that the use of *Chair* is more modern and in line with how I view the responsibilities in front of me. That said, I welcome any feedback or thoughts from growers on the role of a ceremonial *President* within this society, if we deem it still relevant for our industry and specifically this organisation and if so, how it should be filled.

Finally, as I look to what is ahead, I actively encourage growers who have very strong thoughts or interest in the future of industry organisations to put themselves forward for the HortNZ Board when elections are held in May next year. I have faith in the collective wisdom that can be achieved around a table of committed, forward thinking people. So, if there was ever a moment you thought about standing for an industry organisation, there really is no better time than the present. ●

HAVE YOUR SAY



Contact Bernadine via
[www.hortnz.co.nz/about-us/
board-members/bernadine](http://www.hortnz.co.nz/about-us/board-members/bernadine)

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the magazine masthead

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Accepting the President's Trophy at the annual industry conference gala dinner this year

CENTRAL ORCHARDIST RECEIVES PRESIDENT'S TROPHY

Kris Robb lives and breathes fruit growing, and when you get him amongst a row of cherry blossoms in the Cravo grow house at Earnscliffe, his passion is evident.

Aimee Wilson

The Clyde Orchards manager's dedication to the industry was recently recognised by Horticulture New Zealand when he won the President's Trophy at the annual industry conference gala dinner.

The award recognises dedication and passion for working on behalf of the horticulture industry, as well as a commitment to developing as a business leader and successful grower.

Kris says he was a bit overwhelmed and certainly honoured when he found out about the award.

But it's clear when you ask him about fruit growing and what he loves, that he was made for the industry.



Kris Robb with wife Karla at the Horticulture Conference gala dinner with (left) HortNZ incoming chair Bernadine Guilleux and (right) chair Barry O’Neil

“I love growing fruit, and I love picking it and packing it. It just gives me such a buzz doing it. It’s like a drug, and the feeling you get when you’re amongst the trees and the fruit... It’s such an adrenaline rush to see everything growing, and then the season ends complete with the hangover.

“So the only way to fix that is to grow more fruit and better fruit,” he says.

Kris has worked at Clyde Orchards for brothers Kevin and Raymond (Musso) Paulin the past 12 years and has been in the role of operations manager since 2020. He is president of the Central Otago Fruit Growers Association (COFGA), chairs the Central Otago Labour Management Governance Group and serves on a number of other industry committees.

“COFGA is one of a few in the country that is still reasonably active, it’s a really important link between the growers and the industry groups, and it is crucial that we keep growers engaged,” he says.

He’s also keen to reinvigorate the young grower group in Central Otago and has already done a lot of mentoring with those coming into the industry.

“It’s important for us all to get together and see what each other is doing,” he says.

Growing up in Dunedin, Kris got his first taste of the industry picking fruit in Central Otago as a teenager in

the school holidays. Then as an 18-year-old he got a job working at Sunbury Park drying apricots for eight weeks – this eight-week stint turned into a lifetime career.

He went back to Otago University and studied for a Bachelor of Commerce in management and later attended Otago Polytechnic (Cromwell campus) where he completed a Diploma of Horticulture. And in 2022 he completed the Kellogg Rural Leadership Programme.

“**I love growing fruit, and I love picking it and packing it. It just gives me such a buzz doing it**

Working his way up through various roles and starting with managing the Clyde Orchards packhouse, he now encourages his own young staff to further themselves, through the Young Grower of the Year competition and industry training qualifications.

During Covid-19, he worked to secure New Zealand labour for Central Otago through his independent work on social media and contribution to other industry initiatives.

Through his role as chair of the labour governance group, the focus in the past was on Recognised Seasonal Employer (RSE) scheme workers but they are throwing the net wider now, to address growers’ needs for labour across the region.



Clyde Orchards operations manager Kris Robb in the Cravo grow house amongst the blossoms

The group is currently working on a labour survey to gauge the shortages across the horticulture industry, and also to look at what the 'true plantings' in the region are - and the labour requirements to go with that.

“

Kris is positive about the future of fruit growing, with new technology advancing all the time and new plantings coming on every year

It will cover everyone from seasonal workers right through to full-time staff and where the shortfalls are in recruitment.

A pastoral care group is another initiative with Seasonal Solutions Cooperative that started with helping RSE

workers and will now expand into helping all 6000 workers coming into the region every year.

Kris has attended job fairs and career expos to promote the industry and to get young people excited about horticulture, "because it's about attraction and retention of new staff, and the best people to champion the industry are growers."

He's positive about the future of fruit growing, with new technology advancing all the time and new plantings coming on every year in Central Otago.

Cherries haven't had a bumper crop since the 2016-17 season in Central Otago, but watch out when they do, Kris warns.

"The logistics of having a bumper crop will test the market for sure." ●

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Murray Shearer, Jayne Shearer and Hawke's Bay Fruitgrowers' Association chief executive Callum Ross with PIQA Red trees

PIQA BRAND REFRESH IN 2025 AS **DEMAND SOARS**

PIQA Red growers like the Shearers in Hastings are investing in higher density 2D FOPS growing systems. When their pear crop reaches the market, the fruit will be part of the refreshed PIQA brand.

John Gauldie

"That is one of the most exciting things on the orchard," says Jayne Shearer. At the family-run Coldstream Orchard on the edge of Hastings, she points past rows of apples toward their recent 2ha planting of pears. Still known in the marketplace as PiqaBoo® pears, the licensees of the fruit recently learned about Prevar's plans to unveil its new PIQA® master brand in 2025. Prevar also spoke to its global partners at Asia Fruit Logistica in September about its potential future line-up of PIQA varieties.

However, on Coldstream Orchard, there is still much to see before we reach the back block of PIQA Red pears.

It's a busy spring day when we visit the orchard with Callum Ross, chief executive of the Hawke's Bay



Fruitgrowers' Association. The first block we see entering the orchard from Maraekakaho Road is a brand-new planting of Joli™. Further along, a digger crew is installing timber posts on 2.5-metre rows for another bay of Joli. The wispy young trees replace a part of the orchard that blew over in Cyclone Gabrielle.

Joli is a new variety introduced by T&G last year, the result of VentureFruit®, T&G's IP management and commercialisation business, working closely with Prevar and Plant & Food Research. Joli tree stock became available this year for planting by independent growers and is expected to reach consumers by 2028.

"Joli is an exciting project to be in on the ground level," says Jayne.

But today we walk past the Joli, past the 2D plantings of Envy™, past the remaining rows of big full 40-year-old Royal Gala trees.

Jayne says AgFirst consultant Jack Wilson has assisted them to optimise the plantings as they transition the entire orchard to 2D. The rows of Envy have produced high-quality fruit.

"It's quite amazing the colour difference we get from this block compared to the 3D spindle trees.

"Our family has been here 22 years," Jayne continues. "Mum and Dad were sheep and beef farmers and moved down here on the orchard about 22 years ago.

"When I was at uni, I helped out on summer holidays every now and then. Then I went overseas to the Middle East and England, teaching art, design and primary school kids. I came back three years ago to get involved in the orchard. It's been a steep learning curve."

Despite some up-and-down October days, Jayne is optimistic about this season's crop. Like all Hawke's Bay orchardists, she is hoping for a welcome return to form after the last three years.



Orchardist Jayne Shearer in Hastings

"So far, it's been a really good season with pollination and just really sunny days. Winter chill was really good. We're about eight to ten days early with flowering. We're just at the end of our primary thinning, so hoping for some good cell division days."

As we reach the PIQA block, we see the characteristic ruby leaves growing on second-year plantings. But it is the wire structure and rigorously trained 2D planar formation that captures our interest.



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The Future Orchard Planting Systems (FOPS) programme has been developed by Plant & Food Research, and industry partners NZ Apples and Pears, Rockit Global, and Summerfruit NZ with funding from the government's Sustainable Food and Fibre Futures fund (SFF Futures).

Narrow-row orchards with 2D planar cordon trees developed within the FOPS programme increase sunlight capture and penetration, improve water and nutrient efficiency, and ease of picking and management. It is capital and labour intensive to get going, but can increase overall orchard profitability.

It's fair to say that pears have lagged behind apples in converting to more modern growing systems. PIQA is slowly changing that. Developed in New Zealand through Prevar, PIQA was first planted in 2014 with first commercial plantings in 2016.

PIQA Red has the distinctive European pear shape, striking red skin, but tropical crisp, sweet and juicy flesh reminiscent of Asian pears.

Unlike traditional pears, which have a short window of optimal ripeness, the PIQA line are always ripe and ready to eat, remaining crisp and juicy throughout their shelf life, making it a better export crop and a better eating experience for consumers.



Check out the new PIQA master brand on piqapears.com

As with any new variety, getting the growing right has been a process - with early concerns about yield due to issues with pollination, bud die-back and susceptibility to fire blight.

Many PIQA growers have been adopting FOPS as the system of preference to ramp up production quickly, as well as to manage the niggles of the new variety.

PIQA growers are producing a relatively small volume, but the fruit is proving increasingly popular as consumers both here and overseas experience the taste and become familiar with the brand.

From close to 140,000 trees in the ground in 2021, New Zealand currently has 200,000 PIQA Red trees in Tasman, Hawke's Bay and this year new plantings in Central Otago.

Prevar is looking to expand the number of growers and tree plantings in New Zealand.

Jayne's father Murray Shearer motors down the path to join us. He is clearly happy with the second-year PIQA Red trees.

"It's going to be a good year for them, because we've had a good winter chilling and they've all flowered very well. Pollination is a big thing with pears, you've got to have a lot of pollination."



The 2ha PIQA Red block has 2.5m rows with second year 2D planar cordon trees developed within the FOPS programme on Quince C rootstock

These trees won't be fruiting this year as they focus their energy on vertical growth of good fruiting wood. Each tree has two horizontal cordons with five leaders each - so ten leaders per tree.

Rather than expensive bamboo, the Shearers have chosen custom-made wire netting.

"It's a good start to it," Murray says. "We'll just keep clipping them with the taper as they go up."

The choice of rootstock for pears is currently more limited than apples, but the Shearers are happy with their Quince C.

"It hasn't got quite the vigour that Quince BA29 has."

The rows are the narrowest on the orchard at 2.5 metres. They're finding it a bit of an issue with available machinery, but the density is worth it. Everything they are planting from now on will be spaced at 2.5 metres, including their new Joli trees.

The Shearers are looking forward to their first commercial PIQA Red harvest in 2026.

"Most of the new pear plantings are on FOPS. I think we've shown that it's going to work."

Murray says pears have certainly taken a bit of a backseat in the last 30 years, so it's great to see the excitement that the PIQA brand is generating.



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It's a tight fit for the machinery, but all new plantings at the Shearers orchard are spaced at 2.5 metres, including their new Joli trees

“They’ve done really well with the branding. And it’s still all about the fruit. If you’ve got the right fruit, the right product and then get the brand going, it’s the formula. In the past there haven’t really been any suitable pears to export, they weren’t great exporters, so [Prevar and Plant & Food Research] really worked on that and this is the first one coming out.”

Prevar brand manager Amanda Lyon says they have plans to shake up the pear category.

“We’ve done a lot of consumer and stakeholder research. Consumers have been falling out of love with pears, they’re seen as quite traditional. So our goal is to reinvigorate the pear sector and address the lack of innovation.”

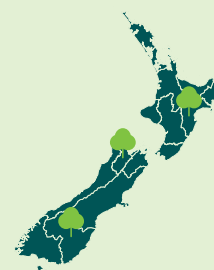
The new PIQA master brand will have its market launch in April next year. Prevar is beginning a phased switch of the PiqaBoo brand to PIQA Red, with domestic supply continuing under the PiqaBoo brand into 2025 as the industry transitions through the collateral.

Although the focus now is on getting scale with PIQA Red, Plant & Food Research is working on a pipeline of exciting varieties and colours that will fit under a single PIQA category.

The pear’s main markets are China and Singapore, and the industry is currently working on market access to Taiwan and Vietnam.

The European sub-licensee in Belgium continues to grow outstanding fruit and their full crop in 2023 was sold in supermarkets in Belgium and Germany. Prevar is looking to expand global production, including to Tasmania, China, Europe and the United States.

NEW ZEALAND CURRENTLY HAS
200,000
 PIQA RED TREES IN
 TASMAN, HAWKE’S BAY
 AND CENTRAL OTAGO



Temperature is a factor, as too warm a climate can affect the signature red colour. The trees grow best in a slightly colder climate.

Local consumer demand has seen PIQA Red deliver some exceptional premiums. Retailers in New Zealand are asking \$9 to \$12 a kilo with steady availability throughout the winter. Prices have also been even across all size grades.

Production is beginning to reach a scale to generate real impact on global markets, coupled with a strong brand push coming and innovative varieties set to augment the offering. So it’s not surprising that PIQA Red growers are excited about their crop.

“Orchard gate returns are high,” Amanda says. “PIQA Red delivers a significant premium when you get the growing right.” ●



Scottfresh has consolidated its entire operation to its North Canterbury farms converted to vegetable growing

COASTAL BLOCK IDEAL FOR VEGETABLES

Ben Scott grew up working on his father's market garden in Marshland, Christchurch and reckons that was enough to convince him growing vegetables was the last thing he wanted to do for a living, but as it turned out, he's still in the family business.

Tony Benny

"Dad grew a range of different crops in Marshland, but he did everything he could to try to put me off following in his footsteps and he gave me all the toughest jobs possible," recalls Ben, who headed for a different life in Auckland after graduation.

He was back in Christchurch a couple years later when his father's manager suddenly left, and he offered to help out for a few days. Twenty years later he still hasn't left, though the business has evolved and relocated since then.

Marshland was a summer-only operation – it was just too wet in winter – so when Ben heard of a block of coastal land where lettuce was being grown in winter a couple of hours north of Christchurch at Conway Flat, he saw an opportunity to expand the business.



"Tom McFarlane had started growing lettuces up here 20 years ago and proved it could be done, so we came up and took over the lease, starting on 2ha."

That was in 2006, and a year later they bought the whole 5ha block. "We'd drive up and spend a couple of days up here and the rest of the time in Marshland."

With his father's health deteriorating, Ben found himself increasingly taking over management. In 2008, his father died. "Dad was one of the first people to grow broccoli in Canterbury so we carried that on as well as lettuce, and in the last seven or eight years we've moved into machine harvested baby leaf spinach and mesclun."



Daily operations at the North Canterbury farms are the responsibility of newly appointed general manager Nick Archdale


THE FREE DRAINING SANDY SOIL IS EASILY WORKED AND GETS PROGRESSIVELY HEAVIER THE FURTHER AWAY IT IS FROM THE BEACH

They closed the Marshland operation and for a while leased land near Dunsandel, south of Christchurch, prior to buying a block near Southbridge. The Southbridge operation has since been sold and they have bought and converted a block at Spotswood, inland from Claverley Farm, for their summer operation.

Winter growing is still done on the nearly frost-free land on the coast and Scottfresh have consolidated the entire operation to North Canterbury.

Ben gives credit to HortNZ for assisting him get regional council consent to expand the operation at Claverley.

“Without the work of Horticulture New Zealand in the background it would be unlikely that the latest plan change by Environment Canterbury would have allowed for this farm to be used for vegetable growing,” he says

“The team at Horticulture New Zealand put in a significant amount of work to demonstrate the environmental upside of converting this farm to horticulture,



The coastal climate and soils is ideal for horticulture

something that no doubt will benefit both the environment and other Canterbury growers in the future.”

Claverley Farm is ideal for horticulture, Ben says, because of its climate and soils. “The climatic advantage was probably wasted on cattle. You do get frosts, just a wee touch usually and they’re reasonably infrequent. Occasionally it will mean you can’t harvest until 9 or 10am but they go pretty quickly.”

The free draining sandy soil is easily worked and gets progressively heavier the further away it is from the beach. “We do have stones but it’s really clay-bound pea shingle all the way to China. It drains beautifully and the small and round stones are not hard on gear.”

The property is still being developed and over the past year, old fences and tree lines have been removed to make it more horticulture friendly. Ben says he’d like to move irrigation lines too, but for now that’s on hold.

“They’re not really where we’d put them if we had a choice. We had visions of ripping them all out and putting in a new mainline and all sorts, but the price of vegetables

has come back by about 45 percent (over two years) so that’s on hold for now.”

Those low returns are the biggest issue the business faces, with prices over the past 12 months or more often below the cost of production.

“Too often we lose money on every head of broccoli we sell and it’s probably often the same with lettuce too. Every grower is in the same situation and every grower is doing what they can to keep the business going,” Ben says.

“I’ve never ever seen it this low for so long, I’ve never seen it this low at this time of the year.”

Despite this, Ben says they actually have a desire to continue expanding the programme for some existing product lines.

“Purchasing this farm was done with expansion in mind so if we don’t expand we’re going to end up with a massive mortgage on a property that we’re not getting the utilisation out of. Short term that’s far from ideal, but long term we want to maintain our market share as well.”

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SCOTTFRESH HAVE CONSOLIDATED
THE ENTIRE OPERATION TO
NORTH CANTERBURY

Scottfresh's Claverley Farm on the coastal plains of Conway Flat, North Canterbury

He doesn't blame supermarkets for the poor returns. "Both the supermarkets and nationwide marketing companies we work closely with have high expectations. They work with us, they come up to the farm, they understand our business, I couldn't fault them."

For the past 20 years Ben has effectively lived two lives, splitting his time between Christchurch and North Canterbury, but he found that just wasn't working.

"There were several people reporting to me and it wasn't really fair on them. I'd come up here and have all sorts of ideas and we'd talk about all sorts of things, and then I'd jump in the car and leave and they wouldn't see me for another week."

Recently Nick Archdale was appointed to the role of general manager, bringing many years of local and

international growing experience to Scottfresh. Nick not only joins the operation with significant experience but shares Ben's desire for sustainable growth of the business.

"I'll still come up but I won't be involved in the daily operation, I'll leave that to Nick. But I'll be working with Nick on strategy and hopefully drive a tractor or maybe the digger, actually do stuff I enjoy and then go home to Christchurch and spend more time with the family."

And some weekends he'll most likely bring his children up to the farm to earn some pocket money working there, much as he did for his father. "We're not getting much return in the way of dollars at the moment but if you can get return from seeing your children doing things like that, it makes up for it." ●

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From left, Barker's sourcing manager Craig France, Barker's procurement and research & development manager Kim Whitman, and Barker's people and corporate affairs manager Elyse Gagnon

BARKER'S AIMS TO INCREASE LOCAL CONTENT

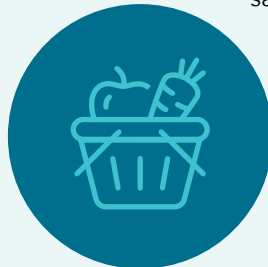
Barker's of Geraldine wants increased supplies of locally grown fruit and vegetables to help increase production and develop new export markets.

Tony Benny

Since starting out making elderberry wine in Geraldine, South Canterbury, 55 years ago, Barker's has grown into something of an institution with its sauces, chutneys and jams stocking pantries and fridges throughout the country.

"We're pretty much found in every aisle of the supermarket with our own retail brands as well as a large industrial segment, supplying fruit preparations for other manufacturers to put in their own products," says Barker's procurement and research & development manager Kim Whitman.

Founded in 1969 by Anthony and Gillian Barker and later run by their son Michael, Barker's was taken over by French company Andros, who specialise in manufacturing fruit and dairy products, eight years ago.



"Andros call themselves a 'multi-local family company'," says Barker's people and corporate affairs manager Elyse Gagnon. "They find these companies like Barker's which are family-owned small companies that already do amazing things and they buy them. It's given us the benefits of being part of a larger company and allowed us to expand and grow."

That growth includes a recently started rebuild of Barker's factory, replacing the plant that's grown bit by bit since the business started in a shed on the farm near Geraldine.

"It's going to be three times bigger than we currently have and it will run ergonomically and efficiently from one end to the other.," says Kim.

Barker's produce 14,000 tonnes of finished goods a year, sourcing fruit and vegetables from throughout New Zealand, for example strawberries from Auckland, boysenberries from Nelson and apricots and plums from Central Otago. But 50 percent of their ingredients have to be imported.

"There are some fruits that just aren't grown enough in New Zealand, including raspberries. We can't make any jams with 100 percent New Zealand raspberries, and raspberry jam is the number one seller," Kim says.

Other fruit, like mangoes and passionfruit, aren't grown here commercially so they are imported frozen. But Barker's are keen to increase the amount of locally grown ingredients in their products, including Anathoth, a brand they took over in 2007.

"That's a key brand strategy for both Barker's and Anathoth, especially as we move into export markets more, to be able to say New Zealand sourced as well as New Zealand made."

If they are to do that, they need growers to produce more fruit and vegetables, and the company has just appointed a new sourcing manager Craig France, recently returned to South Canterbury from nine years working in various horticulture roles in California.

"My job's about the long-term vision, how we work with our growers, how we develop more production in New Zealand to align with us wanting to increase the proportion of New Zealand fruit and vegetables in our lines, and how to make that sustainable for us and the growers as a partnership," says Craig.

“We can't make any jams with 100 percent New Zealand raspberries



He hopes longer term contracts that eliminate year-to-year unpredictability for growers will help ensure reliable and increasing supplies for Barker's, but another risk Kim sees on the horizon is succession planning for family operations.

"A lot of growers are coming up to retirement age so a big thing for Craig is making it an attractive business for the next generation to get into, making it sustainable and profitable for them, something they'd look forward to going into," she says.

Succession planning is an issue globally. "Andros is looking at what can they do in the digital space, what apps can they provide to growers, what information could they share to make it a more interesting field for people to join."

Kim has been with Barker's for ten years, joining the company as a food technologist and being appointed procurement manager three years ago. She says in that role she has become acutely aware of the impact of weather events on growers.



Barker's would like to increase the proportion of New Zealand sourced fruit and vegetables in its lines

"It's like..." she starts, taking a deep breath, "...what's happened, where's the weather, what stage are the fruit trees at? And thinking of the growers in those very moments when there's a hailstorm as they're coming up to flowering and it knocks the flowers off.

"A few years ago we had a hailstorm go straight through the middle of where we source our boysenberries, two days before harvest. That's devastating for growers and we have to scramble too."

Most of Barker's production is sold within New Zealand but some is also supplied to Australian supermarkets, and a small amount is exported to Southeast Asia. With a new export manager recently joining the company, additional overseas markets are being sought.

"We've sent a few container loads of Barker's products to Switzerland, and we have some in the United States at the moment. We're slowly getting there and expanding globally," Kim says.

"We're working on seeing what's wanted – is it New Zealand made, is it New Zealand sourced and New Zealand made? What sort of flavour profiles can we put into those markets and expand that? I think that's where our growth is."

"Andros sees us as a very innovative company. We're very quick to market and we're the only company within Andros that works with vegetables, so they see us as an innovation hub for vegetables.

"I think they're a big fan of what Barker's is doing, they just want us to do more of it." ●

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Pukekohe High School's 2019 Horticulture Pathways class at T&G's Harrisville site between Pukekohe and Tuakau. Pukekohe Young Grower of the Year competitors 2024 Keegan Neate (second from the left) and Jack Haddon (third from the left)

PATHWAYS FOR YOUNG GROWERS

*Attracting young people to horticulture is crucial to the industry's future.
HELENA O'NEILL met with agriculture and horticulture teacher
Dave Matthews to learn more about what he's doing to encourage
young people to work in our primary industries.*

Pukekohe High School head of agriculture and horticulture Dave Matthews is passionate about our horticulture industry and is a big believer in offering students practical skills before they leave school.

"We asked what skills the growers want students to have when they leave school and go into the industry. We looked at things like vehicles ... horticulture students had the ability to do a Level 3 forklift course which gives them a certificate but not an endorsement on their licence. This year any of the agriculture or horticulture students can opt into the basic tractor driving skills course."

Dave says the school uses local companies for training; Tana Training for forklift and Power Farming supplied the tractor and the implements for the course.



Both tractors and forklifts were added to the curriculum after consultation with growers, which has already paid off for some students.

"Both my son and daughter worked for Southern Produce, they had been following the tractor doing the planting for about a week when they were asked if they knew how to drive a tractor. They said that dad had taught tractor driving at school and the next day they were promoted to tractor driving."

Vocational Pathways provides more options for learners to complete NCEA (National Certificate of Educational Achievement) Level 2. The aim is that by having more ways and places to achieve NCEA Level 2, students will have more pathways into further learning and work. When completed, students also receive a Vocational Pathways Award as well as NCEA Level 2.



Head of agriculture and horticulture Dave Matthews checking on broccoli grown by Pukekohe High School students. Photo by Helena O'Neill

"Questions will be relevant, like you have to plant so many onions in a one-hectare field, they have to be spaced this far apart, what's your planting plan?"

A main focus is teaching students that horticulture is more than picking fruit and vegetables, Dave says.

"There are plenty of different jobs within the industry. Fert, agronomist, working with machinery and tractors, diesel mechanic, and so on. That's the direction I've been headed, trying to diversify students' knowledge of what horticulture is."

Pukekohe High School agriculture and trade students have work experience with local farmers and businesses each week, and Dave hopes to do the same for his horticulture students next year.

"Now that's production horticulture; the other aspect we do at school is amenity horticulture. We do all of the school garden bits, as part of the Level 2 Horticulture programme the students' job is to plant and maintain them throughout the year. We're really lucky to have quite a good horticulture area for a high school."

The school has two glasshouses, a large shade house that includes a teaching area, and 30 raised garden beds. There is also a small orchard area on the school site - Franklin Food Forest - which is managed by Franklin Tree Crops.

“
By having more ways and places to achieve NCEA Level 2, students will have more pathways into further learning and work

Dave says there are a lot of good work programmes now on offer for school leavers working in horticulture, but more are needed for students before they finish school.

"I still think there needs to be better programmes for students still in school, whether it's Gateway or a trade academy course."

As part of the Pukekohe High School Horticulture Pathways programme, pupils spent three days each on work experience at four local businesses, Punchbowl, A S Wilcox, Balle Brothers, and T&G then a follow-up day at each.

"I was basically trialling a Gateway-style programme where I got students out to local growers and they would have mentors. When I arrived at Pukekohe High School, Deloitte had recently published a report on the lack of skilled and semi-skilled workers going into the horticulture industry, particularly in the Franklin area."

Gateway programmes are for year 11 to 13 learners who want to explore job options while studying towards NCEA.



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The school has two glasshouses (pictured), a large shade house that includes a teaching area, and 30 raised garden beds.
Photo by Helena O'Neill

PUKEKOHE HIGH SCHOOL HAS



2 GLASSHOUSES



1 LARGE SHADE HOUSE



30 RAISED GARDEN BEDS



1 SMALL ORCHARD

Jack Haddon is the operations manager for the brassica division at Balle Brothers. The 22-year-old was one of Dave's horticulture students in 2018 and 2019 and says the subject was a great introduction to the industry.

"It gave me a pretty massive headstart in understanding the processes and other aspects of the industry, rather than just going in there and not having the knowledge around how and why some things are done. Having that little bit of education before going into this job really helped."

Jack's class worked at T&G, Punchbowl, and Wilcox for two days each as part of the course, and also completed ATV training through Primary ITO.

Dave says it's always a good feeling when his students join the horticulture industry after school.

"Unfortunately with Covid-19 and other things, most growers don't have the capacity to provide that educational strand. As an offshoot of that, the Primary ITO has just set up a two-year apprenticeship in Horticulture in Franklin. So a lot came out of it."

In September, Primary ITO announced the creation of the Horticulture Cadetship Programme which aims to free up growers to spend more time on their businesses while growing the skills and knowledge of their staff.

The pilot begins in Pukekohe in late 2024 to early 2025, with an initial group of learners from local businesses. The learners will enrol in a Primary ITO Horticulture apprenticeship, specialising in fruit or vegetable growing (indoor or outdoor), nursery production, or post-harvest, depending on the business they are employed in.

A dedicated cadetship support person from Primary ITO will work alongside employers to oversee training requirements and progress, from sign-up through to completion of the training. They will also provide weekly one-on-one wrap around support and guidance to the learners.

"Growers have told us that training staff can be time and resource intensive," says Primary ITO sector manager for horticulture production Hamish Gordon. "We've listened and designed the cadetship with a Primary ITO support person playing an integral role in managing the day-to-day training requirements for the employer, enabling them to focus more on their business."

Learners will also benefit from the collegial support of others training at the same time, attending study sessions and site visits together, with the opportunity to learn about other types of production. "We are keen to hear from growing operations in Pukekohe who would like to jump on board with this cadetship programme," Hamish says.

Once established, the aim is that the cadetship programme will provide an avenue for high school students to enter the industry, take up apprenticeship training, and progress on to higher education if they choose to.

"We see the cadetship as eventually helping to provide a pipeline of new blood into the industry, an incentive for new entrants to get involved in and get excited about," says Hamish. "It's also a way to foster more collaboration and connection across the industry."

The pilot is expected to run for 12 months before the programme is rolled out to growers in other regions. ●

FRUIT GROWING

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Cherry blossoms on Panmure Orchard amongst the snow at the end of September. Photo by Bridget Hiscock

CENTRAL STONEFRUIT WEATHERS SHAKY SPRING

Central Otago has a good looking crop emerging, despite some anxious moments including a late October Labour Day weekend cold snap.

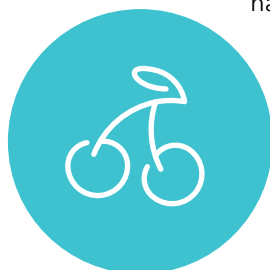
Aimee Wilson

Hawke's Bay and Marlborough are producing fruit early, so Central Otago growers are hopeful their later crops will spread the volumes out evenly.

Despite a disruptive spring with heavy rain and snow, orchardists are saying their crops are so far largely unaffected by the bad weather during pollination time.

Manager of 3 Kings Cherries, Tim Paulin, says having two major weather events in Central Otago in short succession was unusual, and they still don't yet know the true impact from those.

"We had two and a half days of solid rain and 20 inches of snow on the ground before that, but very little wind which has been good."



The Clyde-based orchard, north-east of the dam, has had a strong flowering this season, and that is a positive sign.

"But with those two weather events – does that do anything? Has that upset the balance somewhere? I'm not sure. But I'm not counting my chickens or my cherries until after the shedding," he says.

Around pollination time there was a lot of bee activity, "so that would lead to the fact we're going to have a good crop. I just think a lot about those two events, and you can't really see it at the moment."

Otago's heavy rain event in early October, which resulted in flooding along the coast, did have some impact on the NZ Gourmet summerfruit orchard in Roxburgh East, with some of the later flowering blocks experiencing 'blossom blight.'



Early October snow at Bridget Hiscock's Panmure Orchard - the start of a month of rollercoaster weather

But manager Matt Tyrrell says the Teviot Valley completely missed the snow that had dumped further north around Earnsclough and Alexandra, and Cromwell was largely unaffected as well.

Heavy flowering in the Teviot Valley has so far produced a good-looking cherry crop, and pollination has gone better than expected, he says.

The Teviot tends to flower early but with cooler weather in October than the rest of Central Otago, resulting in a later season overall.

He says 15 tonnes is about the perfect crop of cherries, and he expects to have several blocks that will produce 20 tonnes.

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Central Otago orchardists such as at Webb's Fruit in Cromwell faced some disruptive weather at the start of the season

Panmure Orchard in Earnsclough in October. Bridget Hiscock is the orchard owner and photographer

"Quality is the only issue with a bigger crop," he says.

Frost fighting has been relatively mild this season, and Matt says he has only been active for five days in mid-October, when he would usually average about 14 days for the season.

Up in Cromwell, Central Pac manager Tim Hope says his cherry crop is also looking pretty reasonable, "it's not the heaviest we've ever had but it's manageable."

Spring has been tough on everyone, although daytime temperatures have been warmer than in the past, he says.

Post-pollination weather has had some impact on the fruit, with cold snaps taking many people by surprise, "and there is still a lot of fruit to come out of the schuck," he adds.

It wasn't ideal flowering weather with three days of solid rain, but Tim says surprisingly the trees kept moving.

"And now things are popping out pretty quickly," he says.

While still in the midst of spring, Tim says there is the potential for some really big frosts "that could easily wipe stuff out," but so far the weather has been unsettled enough for it to literally blow through.

Most orchardists will be through the worst of it in a few weeks, "it's very hard to kill a cherry in mid-November," Tim says.

Harry Roberts Jnr in Earnsclough, facing his first season alone after taking over the family orchard from his father last December, says he is still cautious about making any early predictions.

A TALE OF TWO LABOUR DAY WEEKENDS

24.1°C
WHANGANUI

-3.9°C
AORAKI/MOUNT COOK

"It might look like you have a full crop but then it all falls to the ground."

He says he has been around long enough not to get too excited too early.

"You really don't know what's going to happen. It's a hard one. You can't say yes or no."

While his cherries are looking good, apricots have had a poor pollination this season, particularly as his crop produced a lot earlier than everyone else in the district.

Roberts Family Fruit has some of the coldest blocks in Central Otago, and has made national news many times when the fruit has been wiped out by bad weather.

This coming Chinese New Year is on 29 January 2025, which makes it favourable for cherry growers right across the district. ●



Joe Lenaghan, T&G's citrus & operations manager, says the company is investing in robust forecasting to sequence harvests

ENSURING A STEADY SUPPLY OF PREMIUM CITRUS

Along with lush pastures and vibrant native bush, Northland's milder winters and early spring give it an edge for horticulture.

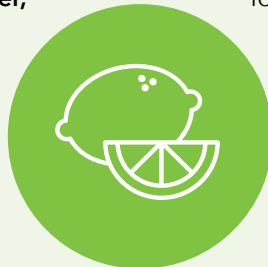
Delwyn Dickey

Having moved to Kerikeri from Gisborne five years ago, Joe Lenaghan, T&G's citrus & operations manager, appreciates that the early-maturing northern orchards are ideally situated to supply the early domestic market.

"We focus our Northland growing operation around early producing varieties, aiming to enter and exit the market before Gisborne supply ramps up," Joe says.

"However, this does create some unique challenges around growing practices and being a little bit more exposed to imports."

T&G's Northland operations are focused on working more closely with retailers around forecast volumes and predicted harvest periods.



T&G Fresh conducts all their own grown citrus volume forecasting in-house. The company invests significant time and resources into extensive fruit count and profile assessments. This includes predicting harvest times and crop sizes for all its citrus varieties.

"By being proactive and open with our data, retailers can better plan their sourcing based on the volumes and profile of fruit we'll likely provide and when, and then overlay any additional import activities required. Investing in a robust forecasting process allows us to sequence our harvests with other grower partners, avoid clashes with import programmes, and ensure a steady supply of citrus for Kiwis throughout the season."



T&G's Northland orchards primarily grow lemons for overseas export



T&G Fresh conducts all their own grown citrus volume forecasting in-house

There is quite a lead-up to navel orange picking, especially as harvest approaches in June. The extensive maturity programme for early season oranges, in collaboration with retailers, ensures that the fruit is at its optimum before harvesting commences.

The industry-wide voluntary programme involves independent testing of the fruit before harvest. "We've had great feedback and a preference for New Zealand grown citrus from consumers following the industry adopting this approach" Joe says.

"With strong competition from Australia in the navel space, and new import markets opening up in Southeast Asia and South America, getting oranges to Kiwi households in optimum condition is more important than ever. Harvesting too early means a poor eating experience for consumers, and harvesting too late can cause maturity issues and challenges for our packers and retailers at the point of sale, so it's a bit of a balancing act to get it right."



T&G's five Kerikeri citrus orchards and their Taipa orchard are made up of:

- 35ha of **satsuma mandarins**
- 20ha of **Afourer mandarins**
- 35ha of **Yen Ben lemons**
- 22ha of **navel oranges**
- a small trial site of **finger limes**.

After three La Niña years bringing wetter, later winters and springs - which impacted harvest start times and crop size - last summer's drier period was a welcome change. This coincided with great tasting early satsuma mandarins and early navel oranges.

This season's harvest began with satsuma mandarins in early April, finishing by mid-May as the harvest moved further south. T&G orchards produced around 1100 tonnes of satsuma this year.

From satsuma, the pickers - a mix of locals and Recognised Seasonal Employer (RSE) scheme workers - moved straight into the Yen Ben lemons export season from mid-May until as late as August, depending on export orders.

“

After three La Niña years bringing wetter, later winters and springs, last summer's drier period was a welcome change

Most local lemon growers produce over the winter months, catering well to the New Zealand domestic market. T&G's Northland orchards primarily grow lemons for overseas export, with Japan being the main market.

T&G exported around 700 tonnes of lemons this season, with the harvest planned around ship visits, resulting in gaps of four to ten days between pickings.

Container shipping has reduced since Covid-19, with fewer visits and slightly longer transport times.

Picking then moves to navel oranges, starting in mid-June and continuing through until the end of July, with 750 to 850 tonnes usually picked annually.

“

T&G exported around 700 tonnes of lemons this season, with the harvest planned around ship visits

To diversify, T&G converted around 20ha of satsuma orchards to mid-season Afourer mandarin five years ago, grafting Afourer stock onto satsuma stumps.

“Although Afourer is a more vigorous plant, the trial has gone very well”, says Joe.

“Afourer is a relatively new crop for New Zealand, with volumes still increasing. The milder northern climate aids its harvest, starting from mid to late August.”

“

We’ve had great feedback and a preference for New Zealand grown citrus from consumers

Gisborne growers typically start their Afourer crop around October as the Australian Afourer import programme tapers off. This competition should ease once local production expands enough to supply the country from August through to December.

Finger limes are another commercial crop being developed in the north at T&G’s Taipa orchard. A couple of small blocks are planted, with a supply agreement already in place with retail partners, says Joe.

“We have trees in third and fourth-year production. Not a significant area, but we’re probably one of the largest growers in New Zealand at this point in time, and our volumes continue to increase,” Joe says. ●

CITRUS GREENING DISEASE

Huanglongbing (HLB) or citrus greening disease is currently affecting North and South America. In Florida, it has caused an 80 percent reduction in citrus production since 2005 and continues to spread across the United States, including the fruit growing area of Southern California.

Spread by the Asian citrus psyllid, there is no cure for the bacterial infection, which kills most citrus trees within a few years. New Zealand and Australia are still free from the disease, although it has recently appeared in Indonesia and Papua New Guinea.

“The best prevention is to keep it out,” says Joe Lenaghan, T&G’s citrus & operations manager. “It’s critical that we actively support biosecurity measures.”

“If there’s an outbreak, we have strategies in place to support affected regions. This includes home gardeners and nurseries, as home gardens will be just as susceptible as commercial orchards. We have to get home gardeners on board, which will require educating them about the disease, how it spreads, how it can arrive here, and identifying our key risk areas. It’s really important that this messaging reaches the wider community.”



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Researcher Sarah Philp-Wright is using AI to develop proteins that could help control plant growth to create high yielding dwarf plant architecture

USING AI TO CONTROL PLANT SIZE

Sarah Philp-Wright is a recipient of a NZ Fruitgrowers' Charitable Trust postgraduate scholarship 2024. Her research at the University of Auckland has identified several candidate proteins designed by AI (artificial intelligence) that have been shown to alter aspects of plant growth, including height and branching, contributing towards more compact, dwarf plant architecture.

NZGrower & Orchardist staff

How could the proteins you are developing be applied to horticulture production?

[The proteins] could make management and harvesting easier, help better adapt and optimise cultivation in greenhouses or protected environments, also helping mitigate significant losses due to weather. The proteins could form the basis for achieving new plant shapes for improved productivity and yield, through either topical application as a growth regulator (like peptides) or through genetic approaches to make plants produce the protein themselves in new dwarf cultivars.



Are you focussing on particular crops?

My research so far is still in the early stages, so has focused on testing the efficacy of the proteins in model plants first, as they're faster growing and are easier to manage in experiments. However, we're looking to move into perennial crops, in particular cherries, berryfruit, pipfruit or avocados. The flexibility of the design process at this stage also means we could potentially tailor the proteins to induce different effects across species to tailor the architecture of different crops to their unique environmental and economic needs.

Could fruit trees optimised in this way replace the need for dwarfing rootstocks?

Yes absolutely. Using AI-designed proteins as plant growth modulators offers an alternative to dwarfing rootstocks and a way to more easily generate dwarf cultivars without having to wait years for breeding programmes or use grafting approaches. Trees exposed to our designed proteins, or new cultivars expressing them, would automatically grow in a more compact form but with likely no reduction in yield, or even improved yield, as seen in some other similarly gene-edited crops.

Can you explain how AI is used in genetic controls?

In the field of plant science, AI algorithms can now help us to better predict plant genes and their functions and breeding values by learning from big data sets, offering new targets for gene editing to control certain traits or faster precision breeding programmes and better crop performance. AI also offers opportunities to design more effective inputs, like fertilisers or plant growth regulators, optimised to meet specific needs.

In the case of my research, AI-based software such as RoseTTAFold diffusion have recently been released that enable you to generate new protein structures from scratch based on a set of specific criteria. Using this software, we can choose specific plant parts or proteins we want to target, then use AI to generate novel molecules or proteins that physically bind to those targets and change how they function, disrupting their downstream effects.

It creates a new way to alter plant gene expression and how that translates into the traits we observe in the field.

Is this a research area being looked at around the world?

Lots of research around the globe is looking into how plant genetics can inform the basis for controlling plant shape, as producing more compact or novel plant architectures while boosting yield has such important economic implications; especially as we look towards more controlled environment growth and ramping up production to meet the growing demand for food.

The applications of AI in horticulture are exponentially growing and AI-designed proteins are also a hot topic at the moment, but they have mostly been applied to human medicine, food processing and new chemical development, rather than use in plants. We are some of the first people to use AI to design novel proteins that don't exist in nature to specifically bind plant receptors and change plant traits for horticultural uses. We're really exploring the new frontiers of AI capabilities for alternative methods to improve crops.

How far away is potential commercialisation?

We're still a while away from commercialisation yet. My research lays the groundwork as a proof of concept – demonstrating AI can be used to design new compounds or proteins that have tangible effects in plants.

APPLY NOW FOR 2025 POSTGRADUATE SCHOLARSHIPS



Applications for the NZ Fruitgrowers' Charitable Trust postgraduate scholarships close on 1 December. Find out more on the HortNZ website www.hortnz.co.nz

We're currently still playing around with refining the expression and application of the proteins to get different and adjustable effects. It does take time to optimise new designs to produce a commercially viable product – whether that be a new compound or a new plant cultivar, which also then must go through regulatory certification before commercial release, but good things take time!

It's been great to see how somewhat outlandish ideas like using AI to design brand new proteins that don't even exist in nature can actually translate into tangible effects on plants and even have commercial potential.

Would you recommend other students to apply for a NZ Fruitgrowers' Charitable Trust scholarship?

The scholarship really changed my perspective on horticultural science and the motivations for why we do the research we do. The opportunity to attend the Horticulture Conference this year was incredibly valuable, not only for learning so much about the latest innovations and igniting a passion to serve and lead our horticultural sector, but also connecting with so many growers allowed me to learn about key issues and considerations that we need to factor in when doing things like developing new inputs or cultivars. ●

Blackcurrant Commodity Levy Referendum

Our existing Blackcurrant Commodity Levy will be coming to an end in October 2025. As part of the terms of the Commodity Levies Act 1990, we will be holding a referendum later this year for growers to vote on whether they want a new levy order. Details related to this were presented at the AGM on August 16th. More opportunities to find out more and ask questions will be coming up.

If anyone has any questions about the Commodity Levy and what is involved in the referendum in the interim please contact Jacki:
office@blackcurrant.co.nz



KIWIFRUIT DONATION REDUCES FOOD WASTE

NZGrower & Orchardist staff

In a new partnership with The New Zealand Food Network (NZFN), Seeka Limited has donated kiwifruit that did not make the retail grade to people in need via NZFN's distribution hubs from July to September this year.

The kiwifruit supplied by Seeka to the NZFN was distributed across the community through 39 of NZFN's Food Hubs. NZFN aims to improve food security across the country and saw a natural alignment with their objectives and Seeka's sustainability journey, says Sophie Percy, NZFN relationship manager.

"At NZFN we collect, sort, and redistribute bulk surplus food nationally and get it to where it's needed most."

Sophie initially approached Seeka to assist with their donations earlier this year.

"Establishing this donation relationship with Seeka in the later phase of the 2024 season has been fantastic. It has meant a great deal to the communities supported by our network - especially throughout the harder winter months when good nutrition and a great source of Vitamin C are so important".

“

Seeka is actively exploring sustainable solutions to address fruit loss



Although Seeka says its mission is to ensure that as much fruit as possible is eligible for the retail markets, it has been investigating ways to repurpose kiwifruit that does not meet the retail grade for international or local markets.

"Fruit-loss is a natural part of the process," says Seeka's sustainability manager Lloyd Franks.

"Seeka is actively exploring sustainable solutions to address fruit loss".



Seeka kiwifruit on their way to the New Zealand Food Network's hubs

These solutions are part of Seeka's ongoing journey of responsible and innovative produce management. In June 2023, Seeka entered a sustainability-linked loan that set targets for renewable energy, health and safety, and greenhouse gas reduction over five years.

Lloyd was particularly impressed with NZFN's donation process.

“

It has meant a great deal to the communities supported by our network - especially throughout the harder winter months



"They had everything set up, making it easy for us to assist them. It's great to see this fruit redirected to benefit people in the community, especially given kiwifruit's nutritional benefits."

Seeka Logistics Manager, Jamie Cantwell spoke about the programme's ability to 'Serve the community' saying, "It's great for our whole team and the wider kiwifruit community to see this kiwifruit, which couldn't be sold, providing valuable nutrition to people who otherwise may not be able to access it from retail." ●



Caption [XX]

High nutrient levels in the soil don't always translate to good plant uptake – testing should guide the spring nutrition programme

INFLUENCE OF SOIL HEALTH AND NUTRITION

Soil is the foundation for a successful growing operation, and therefore soil health is a significant limiting factor in perennial horticultural production. It can be a major contributor to variability, resulting in impacts on profitability, tree health, yield potential, and ultimately fruit quality.

Meg Becker : AgFirst Consultants

Soil health

Identifying variability in soil health is becoming more accessible to growers with the adoption of drone and camera technologies. This allows growers to map their orchards, showing areas of reduced or excessive vigour, allowing for any necessary additional management inputs.

Perennial orchardists are more commonly using electromagnetic soil surveying on land prior to development, allowing them to better understand soil properties. This can help guide decision making around soil testing, drainage, land levelling and planting plans.



Perennial horticultural systems operate with little soil disturbance, allowing growers to improve soil structure and microbiome levels, as well as build up organic matter. However, poor soil and root health have proven to impede on cropping capabilities including the tree's ability to set crop and grow fruit to the desired quality and size profiles.

Soil compaction is known to influence a perennial plant's cropping potential by limiting plant health. Consequently, compaction and wheel rutting cause concern in wet years and many growers are working hard to find ways to minimise machinery passes and sow multispecies in the interrow (sward).



Figure 1: Soil profile to 70cm showing topsoil and subsurface suitable to perennial production

Drainage is incredibly topical for growers in Tairāwhiti and across the Heretaunga Plains with many working on upgrading or undertaking maintenance on both surface and subsurface drains and ripping wheel ruts.

Soil nutrition and plant uptake

High nutrient levels in the soil don't always translate to good plant uptake, as the ratios between macronutrients, soil cation exchange capacity and the total base saturation percentage also heavily influence a plant's ability to uptake nutrients.

Nutrient ratios largely influence crop-loading capability. Take nitrogen for example.

High nitrogen levels - or imbalanced nitrogen to potassium (N:K) ratios - can exacerbate colouring issues in apple crops at harvest. Nitrogen depletion throughout the growing season is key to ensure a N:K ratio <1.5 in the lead-up to harvest. High nitrogen is also known to induce vigour within the tree. This is therefore not conducive to managing light optimisation, or calcium partitioning.

Kiwifruit are also negatively influenced by excessive nitrogen which often leads to excess vigour, lower dry matter outcomes at harvest, and is thought to have a negative impact on storability of fruit.

Many perennial crops require foliar nutritional programmes to provide readily available nutrients to the plant sinks of flowers and fruit.

Fertigation is also becoming a more common practice. This allows for growers to be more precise with matching block specific nutrient supply with nutrient demand and thereby improving their nutrient use efficiency. This is usually achieved using a 'little and often' approach.

Monitoring soil health

Monitoring soil health and nutritional success in the lead-up to determining final crop-load targets is key to determining where your limiting factors may be.

3 KEY STEPS FOR MONITORING SOIL HEALTH



1 SOIL TESTING



2 LEAF TESTING



3 SOIL MOISTURE MONITORING

a) Soil testing

Best practice is to soil test blocks every two to three years in pipfruit, however in kiwifruit this is an annual sampling process. Soil testing should be carried out at the same time every year, and it may be beneficial to test for organic matter content, alongside the basic soil test profile.

b) Leaf testing

Leaf tests provide great insight into the plant's uptake and nutrient partitioning. These are commonly taken across all crop types with variations in testing frequency depending on nutrient movement and key stages.

Most perennial crop types benefit from an early season and a mid-season leaf test. The early season leaf test should guide the spring nutrition programme (in apples, this is once the russet sensitive period has ended). The mid-season leaf test can then show the success of your nutrient programme in terms of plant uptake, allowing you to assess the health of your crop (and potential for fruit quality) heading into harvest. This test will also guide post-harvest nutrient requirements.

For some crops such as kiwifruit leaf tests are also done early in the season allowing growers to get a read on nutrient levels within the plant prior to fruit set (one of the most stressful periods for a plant).

Once you can visually see deficiency symptoms in the leaf, your cropping potential is already limited – so it is important to catch deficiencies before they invoke stress on the plant. As leaf tests show plant nutrient uptake, they allow growers to identify nutrient imbalances within the plant and rectify issues before they become limiting for either plant health or fruit quality.

“

Being able to assess leaf tests along with winter soil tests provides a fuller picture

Being able to assess leaf tests along with winter soil tests provides a fuller picture in order to make educated nutrient management decisions (managing the environment, plant health and crop quality outcomes). Crop removal should also be considered for all crop types, especially where all harvested material is extracted from the block. How will you ensure the nutrient losses are contributed back to the land before the next cropping season, and how will you quantify this?

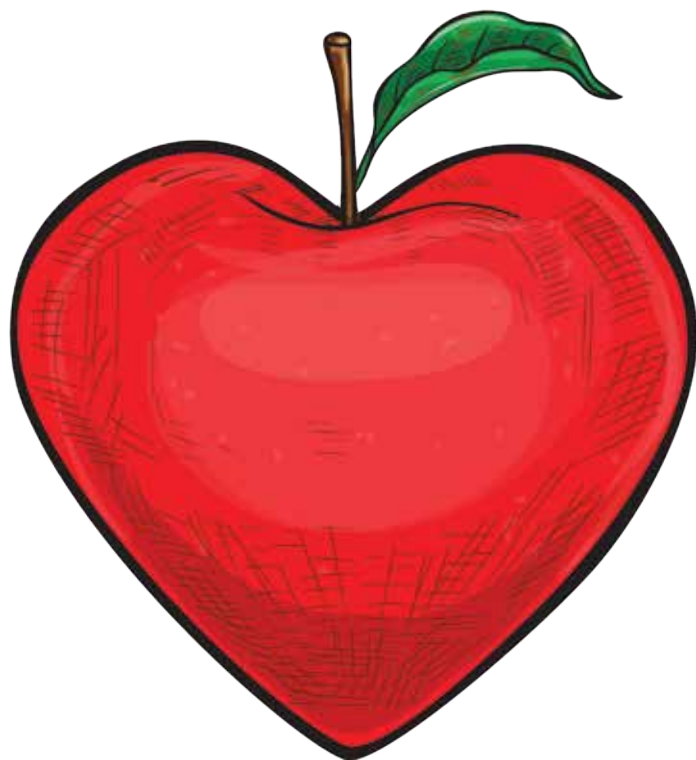
c) Soil moisture monitoring

Soil moisture has been a hot topic over the last few years. Having experienced everything from droughts and water restrictions in the upper South Island in summer 2024, to overfull aquifers, waterlogging and cyclones impacting most of the North Island over 2023, water use efficiencies, drainage, and keeping soils oxygenated have been key to improving root health and anaerobic soil conditions.

Calibrating soil moisture full points correctly is key to success when it comes to optimising irrigation for your block and maintaining deficit irrigation to the correct levels in the lead-up to harvest.

What does all this mean in relation to the season ahead?

AgFirst have used their own industry intel, as well as intel from other industry experts to summarise the season to date, and comment on how the crops appear to be setting up, with regard to how soil conditions are contributing to success this spring.



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Figure 2: Wheel rutting leading to compaction and waterlogging – 2023 season Hawke’s Bay



Pipfruit Hawke’s Bay update

Some blocks affected by waterlogging are still wearing the effects of Cyclone Gabrielle. In the 2024 season, badly affected trees were still showing elements of stress, and in these blocks, we are seeing some variable set, but significantly improved tree health. Growers have put a lot of focus into rectifying rutting, fixing drainage issues and re-sowing swards to minimise wheel slip when spraying and to reduce compaction.

Conditions over the pollination period for the 2025 season have been optimum, with many varieties showing big blooms. Generally, soil conditions are significantly improved on the last few seasons, although soil moisture has remained at high levels through spring. Most varieties across the Heretaunga Plains are coming into the 2025 season in optimum health and look to be setting up big crops. Budbreak, and subsequently flowering is running on average approximately seven to 14 days ahead of last year.

At the time of writing, pipfruit growers are well into their secondary chemical thinning programmes. Primary chemical thinning had good weather windows, with most growers taking a confident approach to get crop-load to target early.



Kiwifruit Bay of Plenty update¹

The 2024 Bay of Plenty kiwifruit harvest was carried out in optimal conditions, with growers getting off high quality product in good time. Following this, the kiwifruit sector is reaping the rewards of the high winter chill – much like the other perennial fruit crops. Bay of Plenty kiwifruit experienced an early budbreak, however cold weather in spring has slowed down growth, meaning the sector is currently tracking seven to ten days ahead nationally.

At time of writing, flowering for red kiwifruit is just coming to an end, and the wet spring conditions meant it has been difficult for growers, despite the bloom being generally ‘very floral’. Supplementary pollination has been essential with the less-than-optimal weather.

The good winter chill has led to some of the best cane quality seen in a while. Gold3 and Hayward seem to be setting up well, with growers currently focused on reducing bud numbers to target to optimise carbohydrate and plant reserves heading into flowering. Despite some bud abortion in isolated areas, the 2025 season is shaping up to be a great one if we can get good conditions over Gold3 and Hayward pollination.

Growers are reporting an adequate labour resource availability at this stage.

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Following the wet growing conditions of the previous two seasons, there has been some vine death and presence of soil pathogens. Pathogen management has improved with the optimum 2024 harvest conditions and the following dry winter. Nutrient management and soil health is a focus for kiwifruit growers, not only from a nutrient management and plant optimisation perspective, but also from an environmental angle, and this has largely been driven by consumer demands.

Summerfruit Otago update

September rainfall was 70 to 80 mm which has helped to maintain soil moisture. This is considered high rainfall for the area, and these higher soil moisture levels have helped to manage soil temperatures, and therefore mitigate the severity of frost.

At the time of writing, Central Otago stonefruit is running a little behind previous years, a reflection of a traditionally hard winter due to the extreme cold and a slow spring. This has led to a later than normal flowering, however this bears no significance on crop quality or outcomes.

Across all stonefruit varieties there has been a good bloom, with generally good conditions conducive to bee activity. Growers experienced three days of overcast weather,

and although it is too early to tell if there are any impacts from this, they are likely to be minor. Cherries are currently at petal fall moving on to shuck fall, so it is too early to tell how the crop will set up, but they are coming off the back of a good bloom.

Apricots have come through okay with a moderate crop seen across the region and not a lot of thinning required. Nectarines and peaches tend to set up well year-on-year, and although it is too early to judge at this stage, there has been a good flowering.

Summary

The La Niña weather patterns have created significant soil health challenges over the last few years. This has meant growers need to quickly increase their understanding of block specific conditions to restore soil and root health to optimise crop-loading and fruit quality.

Generally, fruit size will be a key focus for growers this season, following the 2024 climatic conditions. Soil health and root conditions have influenced fruit size and yield outcomes by limiting the cropping potential. ●

References

1. Thanks to Megan Fox, grower services representative at Apata Group Ltd. for input on Bay of Plenty.



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GENESIS STRENGTHENS HAWKE'S BAY ROOTS

Exciting things are happening at Genesis Nurseries. With a focus on enabling growers to be world-leading, the Genesis team has firmly planted roots in their fully-owned headquarters on Links Road in Hawke's Bay, positioning themselves at the heart of New Zealand's horticultural sector.

Hayden Green, Genesis' Chief Executive Officer, shares the reason for the move from Cambridge. "Being closer to our customers in Hawke's Bay just makes sense. It allows us to centralise our operations, strengthen our relationships with growers and reduce their freight costs while responding more quickly to the sector's needs."

With the purchase of the Links Road site, their office and nursery facilities have been re-established following the floods, complete with redeveloped stoolbeds including many new rootstock varieties for the region, with the aim of enhancing production capacity, quality and range of varieties. "Our newly developed nursery facility will allow us to scale up operations while continuing to provide the superior stoolbed-grown rootstock material we are known for," says Green. "It also creates opportunities for innovation and expanding our product offerings."

“

Being close to our growers means they can visit us rather than relying solely on emails or phone calls

The relocation wasn't just about geography or a new site but also about creating a hub for collaboration, for example, with industry partners like Prevar, with the firm goal of leading the way to secure the future of horticulture. "By consolidating our operations in Hawke's Bay, our team is better positioned to work closely with horticulture partners and growers, and we can do our bit to help support the region's recovery", Green adds.

Since officially opening in October, feedback from the Genesis team and their customers has been overwhelmingly positive. "Our team loves having a permanent, Genesis-owned space that they feel a real sense of pride in."



Rootstock Apple JM7

Customers are seeing the benefits. With many of Genesis' growers in the Hawke's Bay region, the new location has significantly improved communication and accessibility. "Being close to our growers means they can visit us rather than relying solely on emails or phone calls. It will also improve service delivery by eliminating freight logistics from Cambridge."

Looking ahead, Genesis is not content to rest on its laurels. "Our commitment is to explore new ways to meet the evolving needs of growers and consumers," Green emphasises. "Plans are already in place for further expansion, with investments in advanced technology and trials of improved nursery techniques."

As Genesis looks to the future, the company is confident its new Links Road site will serve as a foundation for growth and innovation. "When growers choose Genesis Nurseries, they can trust they are receiving the highest-quality plant material. We're committed to enabling growers to become world-leading," Green concludes. ●

Genesis Nurseries is now accepting budded orders for delivery in 2026 and rootstock orders for 2027.

Contact sales@gnl.nz to place your order.



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Since the launch, core AHAP activities have been driven by a small collaborative programme team

AOTEAROA HORTICULTURE ACTION PLAN: UPDATE ONE

The Aotearoa Horticulture Action Plan (AHAP) was launched in 2023 and acts as a guiding compass to achieve the ambitious goal of doubling the farmgate value of horticultural production by 2035 in a way that improves prosperity for our people and protects our environment.

Anna Rathé : Aotearoa Horticulture Action Plan programme manager

The plan was developed collectively, with input from industry, government, Māori and research providers. It belongs to everyone involved in the New Zealand horticulture sector.

Who is responsible for implementing AHAP?

An initiative of this size and nature requires a collaborative and flexible approach. The AHAP is much too big for one entity to do it all, and that was never the intention.

There is a role for everyone involved in the horticulture industry (including you!) to contribute to the plan.

The plan enables organisations and individuals to align their efforts and investment towards a series of united actions to grow the horticulture sector sustainably.

Benefits from the framework are being seen already – many partners and stakeholders are actively aligning their strategic plans and work programmes to deliver on the collective aspirations of the AHAP.

What has been achieved to date?

Since the launch, core AHAP activities have been driven by a small collaborative programme team, spanning industry, government and science. Good progress has been made on two concurrent streams of AHAP work: delivery of a suite of early win projects, and development of the wider implementation plan to scope priority projects and seek investment to deliver these.



GROWING TOGETHER 2035

Aotearoa Horticulture Action Plan

AHAP actions and outcomes are grouped under five pillars



Grow sustainably



Optimise value



Māori are strong in horticulture



Underpinned by science and knowledge



Nurture people

The AHAP has **24** key priority areas, **56** outcomes, **76** actions.



80+ crops within scope of the AHAP
New Zealand grown fruit, vegetables and nuts for human consumption



22+ stakeholder engagement presentations
13+ in 2023
9 so far in 2024



11 early-win projects
5 complete
6 underway



1 decade (2025-2035)
Remaining lifespan of the plan



22 indicators
developed to track AHAP impact over time

The programme team has:



Completed a stocktake - this has collated the work that is already underway across government, science, Māori and industry that supports AHAP priorities, as well as recently completed projects. This will ensure effort is not duplicated.



Generated a gap analysis - the analysis has highlighted parts of the plan where activity has been limited to date, allowing areas of most need and potential for impact to be identified.



Developed an evaluation framework - this will measure progress and evaluate outcomes from the programme over time.

In addition, five early-win projects have been completed via the AHAP.

How is horticulture progressing towards its ambitious goal?

The stocktake and gap analysis have provided a range of useful insights that will inform next steps.

Significant efforts are already underway

The stocktake highlighted that there is a plethora of work taking place across industry, government, Māori and the science community that delivers on the AHAP. The stocktake process identified over 530 discrete initiatives (complete, underway or planned) that align with AHAP actions. The stocktake and subsequent gap analysis showed that a large portion of AHAP actions are well in-hand with activities already underway.

Collaboration is common

There are many players operating in the horticulture environment. Over 130 entities (spanning industry, Māori, science, government and more) were identified as being involved with initiatives captured by the stocktake. Almost all initiatives identified are collaborative, involving two or more parties.

Gaps are spread across the quad partnership

Gaps have been identified across all five pillars. The nature of the gaps is variable. Some of the gaps are large (complex issue, pan-sector), some are medium (require some scoping, relevant to a portion of the sector), some are small (targeted, relatively well-defined and clear-cut or relevant to a small portion of the sector). Many gaps, particularly those that are small or medium, logically fall within the remit of a quad partner. It will likely be most efficient and appropriate for the relevant entity or organisation to progress the action as an aligned partner project.

How can industry get involved in AHAP?

There are many ways to contribute to the AHAP. You can be an AHAP advocate and raise awareness of the plan amongst your networks. It is about providing your input, views and expertise when needed.

You can align your work programmes with the AHAP actions wherever possible. Share your research and findings across the sector. Contributing resources (funding and people) for relevant AHAP projects is important.

We encourage you to proactively connect with the AHAP programme team about any new projects or ideas that will deliver against an AHAP outcome. ●



For more information: visit www.hortnz.co.nz/about-us/aotearoa-horticulture-action-plan or contact AHAP programme manager Anna.Rathe@hortnz.co.nz



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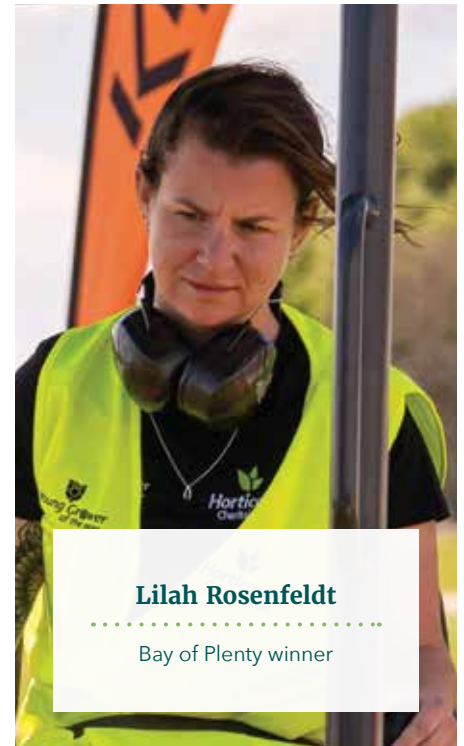
ph: 09 266 2781


Grace Fulford

Hawke's Bay regional winner
and 2024 National Young
Grower of the Year

**Jamie Wells**

National runner-up and
Pukekohe regional winner

**Lilah Rosenfeldt**

Bay of Plenty winner

NATIONAL YOUNG GROWER FINAL IN HASTINGS

The New Zealand Young Grower of the Year is Hawke's Bay's Grace Fulford. She took home the trophy at the awards gala dinner held at Hastings' Toitū Arts & Events Centre on 10 October.

NZGrower & Orchardist staff
Photos by Stori Films

The competition celebrates the success of young people in the industry as well as encouraging others to consider a career in horticulture.

The six finalists competed in a series of practical and theoretical horticulture modules, testing their vegetable and fruit-growing knowledge and skills needed to be successful growers. The finalists also participated in the Ballance Leadership panel event and FMG speech competition.

Grace, aged 27, grew up around her family's Omahuri Orchard in Hastings. She initially headed to university to study engineering but decided that wasn't for her.

She worked in the family business before joining T&G three years ago.

"I came back from university and did some work around the orchard and just fell in love with it," she says.

"It's just such a cool industry to work in. I have learned so much. I love the variety, there are so many different career opportunities and the people are such a big part of it, there are just great people across the sector."

Regional organisers host and run the regional competitions independently, with Horticulture New Zealand hosting the final in a different part of the country each year.



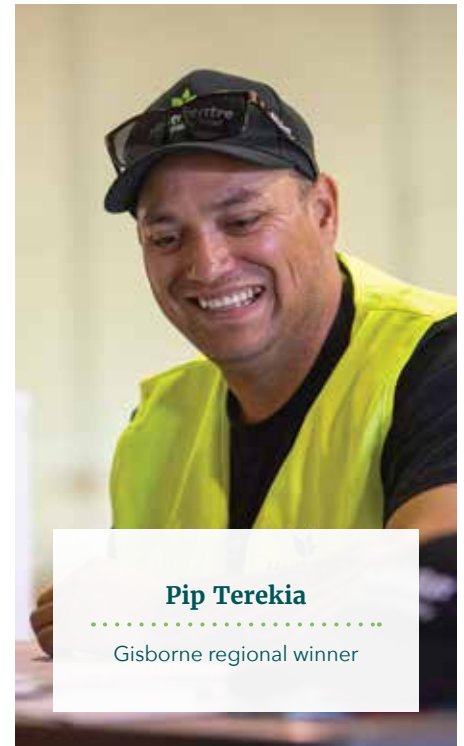
Farrah Richards

Nelson regional winner



Luke St John

Central Otago regional winner



Pip Terekia

Gisborne regional winner

"I really enjoyed all of it and getting to know the other contestants. They were a fantastic group of talented people to be competing against and it was a very close competition.

"It's such a great event at regional and national level. From the judges and sponsors to those taking part, it is so well organised and so enjoyable to be part of."

HortNZ incoming board chair Bernadine Guilleux says the regional and national competitions play an important part in the sector's strong focus on highlighting the scope of careers in the industry, and the opportunities and support provided to nurture the next generation of horticultural sector leaders.

"We are very proud to host the awards in a different region each year. Once again, we saw a very high calibre of entrants showing great skill and knowledge throughout the challenges, and their passion for the sector really shone through in their speeches."

HortNZ acting chief executive Michelle Sands said the dedication of those who organise the regional events drives the success of the competition.

"We are so fortunate to have so many passionate and talented young leaders pursuing careers in our sector, and experienced industry professionals committed to supporting that." ●



*Jewels Connolly
from sponsor
Woolworths NZ and
Chris Herries from
sponsor Horticulture
congratulate winner
Grace Fulford*



The Living Lab's 600m² shelter has space for 48 full-size potted plants - the initial planting is underway now. Photo by Richard Briggs, courtesy of Plant & Food Research

PRECISION SOIL STUDY FACILITY

As horticulture develops new precision tools and growing systems for perennial crops, Te Whenua Tupu, the Living Lab, could be key to validating and calibrating the benefits to production as well as to the wider ecosystem.

John Gauldie

The new Marlborough Research Centre owned facility is based at the Blenheim campus of the Nelson Marlborough Institute of Technology (NMIT). Plant & Food Research operates the experimental facilities.

"We know quite a lot about elements above ground, but below ground is still a bit of a black box," says Dr Damian Martin, Science Group Leader Viticulture and Oenology at Plant & Food Research.

The Living Lab allows scientists to conduct research that not only monitors the plants themselves but also the soil to understand what's happening from the roots through to the canopy. The climate, light, water and nutrients are all tightly controlled to determine the impact of any changes on the productive system.



"Our initial setup will be for a grapevine crop and probably specifically reconstituting the dominant soils on the alluvial plains in the Marlborough region.

"We have the usual suite of sensors - such as moisture probes and mini rhizotron cameras for root and rhizosphere imaging. We will have access points to be able to biopsy the root system at different depths below ground and measure below-ground gas exchange and soil atmosphere conditions.

"What probably makes it more unique is the scale of the lysimeters that we can grow perennial vine and tree crops in - in a semi-controlled protected environment. For each pot we are looking at essentially 2 cubic metres of soil.



Each pot contains 2 cubic metres of soil and a 1.2m rooting depth.
Photo courtesy of Plant & Food Research

So, that's upwards of three tonnes of soil, and about a 1.2 metre rooting depth.

"These pots will have full-sized vines growing in them. We hope to get to somewhere between six and eight years before they'll start to get root-bound."

The pots are also large enough to fit the root systems of mature high density 2D growing systems on dwarfing rootstocks. Down the rows, the pots are on 3.2m centres.

"This represents something of hybrid distance between vineyards and orchards, but importantly is divisible by several factors so that we could study 1.6m or 0.8m (both row and plant) spacings through the use of interplanting. Spacings of 0.8m would mean two vines or trees per pot.

“

We will have access points to be able to biopsy the root system at different depths below ground

"We also have a lot of headroom – 6 metres up to the gantry crane – so we can look at tall growing systems. We can measure the light interception and transpiration.

"A key knowledge gap we know we have is the interaction between the understorey and the crop. In light, stony and sandy soils in Marlborough, as soon as you try and introduce more plant diversity into the understorey, you run into competition for water and nutrients. So, a lot of the work we hope to do will focus on balancing of those objectives.

"There are a lot of parallels between vine crops and pipfruit and stonefruit crops, in terms of competition from cover crop root systems, but also the light environment that's changing through the day for the understorey.

“

We know quite a lot about elements above ground, but below ground is still a bit of a black box

"So we might be using grapes as a model crop, but the general and ecosystem wide responses will be applicable to other perennial crops."

Over time Damian expects the facility will set up experiments that inform the development of Plant & Food Research's digital twin programmes, validating the biological models under precise environments.

Currently there are no plans to study the effects of chemical inputs, but with the closed system Damian says the capacity is certainly there.

"We can collect all the leachate and manage all kind of inputs from a water perspective, fertiliser or whatever the case may be.

"In an ideal world, we would be trying to develop not only growing systems that are more efficient, but also systems that have a triple bottom line sustainability. They're not depleting the resources, and even hopefully restoring the natural capital in the ecosystem. Some of that will come through the management of the tree or the vine crop, but a lot will also come with the right soil and understorey management." ●



Dr Damian Martin,
Science Group Leader
Viticulture and Oenology
at Plant & Food Research



Visual Soil Assessment can be a labour intensive and subjective measure of earthworm populations

EARTHWORM TESTS: NEW SOIL HEALTH MEASURES?

Soil health is front of mind in the Carbon Positive trial at the LandWISE MicroFarm. Carbon Positive is focused on adopting regenerative agricultural practices in intensive field cropping.

Alex Dickson, LandWISE and Dr Nicole Schon, AgResearch

We are comparing a conventional growing system to a regenerative growing system, and with a hybrid growing system. We have 12 plots (each system replicated four times), which are each 0.1ha.

The science question we are trying to answer is “Can soil health and quality be improved by adopting methods used to sequester carbon through sustainable and regenerative practices, while maintaining crop quality and profitability?”

There are many indicators for soil health. The Soil Health Institute recommends three key indicators; 1) soil organic carbon concentration 2) carbon mineralisation potential 3) aggregate stability¹, and we are measuring all three as part of this trial. There are other measures we use. For instance, Visual Soil Assessment (VSA) is a key measure for



us as it captures physical properties of the soil, as well as the number of earthworms as a proxy for soil biology. It is recognised that earthworm abundance can also be a measure of soil health, and it is acknowledged that they are an important part of soil biology.

Earthworms are seen as indicators of healthy soil because they need good soil conditions to thrive, while also aiding aeration and nutrient mixing. Earthworm abundance is important, with higher abundances associated with ‘better’ soils. In pastoral soils we want to see earthworm populations exceeding 400 per square metre. This is less in arable soils, where cultivation has a negative impact on earthworms, and it may be that good populations are over 200 earthworms per square metre.

Where earthworm populations are low, changes in management can be made to improve the living environment for earthworms. These changes are primarily related to improving both the food supply and the physical habitat in which the earthworms live. Food supply can be enhanced by increasing the organic matter available (e.g. increasing soil fertility, use of cover crops). The physical environment can be improved by minimising physical damage and disruption to the soil (e.g. no-till, strip till, minimise pugging events). Other factors that can improve earthworm abundance include improving drainage of waterlogged soils and ensuring that soil pH (acidity/alkalinity) is close to 5.8–6.0. When earthworms are present and the conditions are favourable, populations can increase within a matter of weeks, although it often takes years for earthworms to recover from unfavourable conditions.

We do four VSAs per plot, twice per year as part of the Carbon Positive trial (that's 96 VSAs per year!) While VSA is an effective measure, it is reasonably labour intensive and it can be subjective, particularly when comparing samples to reference photos and looking for slight differences between spade cubes across different treatments. We measure total earthworm biomass and count the number in each sample as per the VSA guidelines. We have not recorded earthworm species which, while it can provide



Pastoral soils may have 400 earthworms per square metre, but in arable soils a good population might be 200

further insight into the ecological diversity and function of earthworms,² often requires expert knowledge.

When Hill Labs announced their new Earthworm eDNA (environmental DNA) test we were very excited. The new quantitative real-time Polymerase Chain Reaction (qPCR) test has been developed to identify the presence of *A. caliginosa*, the most common earthworm species in New Zealand.

NEW

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- A New Zealand first, this development reflects our commitment to supporting farmers and producers on their sustainability journeys

Find out more

📞 0508 HILL LAB 0508 44 555 22



A new trial at the Carbon Positive site in Hawke's Bay is looking at eDNA testing as a soil health measure for cropping



Roger Hill from Hill Labs, which calibrated its new Earthworm eDNA test on pastoral soils

The test has the potential to support the information we are gathering through VSA. More importantly, it also has the potential to provide growers with a convenient way of gathering soil health information about their individual paddocks, as part of their routine annual soil test.

The Earthworm eDNA test offers a convenient way to enhance soil health monitoring, removing the labour-intensive process of breaking the soil apart and picking out and identifying all the earthworms. The test can utilise soil already being collected for soil fertility and measures eDNA – tiny traces of genetic material left behind as earthworms move through the soil. Used in tandem with existing laboratory tests to assess chemical and organic matter properties of the soil, as well as field VSAs to ascertain the soil's physical condition, the earthworm eDNA test provides information on the soil's biological health.

The initial Earthworm eDNA test offering from Hill Labs is for the most common species found in our agricultural soils. The species *A. caliginosa* makes up over 70-80 percent of the total earthworm population in pasture and arable soils. This is an endogeic earthworm which creates many burrows in the topsoil, feeds on organic matter, and improves nutrient availability. There are two other ecological types of earthworms which are also important within agricultural soils. These are epigeic and anecic earthworms, they live at different depths and have differing activity within the soil. Research is ongoing to develop a cost-effective way to routinely analyse for the other ecological types of earthworms.

Earthworm populations do fluctuate throughout the year, so it is important to collect samples at the same time each year, when earthworms are most active (winter to spring). As with all monitoring, annual testing to establish a baseline is recommended, before the frequency of testing may be able to be reduced. The Earthworm eDNA test was calibrated on pastoral soils, with soil samples collected to 7.5 cm depth. In arable systems soil cores are typically collected to 15 cm depth. Data collected from the Carbon Positive trial can be used to explore the effects of the increased sampling depth.

The Earthworm eDNA test may still be in its infancy, but hints towards an exciting future where additional soil measures provide us with a richer understanding of what we can do to maintain or improve soil health. ●



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Plot layout showing the covers used to protect the soil surface (and provide unsprayed controls) during spraying

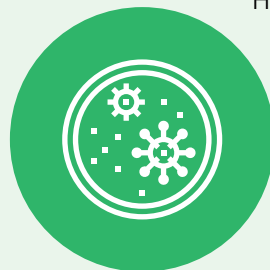
WHAT DO WE KNOW ABOUT **SOIL FAUNA?**

Science is rapidly learning about the soil microbiome. However, research on the animal life in our soil is still in its infancy.

Jo Cavanagh, Grace Mitchell, Hadee Thompson-Morrison : Manaaki Whenua Landcare Research

Most soil fauna studies focus on how to control target pests, but are we missing the bigger picture? How does soil fauna contribute to higher yields? How do these animals interact with beneficial microbes and pathogens? How do we accurately measure the non-target effects of horticultural inputs? Recently Manaaki Whenua Landcare Research conducted a field study funded by NZ Kiwifruit Growers and Zespri to assess the impact of hydrogen cyanamide on kiwifruit orchards - a study that highlighted the extent of the knowledge gaps.

In 2023, the New Zealand Environmental Protection Authority (EPA) updated reassessment of hydrogen cyanamide (HC), a plant growth regulator widely used by the kiwifruit industry for the promotion of bud growth.



This update stimulated a study to assess the effects of HC on soil fauna (animal life) in kiwifruit orchards. In scoping this study, it also became evident how little is known or recognised about the role of soil fauna - beyond earthworms - in agricultural systems in New Zealand, despite these creatures being an essential component of virtually all terrestrial ecosystems.

Soil fauna support ecosystem functions by directly contributing to decomposition and nutrient cycling, and indirectly through engineering activities, as well as by influencing microbial communities and plant growth. In some studies soil fauna was demonstrated to enhance above-ground plant productivity by up to 70 percent, and facilitate litter decomposition by up to 50 percent.



WHAT IS SOIL FAUNA?

Soil fauna is usually categorised by size into **microfauna** (2 to 200 μm), **mesofauna** (200 to 2,000 μm) and **macrofauna** (over 2,000 μm).

The most dominant forms of microfauna are nematodes; springtails and mites are the most dominant mesofauna; and earthworms are the most commonly known macrofauna, but macrofauna also includes ants, beetles, millipedes and many other taxa.



Sampling for soil invertebrates using a split-corer

The hydrogen cyanamide study

The EPA identified a high in-field risk for springtails (*Folsomia candida*, of the class Collembola). The risk was considered to remain non-negligible even with risk mitigation measures in place using standard risk assessment modelling for soil-dwelling organisms. Central to this modelling was laboratory chronic toxicity data for springtails.

However, the EPA's assessment did not fully take account of environmental factors that further mitigate the in-field risks, including the likely more rapid degradation in the field than under laboratory conditions, and additional interception associated with soil surface coverings such as litter or grass.

To address these issues, a field study was designed to provide preliminary information on the potential effects on Collembola and other soil invertebrate populations arising from the spray application of hydrogen cyanamide in a kiwifruit orchard.

The findings

There was minimal variation in most soil parameters between individual plots, between control and treatment plots, and over time.

A marked increase in Collembola abundance, particularly of the hemiedaphic Collembola, at six weeks post-spray was the most obvious finding. Similarly, there was a marked increase in total invertebrate abundance at six weeks post-spray. Overall, mites (Acariformes) were the most numerous organisms at all time-points, while the abundance of ants (Formicidae) was highly variable between treatment plots over time.

The increase in abundance of invertebrates is attributed to seasonal variation, including slightly warmer temperatures, and vegetation (ground and kiwifruit coming into leaf). However, there are limited studies on soil invertebrates in kiwifruit orchards in New Zealand to verify this suggestion.

“

A first step is simply recognising that soil fauna are an important component of our soils and can influence the productivity of our agricultural systems

Todd et al. (2011) assessed the invertebrate community richness in New Zealand kiwifruit orchards under organic and integrated pest management, with sampling undertaken in October, January, and March, using pitfall traps and flight intercept traps. These authors found no difference in the invertebrate assemblages between the two orchard types in the October trapping period and speculated that the timing of the application of hydrogen cyanamide (August) coincided with the period of low invertebrate activity in winter, reducing the impact of hydrogen cyanamide on the orchard fauna.

The outcomes of reassessment decision

Further studies across a greater number of kiwifruit orchards would provide more robust findings, but the preliminary results from this study suggested that the high in-field risk for soil organisms as assessed by the EPA was not warranted.

These findings were provided to the EPA as submissions on the reassessment and presented to the EPA decision-making committee in February 2024. The decision-making committee concluded that based on the weight of evidence presented by submitters - which included many submitters commenting that successful growers depend on maintaining healthy soils in their orchards - with controls in place, the risks to in-field soil organisms from the application of hydrogen cyanamide to orchards are negligible.

Implications beyond kiwifruit orchards

The HC study highlighted the knowledge gaps that exist in basic information on the abundance and diversity of soil fauna, and critically their contribution to healthy soils and ecosystem functioning in New Zealand. A first step is simply recognising that soil fauna (beyond earthworms and pest species!) is an important component of our soils and can influence the productivity of our agricultural systems. A second step is more frequently including soil fauna in our studies of agricultural systems.

This study provides one example of the type of study that might be useful for assessing impacts of agrichemicals in any horticultural or agricultural system. This information in turn may be useful to inform any reassessment of those agrichemicals, or more broadly to better understand the wider potential effect of different management practices.

However, further studies are needed to understand the extent, and significance, of variation in soil fauna across land uses and over time to better quantify the health of our soils and to determine the resilience of our agricultural ecosystems.

There are concerted international efforts underway to both better monitor soil fauna biodiversity, and quantify their role in ecosystem level processes. Specifically, the Soil Biodiversity Observation Network (Soil BON) was launched in 2018 as a part of The Group on Earth Observations Biodiversity Observation Network (GEO BON), a United Nations initiative that aims to monitor Earth's biodiversity, and more recently the Soil BON Foodweb Team (SBF Team) was formed as an extension to Soil BON to link biodiversity of soil invertebrates to ecosystem level processes through a soil food web perspective. Participation in these global efforts would greatly advance our knowledge for New Zealand while also contributing to global understanding.

In the meantime, take a closer look the next time you are digging through your soil - particularly any leaf litter layers - you might be surprised at what you can see!

Thanks to Andrew Barnes (Waikato University) for the use of soil corers and soil invertebrate extraction equipment, and to Andrew and Jacqui Todd (Plant & Food Research) for assistance with study design. A huge thanks to Simon Cook (Cottlevale Orchard) for providing the trial site and assisting with the trial, and to New Zealand Kiwifruit Growers Incorporated and Zespri, who funded this study. ●



Further reading

For the full article on the field study of soil invertebrate populations arising from the spray application of hydrogen cyanamide in a kiwifruit orchard, including the methodology and key findings, please contact the NZ Kiwifruit Growers Inc. and see the upcoming issue of the Kiwifruit Journal.

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BENEFICIAL BIOLOGY

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WHAT ROLE COULD BIOSTIMULANTS PLAY IN OUR FUTURE?

The soil and plant environment is a complex biological system that directly impacts productivity in various ways.

Tayah Ryan : Lighthouse Horticulture

In practice, we often see how factors like soil type, compaction, adverse weather, nutrient imbalances and disease affect what is happening above ground, either immediately or chronically over time. Oftentimes, those stressors are somewhat controllable, but a changing climate, combined with the expansion of horticulture into more challenging or lower productivity soils, and the tightening of input regulations, drive us toward innovative products and practices that can maintain or enhance productivity under difficult conditions.

A holistic approach to soil and plant health has always been key to sustainable horticulture. Core practices such as optimising drainage and irrigation, protecting soil structure, ensuring adequate and appropriate nutrition, selecting the right plant varieties, and applying appropriate pest management techniques remain foundational. However, over the past few decades, there has been a growing interest in the use of novel ag-technologies to maintain yield under challenging conditions. One such product group of interest are biostimulants. Many New Zealand growers already use these products and frequently report improvements in leaf condition and overall plant health. Additionally, they often enjoy reduced reliance on traditional synthetic inputs for maintaining yield, and feel they are doing something good for their soil health.

Unlike fertilisers that provide only nutrients, biostimulants claim to stimulate natural plant processes, enhancing nutrient uptake, nutrient use efficiency, and tolerance to abiotic stressors such as drought, salinity and heat.



Dr Marie Magnusson from the University of Waikato is part of a research team assessing the effectiveness of seaweed-derived polysaccharide products on kiwifruit, apple and tomato crops

They are also defined as having no direct pesticidal effect on pests and diseases. Rather, they are primarily known to be “plant primers” – activating specific molecular and physiological pathways that prepare plants to better tolerate stress. Practically, this mode of action should be considered in their optimal use pattern through the season.

Seaweed-based biostimulants are probably the most researched and widely commercialised. They have been acknowledged for their plant health benefits for decades, with formulations becoming more specialised and concentrated over time. The use of microbial biostimulants, particularly those based on rhizobacteria and mycorrhizae, are also available and being investigated in various crops, designed to enhance nutrient uptake, soil health and disease resistance.

The use of biostimulants to assist in the management of pests and diseases is a challenging space. Legally in New Zealand, products that make explicit pest and disease control claims must undergo strict regulatory approvals and provide evidence of efficacy to the Ministry for Primary Industries under the Agricultural Compounds and Veterinary Medicines (ACVM) Act to obtain the proper registration. However, many biostimulant companies make more general claims about promoting overall plant health rather than direct effects on the disease. As growers, it is worth being aware of what claims are being made in the market. While they are unlikely to do any harm (and have the potential to strengthen the plant), biostimulants should not be used in place of registered control options with proven efficacy in combination with appropriate cultural practices.

Despite the promise of biostimulants, the category is often met with scepticism. At times, broad claims, little scientific evidence, unclear mode of action and a lack of transparency of parent material and active ingredients from some companies continue to plague the industry. One challenge is that many rely on generalised information based on research in reference crops.

“
As growers, it is worth being aware of what claims are being made in the market

Frequently, these studies are performed overseas, often in lab or controlled greenhouse conditions, which may not directly translate to the realities of applications in the field, especially under New Zealand's unique soil and climatic conditions. Field trials are essential to demonstrating the effectiveness of biostimulants in real-world conditions but achieving significant and reproducible differences between treatments can be challenging for a wide range of reasons. This makes research costly and tougher in terms of the return on investment for companies.



Plant & Food Research principal scientist Dr Joel Vanneste, part of the government funded study of seaweed species, says elicitors act like an insurance policy, protecting plants against a threat before it arrives

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Biostimulants can be loosely categorised into microbial and non-microbial (Ciriello, et al., 2024)

Looking further abroad, there are continued efforts to regulate and standardise the biostimulant industry. Several councils exist globally which aim to unite key stakeholders in approach and any future regulation. Europe opted for heightened regulation, introducing the European Commission’s Fertilising Products Regulation 2019/1009 to ensure that biostimulants are subject to more rigorous standards. This regulation was designed to give growers greater access to biostimulants while also requiring that any claims around abiotic stress reduction be backed by scientific evidence. Such regulatory frameworks are likely to influence biostimulant development and usage in other countries in the future, including New Zealand, where the biostimulant market is still developing.

“
New Zealand’s horticultural industry needs to be keeping abreast of innovation and research

The future of biostimulants in New Zealand holds great potential, but there are still important questions to be answered. Is there enough interest and funding here to develop biostimulant products that address niche issues across New Zealand’s diverse horticultural industry? Do industry groups see enough potential to explore co-development opportunities to solve their specific challenges? It was encouraging to see the Ministry of Business, Innovation and Employment Endeavour Fund

grant awarding \$11.4 million towards the study of New Zealand’s seaweed species. Early research by Plant & Food Research and the University of Waikato has shown promising results, suggesting that specific seaweed extracts applied to kiwifruit plants may have an elicitation effect, likened to activating the plants’ immune systems, making them a potential candidate for controlling the disease *Pseudomonas syringae p.v. actinidiae* (Psa).

New Zealand’s horticultural industry needs to be keeping abreast of innovation and research both here and abroad. As of mid-October, there is currently no mention of any New Zealand delegates attending the Biostimulants World Congress in Miami this year. Although this won’t represent the multi-national companies with local operations (e.g. Syngenta, Bayer etc.), having New Zealand representation from industry and scientific communities as well as commercial entities, is crucial.

Ultimately, the key to harnessing the full potential of biostimulants lies in identifying opportunities locally and globally, coupled with robust local research. If the industry is to grow, we need to move beyond generic claims and provide growers with clear, evidence-backed comparisons of how different products perform under local conditions. ●

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Understorey plantings with a biochar mix help boost beneficial soil biology

KIWIFRUIT ORCHARD COVER CROPPING

A recent project uses regenerative practices with cover cropping in a kiwifruit orchard – working with nature, not against it.

Contributed by Trevelyan’s and A Lighter Touch

A pioneering project focussed on the principles of regenerative agriculture is identifying that understorey planting (shrubs between the canopy and floor) can benefit kiwifruit. The recent results demonstrate to growers that this practice can help boost beneficial soil biology.

The project started two years ago when Trevelyan’s Pack and Cool kiwifruit technical manager, Dr Pranoy Pal and head of technical, Gordon Skipage, were approached by a kiwifruit grower in Pukehina who had concerns about soil erosion in a section of their orchard.

Kiwifruit canopies are notoriously dense which means there is little light penetration for five to six months of the year, making growing an understorey challenging. With a PhD in soil science, Pranoy investigated establishing an understorey to aid with soil retention and soil improvement, using a 16-species shade-tolerant seed mix that was already commercially available.

In 2022, Zespri co-funded with Trevelyan’s, the first stage of the Pukehina understorey project. In a one-hectare Gold3 kiwifruit block growing in a pumice soil, Pranoy’s expertise with biochar was utilised when planting the understorey. Four trial areas were created:

- | | |
|--|---|
| <p>1</p> <p>An untreated ‘control’ area</p> | <p>2</p> <p>An area that contained a mix of biochar and the seed mix</p> |
| <p>3</p> <p>A biochar only area</p> | <p>4</p> <p>A seed mix only area</p> |



Growing an understory under kiwifruit canopies with little light penetration for half the year is challenging

The understory was planted in mid-September and was well-established within two months, despite significant rain days after planting and a heavy frost in the first three weeks. Kiwifruit thrives in fungal-dominant soil, and soil testing of the four trial sites showed a lift in the active fungi within three to four months. Further testing revealed that the benefit continued for six to eight months following the planting; the leading results in test area two were the biochar and seed mix combination was applied.

“

In these early stages, there is a lot to learn, and Pranoy is keen to share the knowledge they gain

Biochar is a charcoal-like substance produced by burning organic material from agricultural and forestry wastes in the absence of oxygen i.e., pyrolysis. Biochar has 'reception sites' in its microstructure that can help increase the soil's CEC (cation exchange capacity), increase soil biology and acts as a slow-release fertiliser when combined with conventional fertilisers. In 2024, Trevelyan's organised a Field Day to share their knowledge and to share in a practical way how biochar is made on an orchard or farm; this was well received by several kiwifruit growers. (Pranoy sits on the committee of BNNZ (Biochar Network New Zealand) that promotes the education, production and application of biochar in the New Zealand context.)

In 2023, Trevelyan's was fortunate to receive further funding from our industry partners Zespri and Plant & Food Research - who invested significantly. This allowed us to trial ten more treatments (same orchard, different location). The same seed mix was used from the 2022 trial, with a combination of treatments including biochar and compost, biochar only, and compost only. This work was carried out over the past season. Initial 2023-24 data suggests that the 'biochar+seed mix' treatment had the highest dominance of ground cover, followed by the 'biochar+compost+seed mix' treatment. Biochar applied in combination with compost and seed mix showed lower levels of mineral N (i.e. leachable nitrogen), and higher levels of available carbon (C). These changes in soil chemical attributes corresponded with increased soil fungal and bacterial activities in these respective treatments. The fruit from these experimental bays was also tested, however, it did not show significant differences in elemental analyses at this stage.

The main principles of regenerative agriculture include minimum tillage, diverse crop rotations, cover cropping, compost or manure applications, animal integration, and agroforestry. Adoption of any of these practices does not require a significant time investment, however, the gains of beneficial soil biology can be slow and gradual. Moreover, Pranoy believes, the main benefit of regenerative agriculture is increased resilience - which is 'tricky' to prove scientifically. Increasing the resilience is the key to maintaining productivity in the changing climate in the near future, says Gordon.

Recently, Trevelyan’s received confirmation of continued funding for the 2024–25 season from Plant & Food Research, which is duly acknowledged and appreciated. The next stage of the project is now focused on identifying which plants, specifically, can flourish in lower sunlight under the canopy, and how to utilise the understorey not only for soil health benefits, but also to enhance beneficial insect populations.

One approach is to use moveable pods and alternating rows of flower species in the understorey, and another approach is to plant flower species on the headlands and assess the dispersal of the beneficial insects into the orchard. This should provide a continuous source of shelter, nectar, alternative food and pollen that should attract and maintain beneficial insect populations. We have now already established flower rows in a strip-male kiwifruit block and placed four movable pods under the vines. We aim to assess the effect of these interventions on the quality of the fruit prior to harvest.

Pranoy shared: “The challenge is the amount of shade in the understorey. We can probably address that issue by cycling the moveable pods; three days in the sun and four days under the canopy.”



Trevelyan’s Pack and Cool Kiwifruit technical manager Dr Pranoy Pal and head of technical, Gordon Skipage



Top class Ohakune silt loam flats

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If you are looking for a clean slate, this 508-hectare farm held in seven titles offers the option to purchase a combination of titles, giving a large area of flat contour (approx. 105 hectares effective) that will suit the numerous vegetable crops the area is renowned for, such as potatoes, carrots, parsnips, and brassicas. It can also continue as a support country for the remainder of livestock breeding/ finishing.

The property has abundant natural water and a superbly contoured contour with scale, along with obtaining the necessary resource consent to change this land use to a horticultural/market gardening enterprise. Infrastructure includes a generous 282sqm 4-bedroom dwelling, a 21x10m lockable implement shed constructed in 2018, an excellent 2008 Faulknor four-stand woolshed with covered yards, cattle yards with all-weather load-out, and a metal road throughout most of the titles.

Tender closing 11am, Thurs 5th Dec 2024
Jamie Proude 027 448 5162
James Bolton-Riley 027 739 1011



Testing revealed a lift in active fungi that continued for six to eight months following the understorey planting

“We do know that the understorey planting we’ve completed so far has helped soil biology. However, we also want to investigate that if we use tools like the moveable pods, will this increase the beneficial insects in the orchard for pollination and the predation of pest insects?”

The timing of flower row species is also a consideration. It is essential to establish the flowering understorey in the three months leading up to mid-spring and early summer, so that it assists with pollination and pest control. A second planting of non-flower species would then follow as the kiwifruit canopy filled in, aimed at increasing the organic carbon in the soil.

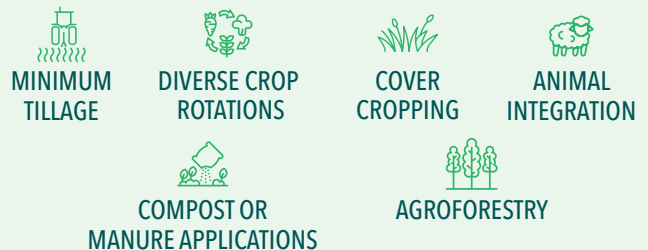
In these early stages, there is a lot to learn, and Pranoy is keen to share the knowledge they gain. He also encourages other kiwifruit growers to try it, and then feed their experiences back into the work that Trevelyan’s is doing.

“One of our Trevelyan values is Work Smart and a part of that is the continuous cycle of improvement; evolve, adapt and innovate. If we keep this mindset, we just may achieve!” says Pranoy.

With kiwifruit orchards expanding into new geographic regions with different soil compositions than the traditional growing areas, Trevelyan’s sees a greater need for developing these types of cultural practices on orchards.

Pranoy shares, “As our knowledge develops, we’d like to see tailor-made seed mix recipes that address the specific benefits an orchard needs; a custom approach for any orchard, whether it’s a new block or an established orchard.”

THE MAIN PRINCIPLES OF REGENERATIVE AGRICULTURE INCLUDE:



In conclusion, Pranoy understands the importance of working with others who are like-minded and values the knowledge and resources shared from a variety of sectors. To date, these have included viticulture cover cropping and the work through the A Lighter Touch programme in vegetable crops and perennial fruit trees.

“We’re keen to bring together a diverse group of growers, early adopters, people who have tried cover crops, as well as those who are interested in what we’re doing, to share and grow knowledge in our sector.”

The authors would like to acknowledge the help from the service providers and knowledge exchange and fruitful collaborations with Plant & Food Research, Zespri, A Lighter Touch, Olivia Prouse (Cropping Services Limited), Pastoral Improvements, SoilPro, Soil Food Web and Kiwiland Orchard Services. ●



BEAUTY OF THE UNDERSTOREY

Could plantings like the above trial plot become a regular sight through the rows of fruit orchards in New Zealand?

Interest is growing across the sector for agroecological understorey plantings to replace the still ubiquitous weed strip. Last month Summerfruit NZ technical adviser Richard Mills, who has a trial plot of understorey plants in Hastings, organised a meeting in Hawke's Bay of interested sector organisations and stonefruit, pipfruit, grape, citrus, berries and kiwifruit growers.

Research continues through A Lighter Touch, Plant & Food Research and others to identify annuals and perennials that complement rather than compete with the tree, and to identify the differences between regions, crops and cultivars. While the focus began with compensating for the loss of insecticides, there is particular interest alongside the higher beneficial insect abundance in the side benefits that include more organic matter in the soil, reduced labour spent mowing and spraying, less diesel consumption and less soil compaction. Not to mention the potential marketing value of beautiful biodiverse blocks! Interested? Get in touch with Richard Mills at: richard.mills@summerfruitnz.co.nz



Co-hosts Ryan Bridge and Laura Tupou with Glenn Forsyth on the set of the AM Show

GROWING A HEALTHY INTEREST IN FRESH PRODUCE

Taupō man Glenn Forsyth is on a mission to get more people to eat fruit and vegetables. HELENA O'NEILL talks with Glenn about what drives public perceptions and the value of telling grower stories to the public.

Dubbed 'First Up's Minister of Fruit and Veggies', Glenn Forsyth has held a twice-weekly radio slot on RNZ for five years.

It's an early timeslot (5.25am) but Glenn always sounds upbeat as he rattles off prices, what's in season, and an array of fruit and vegetable tips. On Mondays, his slot features a grower or member of the horticulture industry - on 23 September he featured 5+ A Day's monthly update - while on Fridays he unveils the 'fruit of the week'.

"We really like 5+ A Day, they put out some really great stuff."

First Up is a news and current affairs programme with Nathan Rarere on weekdays from 5am to 6am on Radio New Zealand (RNZ).

Glenn's day job is in sales for NZ Gourmet, and his role on RNZ's *First Up* is a voluntary one. Glenn says the radio slot is a way to honour his promise to his late father, Jack Forsyth,



to continue his mission to get more Kiwis to eat fruit and vegetables. Glenn's dad delivered weekly rapid-fire produce reports on the radio for more than 20 years between the 1970s and 1990s.

"Dad used to say we may not be the wealthiest country in the world, but there's nothing to stop us being the healthiest."

In the 1990s Jack Forsyth released his book *Scrumptious Tucker* which featured recipes alongside information about all kinds of fruit and vegetables including their availability, nutritional value and a bit about their history. Glenn hopes to produce his own book along those same lines but updated with the range of fruit and vegetables available in the country today.

Glenn says he reached out to Horticulture New Zealand to encourage growers and other industry players to share their stories with the country.



Glenn Forsyth admires fresh celery



Nathan Rarere (left) hosts First Up on Radio New Zealand, featuring a five-minute time slot with Glenn Forsyth twice a week

"We would love to be able to talk about a grower every Monday morning on *First Up*. We can pick up the phone and ring them, or they can email through their story if they don't want to have a chat. We can create a story from there.

"Some of the feedback we get from listeners is that they really want to know where it [fruit or vegetables] is grown. They get really excited about New Zealand produce, of course, they understand that we import a lot of stuff like bananas, grapes, oranges and pineapples. They also love to hear what's in season, where the bargains are, and what to do with it."

“
We would love to be able to talk about a grower every Monday morning on *First Up*

Glenn is a big believer in buying seasonally and shopping around to find the best prices.

"Shop around, buy seasonally, and don't waste product - buy what you need and eat all of it. Half your broccoli weight is stem, if you peel that and slice it, and put it into a stir fry, it's a tasty vegetable. It's all so nutritious! One of Dad's sayings at home was that one of the best-fed mouths in the household was the waste disposal sink."

"When we were growing up back in the 1980s when it came to telegraph cucumbers, Hass avocados, capsicums, tomatoes - we didn't know what they were in winter."

Next year Glenn is embarking on a second venture with RNZ, to showcase growers and fresh produce from around the country in video form for social media platforms. He says RNZ producer and journalist Leonard Powell is a switched-on young man who is skilled with a camera.

"We're aiming to make the industry more accessible and getting people to eat more fruit and vegetables. We're going to go to markets, growers, show people how to do things from what to cook and how to cut an avocado safely ... all these great things. Let's get together and really get our fruit and veggies out there."

When asked why those in the horticulture industry should take part in both the radio segment and the new video format, Glenn says it's a win-win for both growers and the audience.

"The value for people to hear about growers is that they will get to hear what's in season, and they might learn about something they're not familiar with whether it's finding out about kohlrabi, red-fleshed kiwifruit, or that it is okay to eat the skins of potatoes, kumara, crown pumpkin, for some extra roughage and nutrition. Hopefully, they will try these things also."

Glenn hopes to hear from growers and suppliers from across the country for *First Up's* radio slot or the upcoming video series.

"We must help our growers - a lot of growers are either going bust or banding together to survive. As an industry, it's about everyone - the growers, the markets, the sellers."

"Next year we're trying to do so much more." ●

HELPING HANDS ACROSS THE PACIFIC

Glenys Parton, the technical director of industry systems for NZ Avocado, has spent her career helping solve science problems. But in recent years, her focus has shifted from scientific research to something equally important – humanitarian work.

NZGrower & Orchardist staff

After years in soil analysis, veterinary diagnostics and dairy cattle fertility research, and recently horticulture, she found that the principles of scientific investigation translated surprisingly well to the world of service.

In 2015, after moving to the Bay of Plenty and joining the Rotary Club of Tauranga Sunrise, Glenys became deeply involved in ROMAC (Rotary Oceania Medical Aid for Children) – a Rotary initiative that provides life-saving surgery to children from Pacific countries, care they cannot access in their home nations.

Her first patient, Vinna, arrived from Tanna Island in Vanuatu in 2017, with a double fracture in her femur. Vinna was referred to ROMAC by then Recognised Seasonal Employer (RSE) scheme recruiter Kylie DellaBarca Steel. Under the care of orthopaedic specialist Dr Richard Willoughby, Vinna's journey was long and complex. She spent more than two years in New Zealand, as Glenys and her team worked through both cultural and medical challenges. But in the end, Vinna returned to her village fully healed, carrying with her the gratitude of a life restored.

Vinna's story is one of many. ROMAC, supported by Rotary and private donations, regularly brings children from Vanuatu to New Zealand for surgeries, from orthopaedic procedures to life-saving heart operations. These children typically stay for a few months, receiving the care they need before returning home to their families.

Recently, Glenys also spearheaded an effort with the Tauranga Sunrise Rotary Club to collect unused school



A chance meeting between Gill Cameron and Glenys Parton (pictured with staff at Cameron Orchards) led to books for Vanuatu classrooms

books from local schools, initially in response to a devastating cyclone in Santo, Vanuatu in April 2020.

With the help of returning RSE workers – seasonal labourers from Pacific nations – the books begin their journey to new homes in Vanuatu classrooms.

However, the Covid-19 pandemic brought its own challenges. As Covid disrupted supply chains, the collected books sat in storage for a number of months, leaving the project in limbo. Then, a chance meeting with Gill Cameron, wife of Zespri's former Chairman Bruce Cameron, on a flight to Christchurch, opened a new door. Gill connected Glenys with their people and culture manager, Darelle Jones, and in August, a tandem trailer loaded with books finally began its journey to Tanna Island.

For Glenys, these small victories are heartening. As she watches the RSE scheme grow, most recently highlighted at the Horticulture Conference in Tauranga, she sees how interconnected the world is. And it's those connections, from a conversation on a plane to a surgeon's skilled hands, that make all the difference. ●



To find out more about ROMAC (Rotary Oceania Medical Aid for Children) in New Zealand and Australia visit www.romac.org.au

ADAMA AND GROCHEM JOIN FORCES

Principals see broad advantages for the market.

ADAMA New Zealand chief executive Lester Deighton says ADAMA's acquisition of Grochem will benefit not only both companies but strengthen the agriculture and horticulture sectors in New Zealand.

"We saw an opportunity to build on our horticulture offering here in New Zealand and also deliver advantages to the businesses we work with including broadacre customers across New Zealand. Grochem's unique formulations and their drive to solve issues no matter how big or small for growers is the core reason we invested in this business.

While the acquisition agreement occurred in 2022, transition and integration has been part of a carefully timed and planned process, Lester says.

"January 2025 is the official launch of the new business model. For our valued customers, it will be business as usual, with our teams looking to add further value to the strong relationships they currently have.

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Grochem's reputation is built on exceptional products, strong brand, and close relationships with local growers and distribution partners

Grochem pioneered sustainable crop solutions for New Zealand's local market, specialising in pipfruit, kiwifruit and vineyards, all cornerstones of the country's exports and our economy. The company develops, manufactures and sells products, with a portfolio which includes plant growth regulators, biosolutions and plant nutritionals. Grochem has 150 years of experience in the current Grochem team supporting technical sales and grower fruit and crop health.



ADAMA New Zealand
CEO Lester Deighton

Lester says ADAMA is a leading global crop protection company, providing solutions in a wide range of crops to combat weeds, insects and disease, "so farmers can get on with what they do best: feeding the world."

ADAMA is based in Nelson, with a specialist team working throughout New Zealand, while Grochem has its New Zealand headquarters in Porirua.

Lester says the two companies coming together is logical. "Joining with Grochem is in line with ADAMA's aim to increase its activities in the emerging market of biological products, and to increase an offering that supports sustainable food production.

"Grochem's reputation in New Zealand is built on exceptional products, strong brand, and close relationships with local growers and distribution partners.

George McHardy, managing director of Grochem also sees clear benefits. "Joining forces with ADAMA gives us a larger global reach and allows our products to reach a wider audience. We are pleased to become part of ADAMA who have the same value system and care for customers that has always been part of the Grochem brand."

ADAMA intends to maintain and nurture the Grochem brand and culture, and the Grochem team and their focus will not change - continuing to offer dedicated technical support to customers and growers.

ADAMA are committed to this approach. "Grochem have a proud history and have played a pivotal role in the New Zealand horticulture sector. This is an exciting and positive time for all involved, and signals a bright future for ADAMA in New Zealand." ●



For more information on the acquisition please contact Lester Deighton at lester.deighton@adama.com or phone **03 354 8275**.





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