NZGROWER & ORCHARDIST®

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HORTICULTURE NEW ZEALAND

ŪAWA OUTING INTO ORCHARDING

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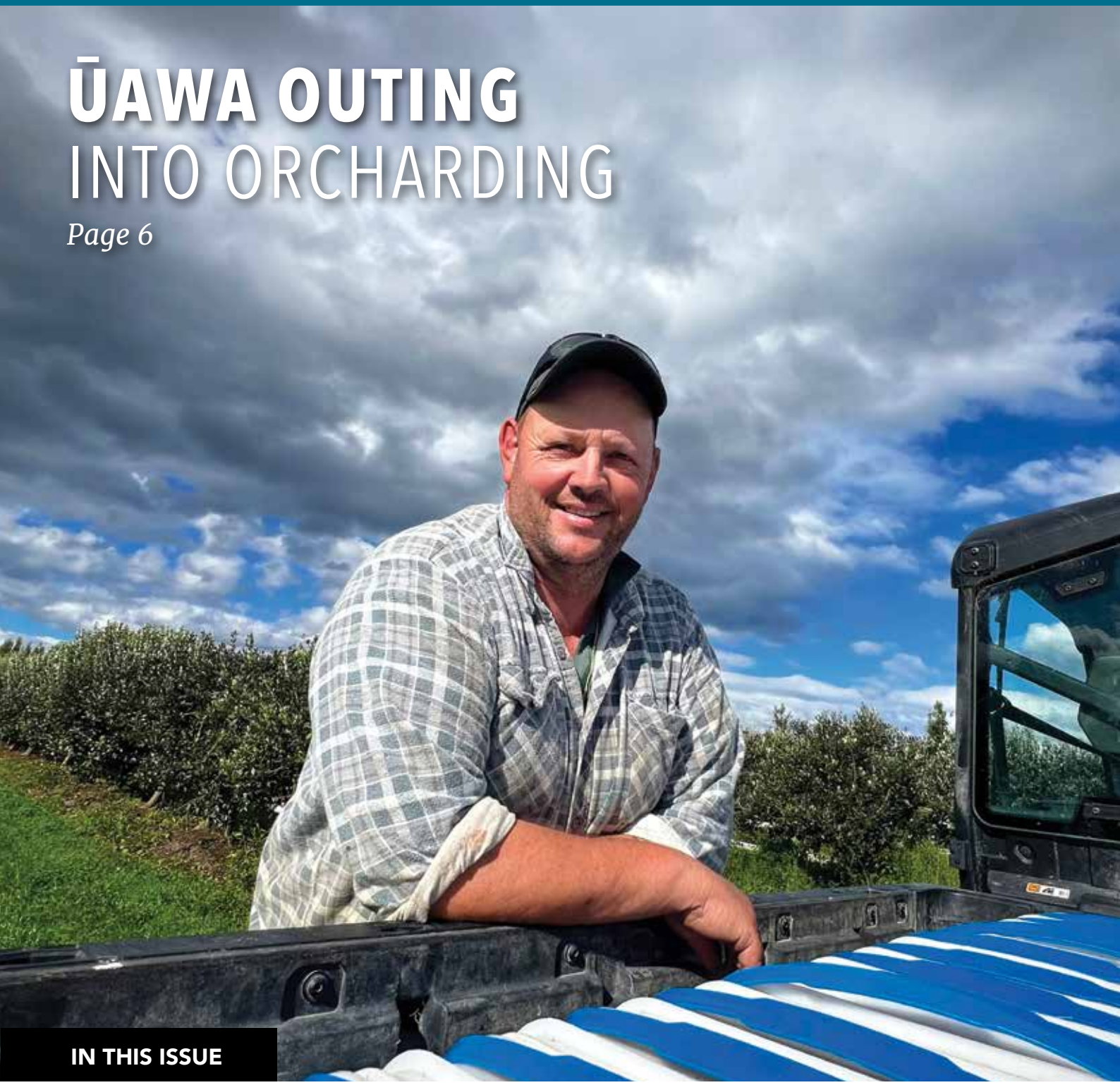

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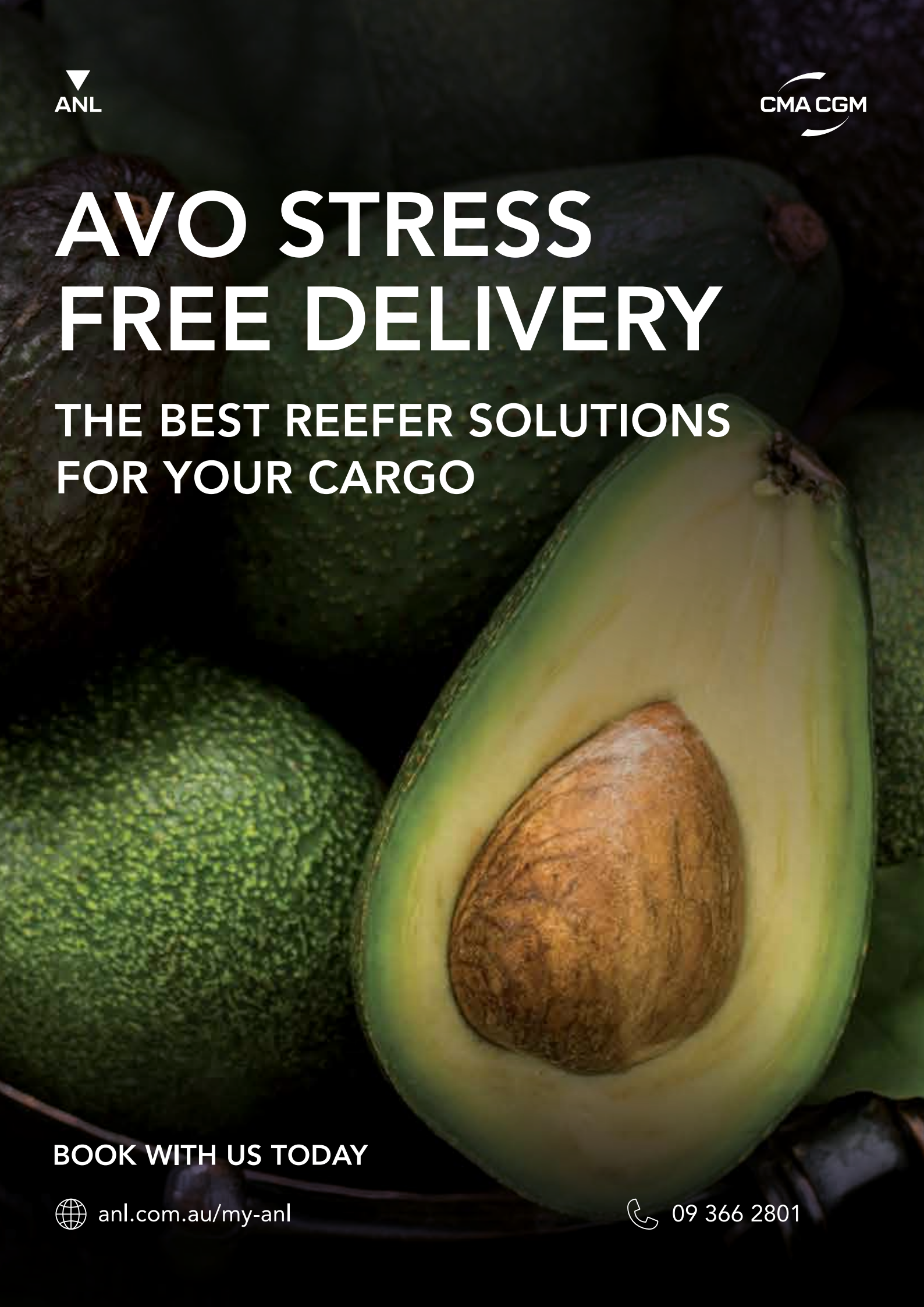
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Feijoa grower Joel Lincoln from Ūawa Produce. Read more on page 6.
Photo by Kristine Walsh

NZGROWER & ORCHARDIST

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FOR THE GOOD OF THE WHOLE SECTOR

As we settle into the year, the Horticulture New Zealand Board is reflecting on where we are at and where we are going.

Bernadine Guilleux: HortNZ chair

Effective governance draws on the collective wisdom around the table – and if there's been one consistent value among HortNZ directors, it's their commitment to achieving outcomes for the betterment of New Zealand's growers.

Our industry encapsulates such a varied range of crops and grower views, and it is important that the makeup of the HortNZ Board reflects this if we are to lead the organisation for the benefit of all growers, without favouring one vegetable or fruit.

Wearing this hat is unique to other roles in industry governance – and we're looking for growers who support this pan-sector commitment to join us.

We have three vacancies in this year's director elections, following the retirement of Barry O'Neil and Hugh Ritchie, both of whom have completed their maximum terms, as well as Kathryn De Bruin, who has chosen not to seek re-election.

If this sounds like you, I encourage you to stand. If you know someone with valuable experience who could be a strong voice for growers, please encourage them to step up too.

We are especially keen to hear from candidates with solid experience in areas such as finance, risk management (including biosecurity), science, technology and innovation, Te Ao Māori, education and skills development, or corporate law and governance.

To be eligible as a grower-elected director, you must be an active grower, a director or shareholder of an active grower, or an employee of one. Nominations close Friday 9 June.

For those who are enticed by the above yet still new to governance, look out for the associate director opportunity. This is a fantastic development pathway for a future leader to join the HortNZ Board, gain governance experience, and prepare for future leadership roles.

The associate director will be mentored by experienced directors, undertake governance training, and actively participate in board meetings. While it's a non-voting role, the board values full participation and welcomes constructive contributions.

Finally, a big thank you – Barry, Hugh, and Kathryn – for your dedication to serving the sector during your time on the board. Your leadership and support of strong, effective governance has made a real difference. ●

Find out more about the board elections on the HortNZ website **www.hortnz.co.nz**


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WHAT WE CAN LEARN FROM SINGAPORE

Singapore's food security strategy and collaborative approach highlights lessons for improving New Zealand's primary sector through unity and agility.

Kate Scott : HortNZ chief executive

I recently returned from an eye-opening week in Singapore, part of a FoodHQ-led delegation looking at land use change and diversity in food systems.

We had a great group of around 25 people – from farmers to industry leaders – all there to see what lessons we could bring home to New Zealand.

Singapore is a remarkable place, and not just because of the traffic and noise.

For context, the entire country is roughly the size of Lake Taupō, but with a population only slightly more than New Zealand – around six million people.

However, the challenge facing Singapore is massive – how to feed their people, with almost no land of their own to grow food or raise animals.

What is apparent to me is the sense of purpose that underpins Singapore's approach to food security.

Horticulture™ New Zealand Ahumāra Kai Aotearoa

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The Singaporean Government has developed a plan billed as "30 by 30". This is a bold goal to produce 30 percent of their nutritional needs locally by 2030.

At the heart of this ambitious strategy is collaboration between government, business, and research – and just as – important, real clarity. There is a recognition that everyone needs to pull in the same direction.

That sense of unity is something I have been reflecting on since landing back in New Zealand.

In New Zealand, we have plenty of land and natural resources. In stark contrast, Singapore has been forced to innovate, embracing technology, partnerships, and a whole of country approach to address its food security challenges.

So how do we create a 'NZ Inc.' approach for our primary sector? What will it take to shift our mindset from going it alone, and at times talking past each other on various issues, to growing stronger together to tackle our own issues?

Is this idealistic? Maybe. But if we could better harness our collective energy, skills, and resources, just imagine the impact we could have in New Zealand and overseas.

Another thing that stood out for me in Singapore was agility. As growers, we're facing a volatile and fast-changing global environment, and that pace has intensified following the shift in United States trade policy.

In Singapore, they have long recognised the importance of being able to plan, pivot and adapt – that's what has led to their rapid development as a nation over the last 60 years.

What does that mean exactly?

Ultimately, Singapore's food strategy isn't just about lofty goals and visions – it's looked to be nimble and responsive to emerging risks and opportunities.

For me, that means not always waiting around for that right policy, asking the government for something or perfect conditions – it's about moving fast, collaborating, and making things happen together.

If we don't embrace that same agility in New Zealand, there's a real risk we'll be left behind.

We all know our horticulture sector has immense potential. But to realise our ambitions, we need to work more collaboratively, invest in innovation and maintain our own clear, shared purpose.

Singapore has shown that size doesn't limit ambition – and neither should it for us.

The time is right for every New Zealand food producer and group to think bigger, act smarter, back each other and work as one.

If we do so, we can ensure New Zealand's primary sector will go from strength to strength, delivering value not just for farmers and growers and our economy, but also our environment and our regional communities.

Joel Lincoln chose feijoas as a hardy, easy-care permanent crop for a multi-member family business that aimed to be good growers and good neighbours for their East Coast community

EAST COAST WHĀNAU **POWERS ŪAWA PLANTING**

When faced with a challenging piece of land at the East Coast settlement of Ūawa (Tolaga Bay), Joel Lincoln called on whānau power – and feijoa trees – for a solution that was great for the community as well.

Kristine Walsh

Sheep and beef farmers based at Whangara, Joel and wife Anthea had an interest in 8ha of family land up the road at Ūawa (Tolaga Bay).

It's a great piece of land – elevated but still flat – that had been in the family for a long time.

"But it is really close to neighbouring homes and the corn and other cropping we used to lease it out for was causing a dust problem for locals," he says.

"So about a dozen members of our family got together and formed a company, Ūawa Produce, that could get involved in permanent cropping with the aim of making good use of the land, while looking after the community at the same time."

It didn't happen overnight.

"Because I would be managing it on top of my commitments at our (Whangara) farm, we didn't want anything that would be too demanding in terms of year-round commitment," Joel says.

"So in 2015 we went to a feijoa conference in Gisborne to learn more about it. We didn't want huge profits – just enough to make it worthwhile – and cropping feijoas seemed like a bit of us."

Armed with their original 8ha together with 2ha leased from the neighbouring (and "really helpful") Glover whānau, Ūawa Produce ordered trees from Waimea Nurseries.

In 2017 they began planting their mix of early-fruiting Kākāriki, Kaiteri and Anatoki trees, over the next 18 months establishing lots of 2500, 1500 and 1000 plants.

And apart from a bad weather blip that cost them a couple of hundred trees (which have since been replaced) those trees have done well, the fruiting timeline of two years meaning all are now on stream.

"Since then the volumes have been building nicely," says Joel. "Last year we picked about 55 tonne, and that was after a difficult flowering at the end of 2023. Of those, we got close to 60 percent Tag One and just under 40 percent Tag Two, so not a lot of rejects."

This year they picked around 72 tonne of similar quality so, not surprisingly, Joel says he's happy with Ūawa Produce's 2025 production.

Once it is harvested, the fruit is trucked to Gisborne packhouse JRP Citrus while marketing/distributing company Fresh Direct takes care of most of the sales.

Fresh Direct feijoa rep (and NZ Feijoa Growers Association board member) Ivan Nola says the biggest markets are in Christchurch, which is not great feijoa-growing country, and Auckland where, even near the Oratia orchard where Ivan grew up, urban-growth has taken its toll on domestic fruit trees.

Ūawa Produce selected a mix of early-fruiting Kākāriki, Kaiteri and Anatoki feijoas for the 5000-tree Tolaga Bay orchard

With about 80 percent of the country's feijoa crop coming out of Gisborne, Ivan says best prices are achieved early in the season so it's important to get the fruit off the trees and on the market as soon as possible.

"This year the season started two weeks earlier than usual, which did take some growers by surprise and meant prices were a bit lower because it all came on-stream at the same time," he says.

"But while volumes in some places are also a bit lower because of last year's bad weather, the quality is good and we've had no trouble moving the product."

In terms of the success of the Ūawa Produce harvest, Joel Lincoln says there have been some learnings along the way and he's always keen for more.

On the plus side, local woman Virginia Watts lends her expertise to many of the day-to-day tasks on-orchard, including managing a reliable crew of others – also local – to cover the intense early harvest.

"But we could do even better there," says Joel. "There is so much picking to do in those first couple of weeks we might have to call on some family to help."

In delivering the harvest, some positive changes have been made.

The suspension on their Can-Am Side-By-Side off-roaders makes for a gentle journey and minimises fruit damage, Joel Lincoln says

The netting that was an early investment has remained rolled up these last couple of years as the team realised that if the fruit was ripe enough to drop, it was too ripe to have longevity on the market.

And pickers have moved to a system using 15-litre buckets that are transferred into 20-kilogram crates on the back of Ūawa Produce's new Can-Am Side-By-Side off-roaders, which transport them for transfer into 25-crate pallets.

"Because the two Can-Ams have suspension they are kinder on the fruit, as is the pallet system," Joel says. "It also makes the work much more manageable for our team so it's a good result on all fronts.

"We're learning something new every year and that's the great thing about the industry. There's a lot of good people around and if you're stuck on something, they are only too happy to help."

With the frenzy of harvest over, the orchard was left for a few weeks so locals could safely help themselves to any late fruit.

After that, the schedule was for a quick spray of the plant mounds to keep weed invasion to a minimum; hedge-style pruning top and sides to contain excessive tree growth; and a gentle thinning of interior branches to keep an open growth habit.

"We did think we might have to spray for Botrytis last year but we managed our way out of it, which was a good result," says Joel. "Because we have homes close to our boundary we don't want to be doing a lot of spraying… it's all part of being a good neighbour."

The approach all seems a bit East Coast-casual but it appears to be working. Apart from a couple of less-elevated areas where wet feet has impacted tree vigour, Ūawa Produce has developed 10ha of healthy, hardy trees with increasingly heavy fruit-loads.

But while their outing into orcharding has been a success, Joel says the most significant impact of the project has been making good use of land that was once an irritant to the community.

The combination of permanent cropping and decent ground cover has completely removed any issues with dust which, being so close to neighbouring homes, was the main aim, he says.

At the same time they've built a whānau business that provides jobs – albeit seasonal – and generates good quality fruit, year after year.

And eight years after the first trees went in, the family members involved will now see some return on their initial investments.

"To date, we've used orchard income to cover capital investment and to build a rainy-day fund but this year we're going to be able to pay a dividend," says Joel.

"It's been a bit of work to get to this point but we've got there even earlier than we thought we would, and that's been really satisfying."

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After taking over from AppleFields, the Campbells rebuilt the orchard into the first certified organic apple exporter in Canterbury

EVERYTHING BUT THE TIME

There is a clear market niche for organic heritage varieties, says Christchurch grower Hamish Campbell. But like many generational orchardists, his family is facing some tough decisions as they try to balance their commitments.

Tony Benny

Popular heritage varieties like Cox's Orange, Golden Delicious and Granny Smith are likely to be in short supply in Christchurch as the Campbell family, who have specialised in filling this market niche, find they no longer have the time to devote to the organic business.

Bruce and Jillian Campbell bought the 4ha orchard on the outskirts of Christchurch in 2000. Previously it belonged to long-gone corporate grower AppleFields but had been neglected for some years. With the help of son Hamish, the Campbells rebuilt it into a flourishing business – the first certified organic apple exporter in Canterbury as well as a local supplier.

But two years ago Hamish was elected National Party MP for the Ilam electorate, and his wife Carol Stockdill has launched a business of her own. Looking after an orchard and selling at the weekly farmers' market in Lyttelton is stretching them too far.

"The work's been spread between Bruce, myself and Carol but with me being away so much, I don't really have the time I used to have to put in," says Hamish. "We haven't had a full harvest this year and the orchard's been little neglected.

"We thought we might have found someone to come in and help but that fell through so we're just weighing up the options, seeing what's out there."

Carol Stockdill with husband Hamish Campbell and Bruce Campbell – what happens to a family orchard when other commitments take over?

When the family took over the orchard, not only had it had been neglected, but the varieties in it weren't really market favourites anymore, Hamish says.

"It was like a jungle with the trees so it took a lot of work. The varieties were mainly Royal Gala, Braeburn and Fuji because those were the big export varieties in their day but over the years we've grafted in a whole range of other varieties."

The same trees now grow varieties that are hard to get through conventional supermarkets, including Cox's Orange, Golden Delicious and Granny Smith, along with Pacific Rose™ and Pacific Beauty® and the heritage variety Monty's Surprise.

"Mainly we've replaced what was on the stock with different varieties but there are a few that may have Royal Gala on the bottom and Granny Smith on the top.

> **"There's no shortage of demand and Hamish reckons they could sell their harvest two times over through Lyttelton Market and organic supermarkets**

"Organic principles resonate well with us but it also meant we could probably find a niche in the market."

There's no shortage of demand and Hamish reckons they could sell their harvest two times over through Lyttelton Market and organic supermarkets.

"We could probably get through half a tonne of apples on a Saturday morning in Lyttelton so it was quite a good outlet."

Over the past couple of years as Hamish's new job as local MP took ever more of his time, Carol did most of the Saturday morning markets.

"I loved the market and it's a nice little community and you're really part of it when you go there every Saturday," she says. "We've done a couple this year but we haven't had the quantity we'd normally have."

"I used to do the market quite frequently as well and you do miss it," Hamish agrees. "The market was probably one of more fun ways to sell apples."

Until a couple of years ago, nearly half their apples were exported through an organic pack house in Central Otago but as the business has been wound down, that's been discontinued.

Although they're stepping back from running the orchard business themselves, Hamish is still hopeful someone else will take the opportunity to take over.

"The thing is, once you've put so much blood, sweat and tears into a thing, the last thing you want to see is it in rack and ruin. Being so close to Christchurch, this is a very convenient location but once you house over an area like this, you're never going to grow anything again."

He hopes one of his two older brothers who live overseas will come back to help in the orchard but for now its future is undecided.

Carol meanwhile is building an online florist business which she says is based on similar principles to the orchard. "It's a highly sustainable model in the fact I source locally, we don't use plastic and have a low carbon footprint."

Previously a teacher, Carol started looking for a change of direction post-Covid and came up with the idea of a streamlined, online florist business, simplifying it by removing the "tyranny of choice".

As far as possible flowers are sourced from local farms to produce seasonal bunches of the week, sold in a choice of three sizes and delivered free within city boundaries. "Sometimes it's me and sometimes it's students I employ to do the deliveries."

"And if it's Valentine's, sometimes I get roped in too," adds Hamish.

Just what the future holds for Campbell Organic Orchard is uncertain but the family hope it will continue to meet the local demand for organic, increasingly hard to get hold of, varieties.

"A lot of people when we started said we weren't going to be able to sustain it long term, but I think we've proved them wrong," Hamish says.

It just needs someone with the time to carry the business on.

Ruawai grower and Vegetables NZ vice chair Warwick Simpson says the kūmara harvest has been a success

KŪMARA BACK ON TRACK

With an easy kūmara harvest underway and good quality kūmara filling the bins on his Ruawai property Warwick Simpson is a happy man.

Delwyn Dickey

While this summer's northern drought may have caused headaches for dairy farmers, for Warwick it has meant the lingering dampness in his soil has finally gone and he has seen a return to form for his 37ha of kūmara production.

Volumes of the three varieties he grows – Owairaka Red, Beauregard Orange and the niche Honey Sweet – are as good as those seen before Cyclone Gabrielle, he reckons.

This sees him currently supplying around 12 bins a week to his local packhouse Kaipara Kūmara.

The last few years with flooding and wet weather have been pretty tough for the 40 kūmara growers around Ruawai with some growers' crops completely destroyed during Cyclone Gabrielle.

This saw serious shortages of kūmara on supermarket shelves and very high prices.

Warwick admits there were times when he thought hard about finding a backup, including dusting off his Masters in physics and potentially putting his previous career experience in telecommunications to good use.

But the success of this year with a drier planting season, the soils drying out faster and ease of harvest, has seen his enthusiasm for the iconic root vegetable return.

The very high prices immediately after the cyclone had put a lot of people off buying kūmara, he says.

The Northern Wairoa Vegetable Growers Association is working with the SVS team to make the decision support tool work for kūmara-specific inputs

"Last year, production was at about two thirds of what it had been, but the demand wasn't quite the same, with the pack houses struggling to move that level of kūmara.

"Now that the prices are back to reasonable, we're trying to get that demand back."

A year on since the debut of 'Add One More Vegetable', he is encouraged by the initiative from Vegetables NZ with its positive message linking increased vegetable consumption to better health. It's a win for growers and consumers, he says.

The impact of flooding on growers in the industry hasn't been lost on the Ministry for Primary Industries (MPI) who have been helpful, he says.

> **"The export market for fresh kūmara is pretty minimal – and the home market all important**

MPI's kūmara seed contingency scheme saw them essentially providing funding to growers unable to harvest enough seed for the following year to buy seed from other growers that did have enough.

With Australia big growers of sweet potato, and both the United States and China massive growers, the export market for fresh kūmara is pretty minimal – and the home market all important.

The huge levels of consumption in the United States also mean they have a breeding programme to get new varieties, says Warwick. Recently four new varieties have been brought into the country from Louisiana State University.

Getting quarantine space can see big time delays, with Warwick acknowledging MPI's timely support through this process. At the moment, tissue cultures from the four varieties are in the lab, with the intention of bringing them into commercial production if they work well.

Growers are looking for greater yield per hectare, speed of growth, and disease or fungus resistance. Shape also comes into it, Warwick says. While the old reds are known and loved for being quite knobbly, everyone prefers a nice smooth kūmara to peel.

Another initiative through the Northern Wairoa Vegetable Growers Association is a project aimed at getting a better handle on the amount of nutrients kūmara take up as they grow.

The Sustainable Vegetable Systems tool (SVS tool) is essentially aimed at efficiently managing nitrogen use – knowing how much growers should be putting on so you're not overdoing it.

The tool had been set up for use with other vegetables but kūmara growers weren't happy with the results for their crop.

KŪMARA VARIETIES

Owairaka Red

Beauregard Orange

Honey Sweet

"We found that the SVS tool was working off bad data, basically, and it wasn't giving kūmara growers good results. We wanted to fix that, so that we could use the tool."

This meant new kūmara specific data was needed. Kūmara are not big nitrogen users but are full of potassium, advises Warwick. This sees his fertilisers tending to be potassium-based so they wanted to also look at potassium and phosphorus.

> **Growers are looking for greater yield per hectare, speed of growth, and disease or fungus resistance**

Along with three other local growers, Warwick has been taking samples every four weeks of soil, the tubers, and the leaves on the top and sending these off to Hill Labs to be analysed for what nutrients are in them. They had to take into account the leaves that are left in the field to biodegrade with weight measurements over a two metre by two-row plot, so that can be converted to a per hectare value.

The new data is being analysed by Andrew Barber at Agrilink, which specialises in sustainable resource use.

Despite difficulties with the wet over the last few years, Warwick is optimistic about the future of kūmara production in the north in coming years.

SUPPORT OUR **2025 YOUNG LEADERS**

The search for New Zealand's top horticultural talent kicks off in May with the 2025 Young Grower of the Year competitions. The regional events are a great opportunity for growers to support local talent and enjoy some time off the farm and orchard.

The competitions open with Central Otago on 16 May, followed closely by Pukekohe on 23 May, and the Hawke's Bay competition on 5–6 June.

Past participants consistently highlight the invaluable professional development these competitions provide. As Jamie Wells, 2024 Pukekohe Young Grower winner and later national runner-up notes, "The more people we get in the sector, it's only going to get better."

For employers, supporting staff participation delivers tangible returns. These events push contestants beyond their comfort zones, testing them across multiple disciplines from pest identification to marketing and business acumen. As Roger Tomlin, Balle Brothers general manager of farms, observed last year: "The competition showcases their innovative young minds."

Grace Fulford, 2024 national champion and Hawke's Bay regional winner, exemplifies the calibre of talent these competitions showcase. "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," says Grace, who is quality and compliance manager for T&G Global.

The evening gala dinners following each regional competition are not merely celebrations, but networking goldmines where industry connections flourish. Plus, for employers, supporting staff participation delivers tangible returns.

Following the first three regionals, competitions continue across Nelson (19 June), Bay of Plenty (27 June), Canterbury (10 July) and Gisborne (17 July). Winners will advance to the national final in Christchurch on 11 September.

With prize opportunities including $12,000 for the national winner, there's never been a better time to champion our young growers. Book your gala dinner tickets now and witness firsthand the bright future of New Zealand horticulture.

The Young Grower regional events are a great opportunity to support talent and catch up with local networks. Photo top from last year's Hawke's Bay event (courtesy of alphapix) and bottom the Central Otago event (courtesy of Image Central)

For more information visit:
www.younggrower.co.nz

TRIBUTE TO NOEL CONGDON, 1928–2025

Noel B. Congdon's contribution to New Zealand horticulture – and specifically the apple sector – has been enormous, says grower John Paynter. "In his lifetime, he has definitely made a difference."

Robert Findlay

Noel came from a family orchard in Albany, Auckland. He joined the Department of Agriculture as a trainee horticulture instructor in 1950, toward the end of his study at the University of Auckland.

In 1952 Noel transferred to Hastings and in 1962, aged 33, he was appointed horticulture superintendent, responsible for Hawke's Bay and Gisborne with 20 staff, when the area separated from Palmerston North.

"For me, Noel Congdon's major achievement, was to build a great staff around him," John says. Noel nurtured a team of older people with experience, together with a group of young, capable university graduates with ideas and energy. "There is no doubt that this was a world-class team, who contributed a great deal to horticulture in this country."

In 1963 he went to the United Kingdom to inspect New Zealand export fruit on arrival. From there he travelled to Rome for the first meeting of the Codex Alimentarius Commission to explain New Zealand grown fruit regulations.

Once back home Noel was an active member of the Hawke's Bay fruit growers' social committee and helped organise the popular annual picnic, golf tournament, fishing trip, apple packing competition and the fruit growers' ball held at Awatoto.

Hastings was recognised as a training centre for new recruits, and many who trained under Noel's watch were deployed throughout New Zealand. The author was one, transferred to the Roxburgh Office, Central Otago to service the Teviot Valley and Southland.

In 1987, after the restructuring of MAF and the demise of the Advisory Services Division, Noel's role as Regional Advisory Officer disappeared. He opted for early retirement, but his contribution was not over yet.

"By the time Noel retired, the apple industry was expanding rapidly," John says. "There was a need for high quality, true to type, budwood for the nursery industry. Noel volunteered to lead a group of retired fruit growers to walk mature apple blocks identifying elite trees."

Noel's funeral service was held at St Columba's Church, Havelock North on 4 March 2025. He is survived by wife Elaine and children Christine, Peter, Vicki and Grant, his 11 grandchildren and 11 great grandchildren.

Department of Agriculture, Horticulture Division staff, Hastings, 1972. Back row from left: Paul Marshall, Lloyd Simmiss, Roly Wall, Bill Miller, Don Wilson, Stan Woon, Graham Russell, Karl Jenner, Robert Findlay. Front row: Chris Ryan, Joe Bell, Phillipa Lewis, Noel Congdon, Frank Wood, John Greenfield, Jim Cullen

OPINION
THOUGHT LEADERS

REWRITE THE FAIRYTALE

Growing has always been a tough business. Why has it got harder? Fenton Hazelwood thinks the real grower's story has been forgotten in a compliance-heavy 'sustainability' narrative that stifles innovation and squeezes profits. He is fighting for change in his community – both off and online.

Fenton Hazelwood

I was born into the land. Our farm was a patchwork of pipfruit and stonefruit, process peas and beans, sheep, cattle, and a few other short-term crops that changed with the seasons. It wasn't just the soil that shaped me – it was the conversations, the lessons, the everyday decisions made with dirt on our boots and worry on our brows.

I'm not getting nostalgic. In fact, two things ring loud and clear from those early years. My grandpa Wilson once told me, "It costs more for Wattie's to put a label on a can of peas than what Wattie's paid us for the peas in the can." That stayed with me. And my dad – wise Malcolm – one year stood firm and said, "Fent, if we don't apply a third Sumisclex spray on the Golden Queens, we will not get a crop. We must save the crop."

I didn't realise it at the time, but those words etched something into me. They became part of my DNA – a deep understanding that food production isn't romantic; it's relentless. It's science, strategy, sacrifice. It has been a privilege to work with, alongside some fantastic growing organisations not just in New Zealand, but across the world. For this, I am eternally grateful.

Fast-forward to July 2024. After 12 years deep in the grind of a global agchem company, I was given a gift – though it didn't initially feel like one. That gift was time. Time to slow down, recalibrate, and – without sounding too clichéd – recharge the soul. With space to breathe came clarity. I started leaning into what matters most. I found myself back at the grassroots – talking to local high school students

about my journey in Food and Fibre. Sharing with them why we desperately need sharp, curious, values-driven young people to keep this country's agricultural heart beating. I buried myself in research, looking at where our industry sits globally – trends, challenges, innovation pathways. I had deep, honest conversations with forward-thinking growers from all over the country. And perhaps most surprisingly – I found myself knee-deep in online courses on AI. Mind-blowing stuff. Stretching my brain in new directions. A whole new world of tools, risks, and possibilities that could genuinely reshape how we grow, produce, and tell the story of our food. Oh, and started writing a book.

Fent Hazelwood has worked with many growers during his career

But I also had time to reflect. To take in what 15 years of shifting regulation has really done for our sector. The answer? Far from enough. Innovation has stalled greatly. We used to have active ingredients and biologicals coming into New Zealand regularly. Now? Imagine six or seven global players, each bringing one new product to market per segment *per decade*. Add a five-year-plus regulatory process, and you've got a system that doesn't support progress – it smothers it.

And then there's sustainability. That word gets thrown around so much it's starting to lose meaning. But true sustainability – measured, enduring, *real* – is costly. And right now, too much of that cost is landing on the farmer's shoulders. Protocols and audits are tick-boxes when a buyer turns around and purchases off someone who doesn't meet the standard. That stings. If we're going to hold people to account, let's reward those who meet the mark. Otherwise, what's the point?

We're overusing the few tools we have left – biologicals, agchem products, you name it. That's not sustainable. It's risky. And it's not just about chemical resistance; it's about New Zealand's ability to keep producing safe, nutritious food for the world at the standard we're known for.

Fent says the past is the past, but the future depends on New Zealanders reconnecting with growers

There's always been a quiet gap between the *value of food* and the *value of those who grow it*. That gap pulses through my veins. It frustrates me deeply that people have stopped thanking farmers for their meals. We've lost our connection to real food – food that nourishes, food that builds us. Ultra-processed food may be convenient, but it's not the future. Food with a story, a place, our heritage – that's the future. And that future includes honouring the grower, not forgetting them.

I'm now doing some work with a global tech company to help bring the grower's story to the end consumer. It's early days, but it feels right. The food chain must connect people – not just through supply but through trust, understanding, and appreciation.

> **"Food production isn't romantic; it's relentless. It's science, strategy, sacrifice**

My 30-year career in Food and Fibre has taken me from the paddock to Plant & Food Research, to early digital ag tools, to global seed companies, to leading in the reseller world, and into agchem. I've worked with incredible growers and walked both the R&D and corporate lines. I've seen greenwashing up close. And yes, I've wrestled with being "the corporate guy". But I've always stayed true to one thing – authenticity. No lip service, just action.

Returning to the front lines has been jarring. Our vegetable producers are hurting. The last 18 to 20 months have been brutal – returns have been abysmal, yet supermarket margins haven't blinked. And the regulatory machinery? Still crawling. Whether you're farming organically, regeneratively, or conventionally – it's a hard road. And sustainable innovation is being throttled back across the board.

These two issues – producer returns and the regulatory stranglehold – must be priorities for our government. This isn't about nostalgia. Like my grandparents and my parents, generations of New Zealand growers have always had to fight for the profitability and innovation they need.

But today it's about survival. It's about enabling the next generation of food and fibre champions to have a future. Because without them and without change, the foundation we all stand on is under threat.

I'll keep pushing. I'll keep telling our authentic food production story. And I'll keep fighting for the growers – because I've lived their world, and I know just how bloody important it is. If we don't stand up for the value of those who grow our food, then nobody will… So let's at least start there… ●

Connect with Fent on LinkedIn:
www.linkedin.com/in/fenton-hazelwood-29190b28

Farmlands plans to have more specialists in key regions and key crops, such as technical advisor Mike Caplan (right) visiting Bayley Produce's Kevin Bayley (left) and orchard manager Ibrahim Cetinturk in Hawke's Bay

INCREASING COMPETITION IN RURAL SUPPLIES

Between climate change and the need to spread the risk, many rural businesses now have interests in both horticulture and agriculture – and that has been a major factor behind Farmlands refocusing on horticulture.

Anne Hardie

For growers, it's a good thing, says Farmlands head of sales and strategy for horticulture, Chris Binns, who is in charge of growing the co-operative's horticulture business. It brings more competition to the rural supply industry and while he says that won't necessarily bring costs down, it will help level them out.

"Having competition aids a number of things and price is one of those things. When you have competition, it drives everyone to work a little bit harder. It drives innovation, it drives new products coming into the industry – it helps establish new products and new ways of working. So, price is only a very small part of it, I believe."

The co-operative opened its first horticulture hub in Hastings last year and he anticipates three to four hubs at selected hort-centric locations in the future – which, like the Hastings hub, will focus on providing bulk hort-chem and nutrition. Hastings was an obvious choice for the co-operative to set up its first horticulture hub, given it needed to re-establish itself in the region and it is one of the largest and most diverse horticulture regions in the country.

Farmlands' increased interest in the industry reflects the changing rural scene where Chris says horticulture business has increasingly moved into corporate ownership with a mix of portfolios that includes both farming and horticulture crops. Smaller businesses are also spreading their risk with a more diverse mix and he says they want to work with an input supplier that supports the entire business.

"We're owned by New Zealand farmers and growers and our purpose is to serve them, so to be involved in horticulture is just a piece in that puzzle."

Farmlands sees a role for input suppliers that can support primary sector businesses with increasingly diverse portfolios – from livestock to horticulture

On climate change playing a part in the co-operative's expanding role in horticulture, he points to Canterbury's ever-changing landscape as an example.

"Canterbury was strong in sheep and beef and then the dairy wave came through and we're now planting apple trees with enough change in our climate and varietal mix for that to make sense."

> **While Farmlands has already made some big steps, further investment opportunities are being watched closely such as AI, robotics and drones**

Chris admits the co-operative has not been a strong player in horticulture in the past – except in the Bay of Plenty. But in the next three years, he plans to change that by bringing new people into the industry, training new people to bring new capability into the people sphere, establishing the co-operative within regions and bringing new products to the table.

"The biggest thing Farmlands brings is that competition. It's bringing a player into the industry that is owned by the grower."

He says the co-operative has to be able to come to the market and be competitive, but the real advantage to growers is knowing that a company they own will help bring more options to the table rather than just driving prices down.

"You've got to have a sustainable business option. That doesn't mean you are always the cheapest."

When it comes to product prices in an uncertain global situation that includes the United States tariffs, he does not expect huge price increases in the next six to seven months when most of the buying decisions are happening. Beyond that, he says the extra competition that Farmlands brings to the table should help settle price increases.

For the industry, he says it's not just about increased competition around products, as a major part of his role is around recruitment in the co-operative's expanding horticulture business.

"We need more technical specialists in key regions and key crops. Once we have that in place, we have the ability to train new people for the industry. We want to be in a position where we are bringing people out of college or university to the entire industry. Hopefully they stay with Farmlands, but if they don't, then growing people for the industry. I think that's a really important part to play.

"Our entire agriculture industry in general is very short of good people. We have a lack of new people coming into the industry and I think the more diverse we can be as a business, the more attractive our industry becomes."

For the past two years, the co-operative has run a horticulture internship for 13 weeks, seeking university students who have completed two years of study and basing them at Te Puke, Motueka and Marlborough. The plan is to have a fourth student based in Hawke's Bay.

Farmlands' Chris Binns says it makes sense for the co-operative to expand its role in horticulture

This year, he says there are also plans for a horticulture cadetship for either staff already working in Farmlands' stores, or school students looking for a career. It is still being developed and will probably be a 12-month course that runs alongside regular work.

"The talent pool out there is very small for horticulture, so I think we have an obligation at Farmlands to show people how cool this industry is. The more people we can show that to, the better."

In the past three years, the co-operative has had quite a turnaround due to its focus to operate smarter and more efficiently and Chris says that enables it to continue evolving in areas such as technology. While he says Farmlands has already made some big steps, further investment opportunities are being watched closely such as AI, robotics and drones. That's technology that may look very different in a couple of years, he says, so Farmlands needs to see which way the wind blows before making that giant leap.

Massey University student Leo Farrell joined Te Ahikawariki as a summer research intern and presented at the Vegetables Big Day Out in February

VEGETABLE SECTOR **INVESTING IN PEOPLE**

The Te Ahikawariki/Vegetable Industry Centre of Excellence (VICE) is helping vegetable groups to align on a new vegetable workforce development programme. The aim is to create a safe space for research to help inform grower practice in the future to manage impacts on freshwater.

Established in November 2024, Te Ahikawariki works towards better research and extension outcomes across the vegetable sector. The centre has been co-developed by vegetable growers, vegetable product groups, Horticulture New Zealand, and mana whenua partners with more than $2 million in funding awarded by the government. The facility is located on Cronin Road in Pukekohe, a site shared by Balle Bros and Plant & Food Research, but aims to produce outcomes for vegetable growers throughout New Zealand.

Project manager Kazi Talaski is keen to see Te Ahikawariki address the gap in workforce skills required to adopt new practices. She says conversations with growers about what is required to improve sustainability, productivity, and reduce the impact of adverse events quickly highlighted the need to develop capability in the workforce.

Te Ahikawariki has already funded a range of resources to support capability in the vegetable sector. Projects include supporting emerging vegetable researchers through funding post-graduate scholarships, establishing a vegetable university working group to ensure alignment of research and teaching to industry needs, supporting growers to gain international experience and bring learning back to New Zealand, and ensuring there is awareness and promotion of the varied and skilled roles in vegetables to school leavers and career changers, says Emma Boase, Te Ahikawariki people capability lead.

Of course, some workforce development requirements are similar across the wider horticulture sector, such as flexible workplace training and the vegetable sector works closely with HortNZ. In February, for example, HortNZ advocated on behalf of product groups on Options for the Future of Work-based Learning, a consultation with the Ministry of Education.

However, Emma says Te Ahikawariki workstream is focused on making sure anything specific to vegetables that is required for workforce development is delivered as part of a longer-term workforce development plan.

For example, the vegetable sector is the most ethnically diverse in the food and fibre sector, so requires a multi-cultural approach.

Vegetables face specific role shortages – particularly in specialist roles such as machinery operating, and agronomists. While the number of workers in the industry is decreasing over time, the skill level is increasing and needs to continue to increase. This shift speaks to the increased use of technology, and associated productivity increases in the sector.

Leadership training is also increasingly required as larger operations require supervisory roles and project management level positions which have a strong understanding of the industry and the people in it.

"There hasn't really been an industry-led workforce development plan specifically for the vegetable sector before," Emma continues. "HortNZ has certainly included vegetables in everything they do for workforce development. But taking a specific look at what the vegetable workforce needs are now, and what they will be in the future – and putting a strategy and plan around this – will help the industry articulate its needs clearly and work on projects that deliver specific vegetable outcomes. We had an opportunity to look back, coordinating between the vegetable product groups and getting the basic workforce development plan for vegetables in place."

Workforce development programmes take a while to deliver benefits so it is really important that they are set up well to address current and future industry requirements.

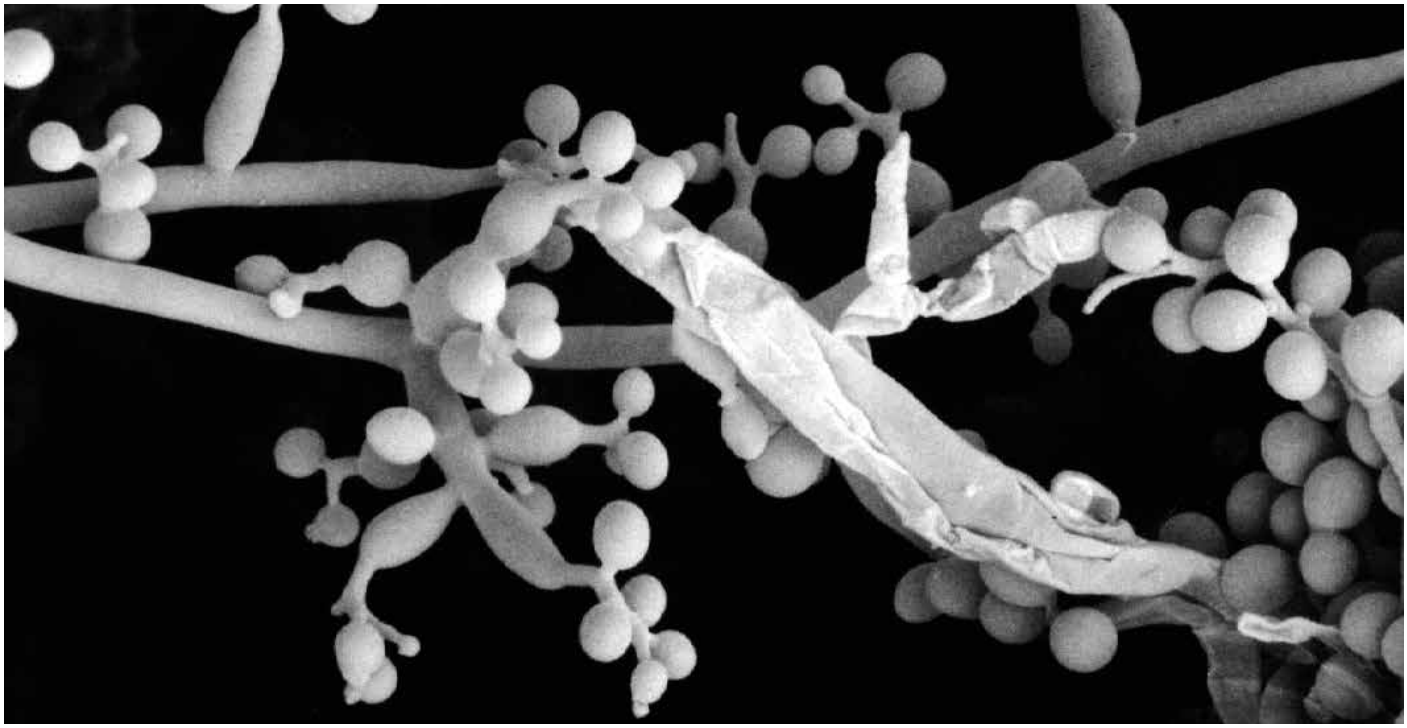
As the projects and events funded by Te Ahikawariki workforce development programme are completed, the team look forward to sharing more on the projects in the coming months.

NEW

GOHORT REFRESH UNDERWAY

HortNZ is leading a refresh of the GoHort website – the primary career promotion tool for all of horticulture, with input from vegetable product groups as well as fruit product groups. Look out for further details in upcoming issues of *NZGrower & Orchardist*.

For further details, see: **vegcentreofexcellence.nz** or email: **VICE@hesl.co.nz**



An electron micrograph of the spore structures of Beauveria bassiana

A FUNGUS FOR **PEST CONTROL**

If you are considering a switch to bioinsecticides, there's a good chance Beauveria bassiana *will be an active ingredient on your list. Products containing the fungus have become a billion-dollar global industry for controlling thrips, whitefly, psyllids, leafhoppers, aphids and other foliar arthropods. To get better acquainted with this grower-friendly fungus, we spoke with Prof Travis Glare, chief executive of Lincoln Agritech and Professor of Applied Entomology at Lincoln University.*

John Gauldie

KEY POINTS

- *Beauveria bassiana* is a fungus that kills pests like thrips and whitefly, leaving them covered in white mould
- We're seeing a growing global market for bioinsecticides containing strains of *Beauveria bassiana* as active ingredient
- New Zealand's BioSouth produces commercial quantities of the spores, primarily for international clients

Beauveria is a fungus that lives in soils all over the world. The fungus invades arthropod hosts and leaves them dead within 24–48 hours, coated in a ghostly white mould.

In the last decade the global market for *Beauveria bassiana* as a bioinsecticide has been growing at about 15 percent a year – spurred on by dwindling synthetic chemistry options and consumer preferences. It is becoming the predominant mode of action for bioinsecticides, taking over from *Bacillus thuringiensis*, often known as Bt spray – which many New Zealanders will remember falling from a Fokker Friendship plane over Auckland to eradicate a Painted Apple Moth incursion.

"*Bacillus thuringiensis* used to be 90 percent of the biopesticide market, it's probably less than 40 percent now," says Prof Travis Glare. After spending the better part of four decades working on biopesticides, Travis has witnessed the changing market firsthand.

A Colorado potato beetle killed by Beauveria bassiana*, leaving a white mould also known as white muscardine disease*

"Beauveria is the next one because it's very easy to produce," he says. "It's easy to formulate. The host range for *Beauveria bassiana* is probably at least in the thousands of different species. Metarhizium is another insect-killing fungus with a growing market."

Biopesticides are still a long way off replacing conventional chemistry. Switching requires careful consideration of cost, efficacy and use as part of an Integrated Pest Management (IPM) plan. After all, you are working with a living organism. If you're using a fungicide against a certain disease, it can also knock off the Beauveria, Travis says.

"Are you going to go with the biologicals and stop spraying the pesticides that have traditionally helped you? That's really hard to ask from growers. Although resistance development is becoming an issue as well."

An advantage of Beauveria is that its mode of action makes it difficult for target insect populations to develop resistance. You can also use Beauveria to complement beneficial predators as well as pollinators.

"The funny thing about it is if you get a Beauveria strain that's targeting a pest species, you need 100 times the concentration to affect the predators of the same insect."

The fungus was first used as a pesticide over a century ago. A lot of development work went on for the next 50 years.

"Then DDT came along and wiped out the idea of biopesticides. It wasn't really until you got to the 1970s, 1980s when you started to see a revival and the big companies got interested."

Starting in 1995 products making management claims with *Beauveria bassiana* gained approval in the United States. However, they remained a niche solution compared to chemistry like the organophosphates still used at the time.

Fast forward 30 years and Beauveria is finally having its moment – driven not just by the withdrawal of conventional pesticides, but also by the improving efficacy of biopesticides. To do that, scientists have been isolating naturally occurring strains.

> **"In the last decade the global market for *Beauveria bassiana* as a bioinsecticide has been growing at about 15 percent a year**

"*Beauveria bassiana* is an asexual fungus, so there is a lot of variation in the strains within the species. You'll get strains that will attack particular insects but they're not as good against the others."

Those strains are being captured by biotech firms looking for unique control properties – such as aphid control – with patentable formulations.

A flurry of products making new management claims has been approved by authorities around the world. *Beauveria bassiana atcc 74040* is a strain originally identified in the United States. The *Beauveria bassiana 203* strain was

Biologicals containing Beauveria bassiana *can be used to control pests like whitefly, pictured here fully colonised by the fungus*

developed by a Spanish biotech startup. Products with *Beauveria bassiana PPRI 5339* have been registered in many countries, including one in New Zealand in July last year. In March this year Canada announced its approval for *Beauveria bassiana ANT-03*.

Those are just a few examples and there is still a lot of opportunity for innovation – not just in targeting particular pests, but also in improving efficacy under different conditions, such as temperature and humidity.

"We are getting a lot more products coming through and more competition for different segments of the market."

You can also find Beauveria formulations sold as a biostimulant. That means, depending on the jurisdiction, there might not be a registration requirement.

> **"The New Zealand government's efforts to review the approval process could improve availability for growers**

"It's an unusual fungus. It'll live inside a plant and it actually promotes plant growth and resistance to diseases, because it upregulates the stress reactions. So you get these weird benefits from it."

Due to New Zealand's current lengthy approval process, most Beauveria products with a targeted management claim are likely to be imported, rather than developed locally.

"What company can afford several years in a registration process for a product that hasn't established a market yet? Whereas if you bring one from overseas, all you're doing is putting it in the pipeline to get registered. You don't have to do all the development work.

"If you look at Brazil, they've changed their approvals regime. It's a year-long simple process for biologicals. They now use 50 percent biologicals for pest control, and that is simply because they set up a permissive environment."

The New Zealand government's efforts to review the approval process could improve availability for growers. Travis also believes the Gene Technology Bill has potential.

"I do think depending on how regulations go, that CRISPR-Cas knockouts could be a real benefit. But before we start using those, there are some ecological questions. If you make a better pathogen, have you created a new problem? We are very aware of that, but the strain range that you can get with what's in collections now is quite huge and it can do different things.

"It's not just the pathology. When you're making a product, you're looking for several things because you need ease of production as well. In general fungi are easy to grow on simple grains. Then you just collect the spores and you can make a product. But some of the more pathogenic strains don't grow very well on the grains and in culture. And so there's a trade-off there."

BEAUVERIA BASSIANA IS USED FOR CONTROLLING

- Thrips
- Whitefly
- Psyllids
- Leafhoppers
- Aphids
- Other foliar arthropods

Five years ago Travis founded BioSouth, a contract manufacturer of microbial products including *Beauveria bassiana* strains. BioSouth supports the development of New Zealand's bioeconomy by investing in the infrastructure that local researchers and startups need.

However, BioSouth quickly noticed strong demand from international companies – particularly from the Northern Hemisphere – looking for Australasian production capacity. The company is now completing a factory in Wigram in Christchurch.

Its overseas clients send different strains – none of which is currently registered for use in New Zealand – for solid-state fermentation. "Basically we harvest pure spores for the international market and send them back."

On its current trajectory, it seems that Beauveria will become a key asset in many growers' toolbox.

"It's quite an amazing fungus really. People go looking for a new species that can do better things but always come back to Beauveria or Metarhizium – they're just the best at it."

SHARING THE WEATHER

Rapidly developing AI technology and the approaching merger of NIWA and MetService create a unique moment to reimagine New Zealand's approach to weather data – one that could unlock tremendous value for the horticultural sector and the broader economy.

John Gauldie

KEY POINTS

- New Zealand's weather data policies could be hindering innovation such as potential AI benefits for horticulture
- The MetService-NIWA merger is an opportunity to reimagine New Zealand's approach towards open weather data sharing
- Private weather networks collect valuable microclimate data but need standardisation to integrate with national forecasting systems

Imagine having reliable microclimate weather forecasts for your farm or orchard up to a week in advance. The technology required is moving fast around in the world. Innovations in AI-enhanced fine-resolution, short-term weather forecasting could increase productivity across the horticulture industry.

New Zealand is at a natural disadvantage, due to its volatile weather and the scarcity of measurements upstream of incoming weather systems across the vast South Pacific Ocean. The government cannot do much about that, but it could address the long-standing issues in New Zealand's weather data ecosystem.

The 2017 "Weather Permitting" review found that "the New Zealand model is at the most commercial and restrictive end of cost and limitations on data use" compared to the rest of the world. Access to timely weather observation data is very costly and "licence restrictions may be limiting innovation and economic opportunities in value-added products and services using weather data."

The case for open data

MetService and NIWA must offset their costs through commercial agreements due to their funding models. Their costs are significant – from supercomputers to maintaining a network of research grade observation stations.

However, Greg Bodeker from the DeepWeather project argues that "New Zealand is trying to monetise its raw weather data, rather than leveraging the data for the maximum potential benefit to New Zealand society."

He contrasts this with the United States' approach: "Everything is open to everyone globally and they have wonderful data sets that are great for training AI-based models."

Greg notes the economic benefits of the American approach: "Making the raw data available might close the tap on one potential source of revenue, but the return on the investment in making those data freely available has been shown to be a factor of 10 or more."

> "Cropping and horticulture cover just 2 percent of New Zealand's land area. The national weather forecasting system is not designed to zoom into a fine resolution in these areas

New Zealand has a more open approach to land data through the Land Information New Zealand (LINZ) Data Service. "LINZ has done a great job," Greg says. "In fact, I think if you want to look for an exemplar of how data should be made available in New Zealand, LINZ is fantastic."

Many growers invest in their own weather observation stations

Leveraging grower data

Cropping and horticulture cover just 2 percent of New Zealand's land area. The national weather forecasting system is not designed to zoom into a fine resolution in these areas. The "Weather Permitting" review noted MetService and NIWA's "lack of dense surface observations in critical locations" needed for fine spatial resolution weather forecasting.

In horticulture, this has led to third party companies developing their own networks of private observation stations installed on orchards and farms, such as HortPlus, Metris and Harvest.com. These companies create downstream products and services that package weather data with specialist horticulture knowledge to support applications like crop damage prevention, precision irrigation, disease and pest prevention and management, harvest planning, labour management, and pollination strategies.

Growers who invest in their own observation stations – a robust, quality solution costs from $5,000 to $10,000, plus telemetry charges – accumulate valuable data about their own farms and orchards. The sheer size of these private networks (Harvest.com compiles data from 14,000 stations) makes them an interesting data source for forecasting. However, dense surface observations alone aren't enough for fine-resolution forecasts – they must be combined with broader data and integrated into advanced forecasting models.

EXAMPLES OF DOWNSTREAM WEATHER SERVICES

www.hortplus.com

www.metris.nz

www.harvest.com

HortPlus is an example of a downstream weather service that leverages data from its own private network together with MetService data. Last year HortPlus and MetService agreed a partnership to share information from their respective weather station networks, providing a larger volume of data to support MetService's forecasting.

HortPlus's Mike Barley says rethinking investment in publicly funded weather data could be transformational

Data driving innovation

Industry groups already support these services by subscribing to them on behalf of all the growers they represent. This ensures HortPlus's service MetWatch is available to registered growers and researchers at no cost via weather and disease portals on the websites of Zespri, NZ Apples & Pears, Summerfruit NZ, Onions NZ, Vegetables NZ, New Zealand Plant Producers Inc and Foundation for Arable Research. A number of large corporate clients also use MetWatch, sometimes via their own bespoke portals featuring tools specific to their individual business.

MetService and NIWA currently have different approaches and conditions for third party data and it's not clear how the new organisation will approach the subject. When NIWA and MetService merge later this year, the government expects significant cost savings. Will these savings be passed on to data users? Will the government continue to prioritise the high quality spatial and temporal resolution observations that underpin weather forecasting to serve the horticulture industry?

"We would love to see the free transfer of data between growers and Crown-funded entities getting stronger over time, recognising the value information sharing can provide to both parties, as well as New Zealand as a whole," says Mike Barley, HortPlus director.

"The private sector can help extend the reach and impact of publicly funded weather data by sharing it with a wider audience, and it can also drive innovation. We're not so naive as to think maintaining weather stations is free – there's real money involved – but if the government looks at those costs as an investment in the economy and industry and community resilience, rather than an operating expense that needs to fund itself, that could be transformational."

The AI weather revolution

Without significant changes to data sharing frameworks, horticulture is unlikely to benefit from AI innovations. The quality of AI-based weather forecasting depends not only on the model itself, but also very much on the availability of data used to train it.

"When it comes to AI and machine-learning, typically the more data you have the better," Greg says. "There is no such thing as 'too much data'. Seriously, there just isn't. I have never heard of an AI researcher complaining that they have too much data. This 'data challenge' is always going to be a bottleneck in the quality of weather forecasts and, in particular, AI-based weather forecasts."

Mike agrees more data is always useful but also cautions that effort should be made to accurately label non-research-grade weather stations so that the data they produce can be adequately filtered and compared.

"One of the most valuable projects we can undertake in New Zealand is to agree on a uniform set of 'metadata'. This is really important because it allows us to compare 'apples with apples' when it comes to climate readings. There are some stations around the country under canopy, some out in the open, some with anemometers 10 metres up for windspeed readings, and others at ground level.

"We've been working hard on this, including as part of a project with NZ Apples & Pears, because if you lump all weather data together, without being able to filter it or know the source, then it is difficult to understand the reasons some data may sit outside the norm." ●

DRIVERS OF CHANGE WITHIN THE PIPFRUIT INDUSTRY 1985–2025: PART 2

Jonathan Brookes and Sarah McArley (née de Bruin) : AgFirst Consultants Hawke's Bay

During the 1985–2025 period, growers faced numerous challenges but also celebrated numerous successes.

Last month we explored what was happening for growers both on and off orchard from 1985 to 2025, identifying what characterised pipfruit growing within each decade. This month, considering that historical timeline as context, we are drawing out what the greatest limiting factors were and their potential as catalysts for grower exit, alongside growers' responses and the actions taken by those who survived or thrived.

Maximising Class 1 production should always be a focus, in order to achieve the best available returns

1985–1994

Growers who thrived were in the orchard from morning to night, with a team of keen staff who were often working the same hours. Most orchardists were owner operators and relatively cautious around debt levels. A change in variety dominance occurred, and as a result those with a well-timed commitment to the new fruit varieties hit some pockets of huge success. This helped to drive massive industry growth through this period.

However, this was also a decade of high inflation and mortgage costs, with a few significant climate challenges. Towards the end of the decade growers started to see the introduction of compliance regulation, and the increasing market expectations of quality and food safety resulted in a greater need for large investment in packing facilities. This forced the closure of a lot of the grower packer sheds. As always, not all the new varieties were winners either. Sometimes a grower was hit hard by one of these challenges and couldn't recover, forcing industry exit.

A third leaf block, plants in 2000 on M9 rootstock, showing the limitation of canopy support structures

1995–2004

This was a difficult decade for the pipfruit industry, and not too many growers truly thrived in this era. In the late 1990s there were some hail events, followed by market collapse and major losses, leading to a reduction in planted area, grower exit and continued decline in the packing industry as a result.

Labour became increasingly challenging. Lots of good people with key skills and experience moved on, as the tougher times resulted in a planted area reduction. The industry was also getting significant pressure with pest and disease market access issues, and ongoing pressure for pesticide reduction from Europe and the United Kingdom.

The deregulation of the industry in 2001 resulted in a shift in orchard business structure, with a greater percentage of the crop being grown by more corporate and vertically integrated orchard businesses. These growers were able to clip the ticket on growing, packing and marketing following deregulation. Non vertically integrated grower suppliers did not have this ability, instead moving to being a 'professional grower' through having high quality horticultural skills to maximise high quality production and achieve the greatest returns possible.

Sitting on your hands and doing nothing was not an option during this decade, but neither was doing too much. Growers had to grow the right varieties, at the right quality, and give it to the right marketer to sell in the right markets. If a grower could achieve this, while also managing internal debt, there were pockets of financial success. However, there was a huge opportunity to get things wrong during these times, and growers had to rely on a good dose of luck regarding climatic event exposure and/or insurance cover for the hail and frost events in 1996, 1997 and 2003.

> **"Growers who redeveloped with higher density systems were better off in future years than those who continued to plant at wide spacings**

Over this decade there was a move to more intensive plantings. Older style 5 x 3 metre plantings were coming to the end of their varietal life, and although this planting density was cheaper, it was very slow to get to full production and expensive for labour due to tree height. Growers who redeveloped with higher density systems were better off in future years than those who continued to plant at wide spacings. There were some growers who tried to cut tree support structure costs within the new high-density systems, but this came back to bite when blocks fell over in wet years with full crops on the trees.

2005–2014

This decade got off to a bad start and with another large exit of growers due to returns dropping below the cost of production, unfavourable exchange rates, and shortages in skilled management labour. However, those that managed to survive the disasters and kept going forward with their businesses, ended up making some very good gains by the end of this decade.

There were huge changes in the variety mix and market focus for New Zealand growers within this decade. Higher value, Asian focused, licence varieties entered the mix, as the marketers started to diversify from the strong focus on the United Kingdom and Europe. Those that doubled down on the Asian market varieties were well rewarded for it, however at times it seemed this was an era where pipfruit growers could do no wrong, and even commodity varieties provided sustainable returns.

The introduction of the Recognised Seasonal Employer (RSE) scheme in 2007 resulted in improved productivity, particularly with harvest. Prior to this, labour was generally a limited local workforce, backpackers or contractors. The local workforce was never able to harvest all the fruit and those who were good workers rose through the ranks and did not stay picking for too long. International backpackers were generally looking to have a good time, but were not overly invested in the success of the orchard business. Labour contractor businesses were formed to fill the labour void, but often developed into a bit of a cash cow for the business owners and staff sometimes lacked the skills or attitude required of orchard staff. The RSE scheme was able to alleviate labour productivity issues, and although it came at a cost, growers were able and willing to pay.

Bad habits started to creep in over this period, with good horticultural practice sometimes overlooked for a mindset of getting 'new trees in the ground'. As money was relatively cheap, growers were spending, and not always wisely. Challenges erupted with tree support, drainage, frost, hail, young tree canopy management, and the ability to deliver the high value product that is required for the market. Some growers kept commodity apples far too long and bought the neighbour's orchard instead of redeveloping and improving their main farm. The decision to slow down ongoing block replacement within orchards would often catch businesses out down the track, with a reduced market resilience and lower returns leading to difficulties with cashflow and more exposure to higher debt levels. This decade would become an important lesson in the pace and prioritisation of sustainable change.

A consequence of the inadequate canopy support structure – orchard system collapse!

2015–2024

The decade 2015 to 2024 started off in the good times, but the latter half saw another tough time for the industry, with climatic disasters, labour shortages, production cost inflation and poorer returns. Those growers who were more likely to weather the storm had invested in the genetics that paid well in the market, with productive blocks, well designed and maintained orchard systems and good risk mitigation such as drainage, hail nets or hail insurance.

Retirement age growers continued exiting from small family-owned businesses. Many of those that dug deep in the 1980s, 1990s, and 2000s did not really want to go another round.

Vertically integrated businesses, those with corporate backing, and Māori agribusiness units increased in prevalence across this decade, with external fund providers entering the market and creating greater funding resilience for the industry.

Large areas of expensive replanting created high levels of debt for numerous growers. Input cost increases and back-to-back poor years meant that financial stability and exposure to debt was a big driver of decision making, especially when mortgage rates started to increase.

Climatic challenges were also prevalent, with hail, droughts, flooding, and cyclones all testing orchard and grower resilience.

It was hard to go back to the bad times once we had tasted the good times.

What do we see going forward:

To be a successful pipfruit grower you will need to work hard. Growing requires a good dose of luck, but preparation, redevelopment at a steady pace, and a continual goal to improve the quality and productivity of varieties in the best markets will pay dividends.

Some key lessons, considering what has been successful and what did not work for those growing in the 1985–2025 period:

- Ongoing success and business sustainability requires specific attention to all factors of the business. Doing the fundamentals right enables improved business resilience.
- Maximising Class 1 production should always be a focus. New Zealand is a high-cost environment for pipfruit production, and growers are price takers of returns. It is vital to grow high volumes of high-quality fruit to maximise available returns and therefore get the best out of the markets. Productivity is key.
- Being comfortable and assuming a past success can be repeated is dangerous. Change is necessary, and continuous improvement should be the goal for all orchards. However, the speed of change is critical – not too slow, not too fast.
- Understanding and managing debt is essential. You need to pay for change but also have some disaster resilience, so be sure not to over-extend when times are good. Those who had the least exposure to debt during the disaster years were able to hold on better for longer.

- The profitability matrix includes costs, alongside production, quality and returns. Do not let cost cutting come at the expense of something else. Efficiency gains are important, but be cautious as cost cutting in one area can often pop up in more work downstream.
- Critical success factors can quickly become limiting factors if the required management attention is not given. Growers can often gravitate towards an area of business management passion and head on down a rabbit hole to fix it. This concentrated focus can often lead to unintended consequences, when in fact time and effort would be better spent on targeting other, greater limiting factors.
- Understand the risks to your business. These might include risks posed by a wide range of elements including finances, geopolitical tensions, climatic or environmental challenges, market access restrictions, varietal success in market, labour availability, knowledge and experience, compliance measures or technology adoption.

With these lessons in mind, industry needs to consider the following questions:

- How can we continue to drive up high value productivity, to achieve volumes high enough to spread production costs over?
- What are the up-and-coming varieties that will carry us into the future?
- What markets can we look toward to achieve the returns needed to be profitable?
- What external factors can threaten my business resilience, and how can I mitigate for that?
- How do I manage risks, mitigate failures and plan for and deliver ongoing success?

Remember that all our global competitors are also working through different iterations of the same questions.

All the elements are there for the New Zealand horticultural industry to be successful for the next four decades and beyond, so long as we learn from the past and continuously improve. ●

Growers need to always be considering productivity improvements. We need to achieve volumes high enough to spread production costs over

Support to shade netting over the greenhouse roof during a field visit near Yancheng

STRAWBERRY FIELDS FOREVER?

In March we attended the 10th (X) International Strawberry symposium held by the International Society for Horticultural Science (ISHS), along with about 400 other delegates from all over the world. The five-day meeting was held in Yancheng, China, a 'small' modern city of some three-quarters of a million people situated about halfway between Shanghai and Beijing.

Mike Nichols and Martyn Callaghan

As one might anticipate, most of the delegates were Chinese – after all China is the largest producer of strawberries in the world (4.2 million tonnes compared to the United States at 1.3 million tonnes, and New Zealand less than 10,000 tonnes!) Most countries in the world were represented.

Travelling to the conference was fairly straightforward. Flights from Auckland to Shanghai were followed by a 400 km rail trip on the high-speed (bullet) train which took just over two hours to reach Yancheng, including stopping at intermediate stations.

The meeting was held in a large hotel in the centre of the town, and the organisation was first class. Most of the presentations were in English, and when Chinese was used, an earpiece provided an instant translation.

The take-home message from the meeting is that the way strawberries are grown is changing rapidly. For example, there is interest in the production of strawberry plants from true seed, which avoids the complications of vegetative propagation and ensures disease-free planting material. This is for the future, however.

Chinese high-rise strawberries – there are two counterweight gulleys to every path

For the present, there is a shift away from growing outside in the field towards the production of fruit in protected cultivation ranging from simple rain-shelters up to and including high tech plant factories (vertical farming).

We learnt how plant factories might play an important role in producing runners for vegetative propagation year-round.

During a day of field visits we saw the use of shading nets which could be automatically stretched over the roof of the greenhouses during the middle of the day to reduce the sunlight (and therefore temperature). This could be a useful development in New Zealand, as strawberries do not like temperatures over 30°C. 'White' strawberry varieties are available in China, in a wide range of different production systems.

Fruit quality is going to be increasingly important. One paper was very critical of the quality of some United States strawberries, because much of the crop is grown on the West Coast (California) and sold on the East Coast, so the time from harvest to market could be up to seven days, and therefore fruit must be harvested a little immature and so lack flavour (and brix). We suspect that the worldwide trend towards local protected cropping, and even vertical farming, will eventually solve this problem.

Breeding new (and better) varieties will continue to be the lynch pin, and the introduction of some of the genetic material from Asia could make a huge difference. It must be noted that almost all our current varieties are based on a single chance hybrid between *Fragaria virginiana* from North America and *Fragaria chiloensis* from South America in a botanic garden in France some 200 years ago.

This was a very worthwhile meeting to attend, not only for the papers and the one day of field visits, but also for the people we met.

The full papers will be published by the International Society for Horticultural Science (ISHS) as an *Acta Horticulturae* in due course.

The next ISHS strawberry symposium is scheduled to be held at Antwerp, Belgium in 2028.

Figure 1: Pollen application to a standard cherry tree cultivar Samba® using an airbrush from a cherry picker (Hydralada)

COLLECTING AND APPLYING CHERRY POLLEN

Could artificial pollination become common practice for New Zealand cherry growers?

Melissa Broussard[1], Samuel Lee[2], Kirsty Lyall[1], Demi Fearn[2], Rayn Marfell[2], Mell Ball[2], and Blair McLean[2]

Cherries are generally self-incompatible and pollen-limited due to their early flowering. Despite grower interventions of planting pollenisers and increasing bee stocking densities, fruit set is still regularly limited by pollination. Because of these factors, cherries were an early target of artificial pollination in the United States starting from the 1920s, though that work hasn't been implemented in New Zealand despite a healthy artificial pollination industry in kiwifruit.

A source of viable pollen is essential to any artificial pollination programme, and as New Zealand has a limited ability to import pollen from overseas, local collection and storage is necessary. To enable future artificial pollination in cherry, three methods to collect cherry pollen for artificial pollination were tested in a collaboration between Plant & Food Research and Cherrybank Orchard during the 2024 growing season in Marlborough. This is foundational work to learn how our cherry industry can leverage approaches developed in New Zealand over more than 30 years of commercial kiwifruit pollen harvests and 100 years of practical application in the United States.

In kiwifruit, flowers are often picked whole at the 'balloon stage' (Stage 3 in Figure 2), because this represents a sweet spot between pollen viability and quantity, as pollen is lost the moment flowers open. We found a different result for cherry – pollen viability was lowest at Stage 1, and peaked at Stage 2, prior to flower opening, though Stages 2–4 had similar pollen viability. Stage 5 had the highest viability, but in very low quantities, as most of the anthers had released their pollen by this stage. Collecting Stages 2–3 is likely to result in high quality pollen.

1. The New Zealand Institute for Plant and Food Research Ltd, Hamilton
2. Cherrybank Orchard

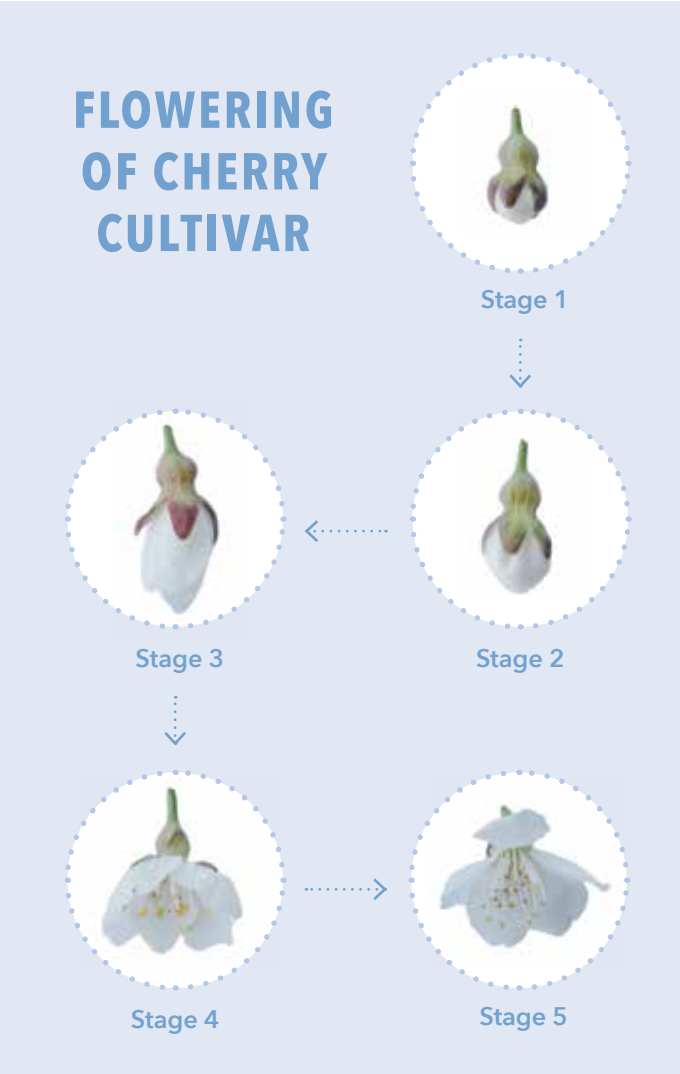


Figure 2: Flowering stages 1–5 of cherry cultivar 'Rosann'

Figure 3: Different methods used to harvest cherry pollen: vacuuming (top), direct anther harvest (combing; centre), and flower milling with a pollen mill (bottom)

Cherry pollen was collected using tools that have been used successfully by the kiwifruit industry: vacuuming, direct anther harvest with a fine-toothed nit comb (combing), and from picked flowers with a pollen mill (Figure 3).

While vacuuming collected usable pollen directly, further processing was necessary for other methods. Anthers separated from flowers by combing or milling were dried overnight at 18°C, the pollen pressed through a 150–180 mesh sieve and collected onto paper (Figure 4).

Though vacuuming may appear to be the most straightforward approach, collecting usable pollen directly (and is the method used for kiwifruit pollen in Italy), this method had the lowest yield per man hour across four separate trials: both milling and combing produced more viable pollen for less work (Figure 5). This doesn't consider the capital cost of milling equipment or flowers sacrificed to the milling process. Both vacuuming and combing left flowers intact to set fruit. Flowers picked for milling, however, are not available to set fruit which may either reduce yield or increase the size of remaining fruit by thinning, depending

on the flowering intensity in the orchard. Perhaps surprisingly, the productivity of combing is similar to industrial scale milling, providing a stepping-stone to evaluate the benefits of artificial pollination in cherry in New Zealand prior to investing capital investment in milling equipment.

Our recommended pollen collection process, from these results, is:

For milling flowers:

- Pick flowers the same day they are to be milled. Pick them into open-weave sacks or paper bags so water vapour can escape. Don't use plastic bags or buckets where humidity can build up which may reduce pollen viability.
- Mill each batch of flowers three times to remove as many anthers as possible.

Figure 4: Using a 150 mesh sieve to extract pollen from dried anthers

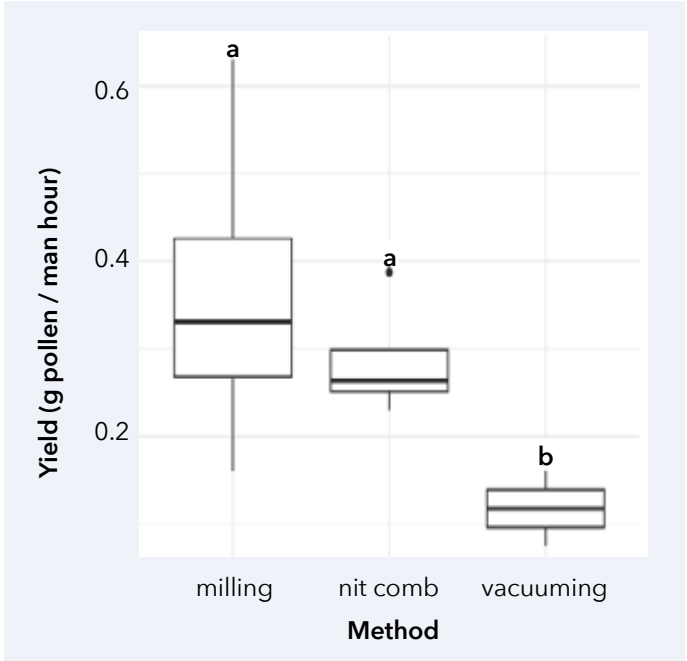


Figure 5: Yield of pollen from cherry cultivars Rosann and Sweetheart® per man hour using three different collection techniques. Boxes represent the middle 50% of data. Lines in the boxes represent the median values. Different letters above boxes represent treatments that are significantly different according to a Kruskal-Wallis test

- Sieve the anthers with a coarse sieve to remove white filaments – the white filaments add moisture, slow down drying, and may reduce pollen viability during the sieving step.

For combing flowers:

- Select flowers in stages 3–4 for collection. The variety should be at least 15 percent flowering for collection to be efficient.
- Collect anthers early in the morning before the anthers have started to open. Flowers with many lemon-yellow anthers are ideal.
- Collect into a container with a large, flat bottom (such as a 2L ice cream container) so anthers remain in a single layer.

Processing anthers:

- Allow anthers to open up to release pollen (dehisce) overnight at 18–20°C.
- Press the anthers through a 150 mesh sieve onto a piece of paper or plastic sheet.
- Collect pollen with a clean brush and use the sheet to funnel pollen into airtight jars.
- If using within five days, store in refrigerator – if storing longer, freeze the pollen until use.

Pollen was manually applied to pollinate cherry flowers using an airbrush to supplement natural pollinators; a tool commonly used in small-scale kiwifruit pollination trials (Figure 1). The cherry pollen was suspended in a solution of PollenAid® and deionized water, at a concentration of 0.6 g/L. Pollination of a whole planar tree took as little five minutes. For mature standard trees, application took 45–60 minutes. Approximately 200mL of solution was used per mature tree (roughly 74 g/ha).

In our trial, initial fruit set was slightly higher in trees that received supplementary pollen on top of natural pollination alone, but there was no significant difference in final fruit set. However, as pollination conditions (weather, bloom synchrony and bee activity) were ideal in the 2024 Blenheim flowering season, there may not have been a pollination deficit which would have benefitted from supplementary pollen.

This is not uncommon in cherry and may be weather dependent (inclement weather during pollination, for example, may hinder the activity of pollinators). In the Pacific Northwest, Matthew Whiting (University of Washington) has found that artificial pollination for cherries only yielded benefits every other year. Further trials, under local conditions, will help provide a clearer picture of the benefit of artificial pollination for the New Zealand cherry industry. ●

Acknowledgements

This project was funded by the Ministry of Business, Innovation and Employment (MBIE) Novel Nozzles for Autonomous Pollination, and Cherrybank Orchard.

The e-Bin modular robot developed at the University of Waikato towing strawberry pickers in a harvesting buggy – the modular solution can be reconfigured to assist in kiwifruit harvesting and orchard activities to ensure year-round utilisation

TOO SMALL TO AUTOMATE ALONE?

Nick Pickering, senior lecturer at the University of Waikato, brings 24 years of automation experience to New Zealand's agricultural sector. He has a background in complex avionic and digital systems, has helped develop robotics solutions for the kiwifruit sector and recently published a think piece as part of an Aotearoa Horticulture Action Plan. In this conversation with NZGrower & Orchardist, *Nick argues that a collaborative approach could help New Zealand growers keep pace with global productivity gains.*

Why is technology important to New Zealand horticulture?

"In the coming years, people will likely want crops that are grown in a way that uses less water and chemicals. Supermarkets will prefer companies that can predict how much they will supply. Workers will want to work in orchards with technology that makes their jobs easier. Growers will do better if they optimise growing methods. Technology is key to all of that, so growers will need technology to grow successfully in the future."

Nick Pickering, Senior Lecturer at the University of Waikato

We're only a small country, can't we just consume technology from the global market?

"Yes and no. The global market is poised to offer technological solutions; however, historical industrial revolutions have demonstrated that technological advancements mostly benefit those who can exploit economies of scale. This raises questions about the fate of growers who lack such scale. What are the implications for rural growers in regions where market support is not financially feasible? Will our larger growers be able to achieve the same economies of scale as our global competitors?"

HORTICULTURE TRANSFORMERS: CAN A MODULAR APPROACH IMPROVE GROWER ACCESS TO AUTOMATION

Read the full article here:
www.hortnz.co.nz/assets/About-Us/Aotearoa-Horticulture-Action-Plan/Modular-agritech-think-piece-FINAL.pdf

Can we rely on local agritech manufacturers to develop and service solutions for New Zealand?

"Some companies will cover off the big crops that have a global marketplace. But for specific crops in specific New Zealand conditions, the return on investment will often be out of reach for agritech start-ups if they have to cover the full range of disciplines needed to research, design and operate these often complex solutions.

"If you have the option of building a solution that can have a market of thousands of units globally compared to only tens of units in New Zealand, then economics will prevail. A good example of this is with asparagus harvesting where crops look different globally. It may not be viable for one company to design, productionise, distribute and support a specialist solution incorporating a transportation platform, autonomous navigation, 3D spear localisation, ripeness detection, complex path planning, and often sophisticated robot arms to harvest the crop without any damage.

"But it may be viable if we have re-usable 'Lego-like' building blocks and can leverage the local ecosystem to tailor the asparagus-specific aspects.

"Even though we're seeing some New Zealand funding for developing prototypes, it's proving a challenge to scale and retain that knowledge and keep the equipment up to date. You need a lot of investment to scale these things. Some of these technologies are integrating maybe seven disciplines from IT to engineering. It's a big risk to hire a bunch of people for 130 grand a year to do robotics if you're only making small volumes of equipment. And people often underestimate the high cost of setting up a support system. If a machine breaks down for four weeks, that's unacceptable in a time-sensitive industry like horticulture."

What can the wider horticulture industry do to help New Zealand growers to compete?

"For the areas where the global agritech ecosystem won't bother playing with us, we might need to adopt a more collaborative approach.

"What I'm proposing is a way to work better together – the Modular Agritech Systems for Horticulture (MAS-H) concept. It's effectively a framework of interoperable hardware and software technology building blocks to take care of the common capabilities. This modular design allows equipment to be repurposed throughout the growing season – for example, using the same base unit for kiwifruit harvesting, then pruning, then surveying. And then it can go off and work in another crop like strawberries for a couple of months.

"It's a case of setting up our local ecosystem so it can compete and deliver products where the big global suppliers don't want to play. Traditionally we don't make big complex systems in New Zealand but we've got a lot of knowhow and a recipe for collaboration from aviation.

TRANSFORMING HORTICULTURE: MAS-H

Nick Pickering's Modular Agritech Systems for Horticulture (MAS-H) concept proposes reusable automation building blocks that can be reconfigured across various crops and tasks year-round. The approach features four key layers: a transport layer, a robotics layer, a data capture layer, and a software layer. The system addresses critical adoption barriers by reducing capital constraints, improving servicing support via common spare parts, and enabling technology sharing across different crops.

Sound like something you'd like to be involved with? Find out more in Nick's Aotearoa Horticulture Action Plan think piece on the HortNZ website.

www.hortnz.co.nz

WATCH HOW THE E-BIN ASSISTS KIWIFRUIT HARVESTING

Watch how the e-Bin assists kiwifruit harvesting on the University of Waikato YouTube channel: **www.youtube.com/watch?v=HUcZmpwm27U**

MAS-H leverages academia better to provide some of those building blocks so that local suppliers can be successful without each needing tens of millions of dollars of investment.

> **"It's a case of setting up our local ecosystem so it can compete and deliver products where the big global suppliers don't want to play**

"Say for example you are a small business building trailers. It might not be worth developing a whole new technology team of ten specialists for a solution for strawberries because you're not going to sell that many, but it might become worth it if you're just integrating the motors and sensors that somebody else has done.

"It does require a bit of maturity and it does require us to be smart in where we pick to play. There's no point in spending a fortune doing something when there is a product already out there. But there are areas where we will need to do it or else nobody will."

How can the industry fund a collaborative approach, given the shortage of capital in New Zealand?

"I think the only way that it gets going is by reallocating some of the existing funding streams to create this core agnostic capability. Look at the millions that's already going into agritech through many mechanisms: the different government and industry funding programmes, agritech direct investment. Should we allocate a small percentage of that for the benefit of all of us?

"It won't be easy. That's why it's not been done before. Collaboration is hard. But I've worked on large complex projects in the military, aviation and the highly competitive airlines where it's been successful. It's a case of, do we want to do it? Do the future challenges facing horticulture warrant us to be mature enough to work better together?" ●

Electrostack's robot palletiser in action during a trial at Seeka packhouse in Te Puke

ROBOT STACKER IN TE PUKE

Seeka is currently trialling the Electrostack robotic stacker prototype at their Kiwi Kool Packhouse (KKP) in Te Puke. This locally engineered solution stacks eight boxes per minute, offering significant efficiency gains.

"The machine was built and programmed right here in Te Puke at the Electrodip workshop, including all the fabrication and wiring," says Sean Carey, automation engineer at Electrodip who designed the lightweight, small-footprint machine.

Seeka regional manager Jarrad Bates has been impressed with the trial so far. "The fact it can stack and destack different pallets at the same time is great. The scanning system provides the traceability we need and being able to move it around easily is certainly beneficial."

> **"This locally engineered solution stacks eight boxes per minute, offering significant efficiency gains**

The Electrostack is currently being trialled on a slower manual infeed, but Jarrad is looking forward to seeing it in action on a high-speed line. "It will be good to see it running at max-capacity."

electrodip.co.nz

The Godmother of the Kowhai *Gill Cameron at the Port of Tauranga to commemorate the first biofuel charter*

BIOFUEL KIWIFRUIT CHARTER TO CHINA

Fresh Carriers Co., Ltd (FCC) and Zespri have made history with their first kiwifruit shipment powered by low-emissions biofuel made from used cooking oil.

Burning biofuel for the entire voyage from Tauranga, the vessel *Kowhai* docked at Shanghai's Nangang Port in March, marking the beginning of Zespri's 2025/26 season in Greater China. The biofuel blend was expected to reduce emissions compared to conventional fuel by approximately 16 percent for the voyage.

"Shipping has the largest carbon impact across our supply chain, making up more than 40 percent of Zespri's emissions for fruit sold globally," notes Zespri chief executive Jason Te Brake. He adds that this initiative is "part of understanding what we need to do on the ground so we can scale this in the future."

This year FCC has 44 ships carrying around 240,000 pallets of Zespri Kiwifruit to Japan, Korea, China and Taiwan. Additionally, FCC has a ship discharging Philippine bananas and pineapples in Auckland and Lyttelton every two weeks for supply to New Zealand's domestic market.

www.zespri.com

Napier Port is a key regional gateway for horticulture exports. Photo by Florence Charvin

WHERE ARE ALL THE **SHIPPING CONTAINERS?**

Despite a quality harvest, New Zealand's onion growers and exporters are grappling with shipping container shortages. The frustrating state of the supply chain threatens customer confidence in New Zealand produce and doesn't bode well for the government's goal of doubling export revenue.

John Gauldie

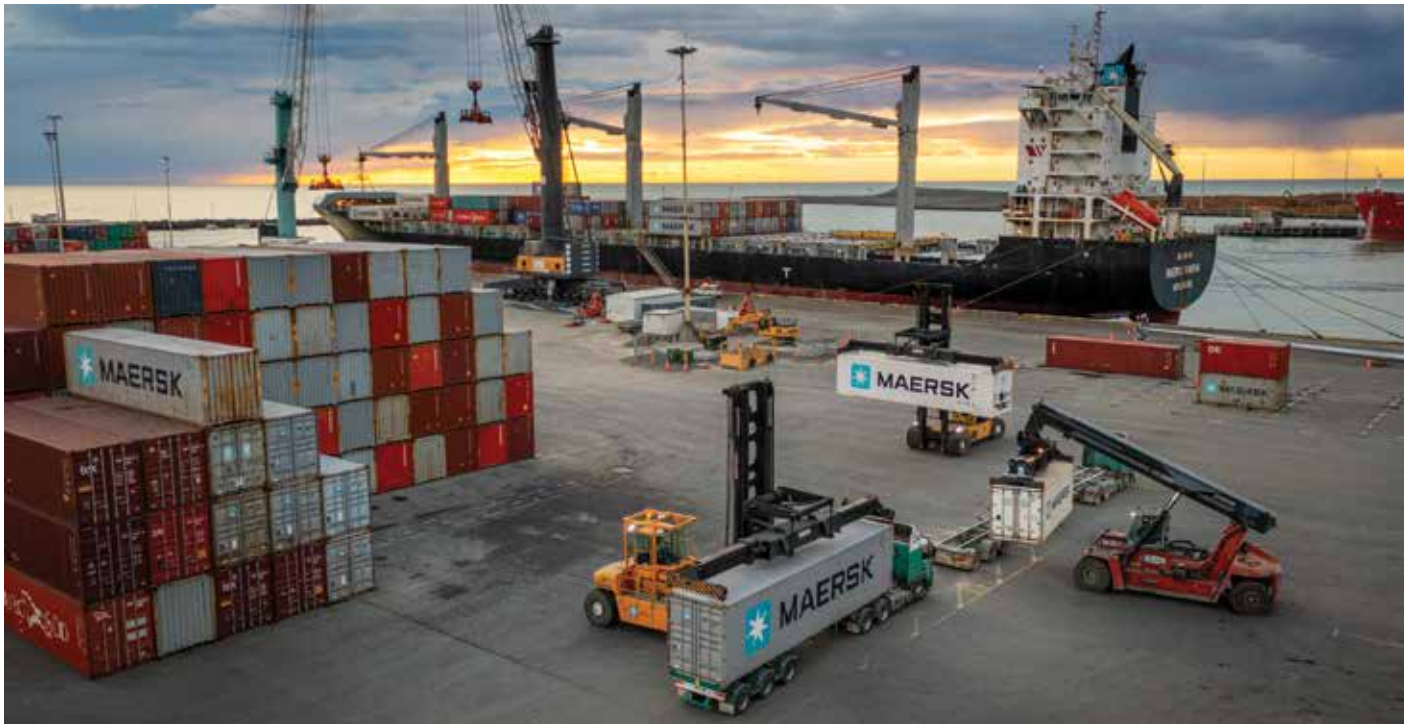
KEY POINTS

- Exporters are struggling with shipping container shortages
- Poor productivity at Auckland's port creates a ripple effect across the entire national supply chain
- Consensus is building for hub-and-spoke transshipment with a coastal feeder service

"There's a big demand for shipping capacity from exporters at this time of year with apples and kiwifruit moving on top of the red meat and dairy. Unfortunately, lower value goods like onions get squeezed the hardest if there is not enough capacity," warns Mike Knowles, chair of the NZ Cargo Owners Council.

The problems stem largely from shipping capacity constraints and port inefficiencies that have not recovered to pre-pandemic levels, creating a bottleneck for the nation's vital export sector.

According to Mike, New Zealand's poor productivity at some key ports affects returns for global shipping companies on their assets (ships), so they deploy those assets to other trades globally where they can earn a better



PrimePort Timaru recently entered a strategic alliance with Port of Tauranga to grow Timaru as a marshalling point for South Island cargo. Photo courtesy of Quality Marshalling

return. Additionally, the poor productivity increases the length of time a ship spends going around the coast of New Zealand, so instead of getting 52 calls a year, we are getting in the low 40s. That further reduces container arrivals and obviously capacity.

"It basically comes down to a reduction in capacity caused by fewer ships and smaller ships arriving in New Zealand and poor productivity when they get here."

The ripple effects extend throughout the supply chain. Overseas supermarket programmes need reliability.

"Some exporters have overseas customers with no cool store facilities to receive their product on arrival," Mike says. "Those customers are looking for a regular container a week to arrive. When that doesn't happen and they receive two or three containers in a following week, they cannot handle those volumes and cancel orders."

At a time of geopolitical turmoil affecting major shipping routes, New Zealand's distance from its markets puts even more pressure on exporters to meet customer expectations.

"Global shocks to the supply chain will keep occurring," Mike warns. "Because of our distance to and from international markets, we are already coming from behind. To be competitive, it is imperative that we focus on what we can control and operate an efficient, highly productive freight supply chain across our roads, rail, and ports."

With the government aiming to double export revenue, the question remains whether New Zealand's ports and logistics infrastructure will be up to the challenge. As Mike pointedly asks: "The government wants to double export revenue – well that's going to also mean an increase in volume. How are we going to get that through the ports that are already struggling now?"

The root causes of these challenges appear to be systemic rather than temporary geopolitical disruptions. The national supply chain is a system with each port having to play its part in getting ships in and out efficiently so they can move to the next port on schedule. He identifies Auckland's port as a critical weak link.

"As New Zealand aims to increase its export revenue, addressing these supply chain inefficiencies has become more urgent than ever

"A big part of it comes down to Port of Auckland productivity. That's the first port of call and has a knock-on effect for other ports around the country. Even if other ports are performing well, the system just gets stuck, cargo is not moving, trains are half empty – it all just creates huge costs but also affects customers."

The NZ Cargo Owners Council recently convened a meeting at CentrePort, bringing together around 60 members including representatives from export, import and supply chain affiliated businesses. The meeting featured keynote speakers including economist Cameron Bagrie and Ministry of Foreign Affairs and Trade Deputy Secretary Trade and Economic Vangelis Vitalis.

A high performing supply chain is critical to horticulture's export success. Photo courtesy of Quality Marshalling

"For too long there has not been sufficient attention at a political level on the factors that constrain New Zealand's ability to move our exports through the road/rail/port network and into international markets," Mike continues. "While we're delighted with the government's focus on expanding markets for our goods, we have to be able to get those goods to market on time and at a competitive price."

Industry stakeholders believe the time has come for fundamental changes to New Zealand's infrastructure.

"There seems to be a consensus around the New Zealand supply chain that maybe this is as good as it's going to get. Therefore something has to change and maybe it's time to move to a hub-and-spoke model with transshipment from coastal feeder services serving global shipping in Auckland, Lyttelton and Tauranga," Mike suggests. "It doesn't make sense to continue to send these big oceangoing ships around the country getting delayed."

That approach may feel sour to smaller regional ports that have been performing well. Growers served by those ports will also be concerned by transshipment of their produce through poorly performing big hubs so it has to be done right.

Mike says smaller regional ports would continue to play a vital role in this proposed model. A busy and efficient coastal feeder service is essential to improve domestic logistics and reduce the Cook Strait bottleneck. But it all still depends on the big hubs being productive.

Implementing such changes will require significant infrastructure investment to handle transshipment volumes efficiently. "For that to happen there needs to be changes to regulations and it will be 3-5 years to get a solution."

Technology has to form part of the solution to increase productivity as well, though previous attempts to automate at the Port of Auckland haven't all been successful. And Mike highlights the particular frustration around delays to critical infrastructure projects – the long-awaited Tauranga Port berth extension is a case in point.

"We've literally been waiting for years for this much needed infrastructure to enable greater flows of cargo through the port," Mike notes. "Government's failure to prioritise this has been a significant handbrake on growth and an accelerant of congestion which we are seeing firsthand now. Both impact the entire supply chain, ultimately adding extra costs and undermining the nation's competitiveness. The Tauranga wharf extension will be accompanied by much needed automation which is proven technology globally. This will hopefully spur other ports into similar investment."

As New Zealand aims to increase its export revenue, addressing these supply chain inefficiencies has become more urgent than ever. High performing ports will attract global shipping, landing more containers where growers need them.

THE ONION **MARKET OUTLOOK**

Kazi Talaska : Onions New Zealand general manager

It's an interesting time for global trade. At the time of writing, there is significant uncertainty surrounding United States tariffs and the ripple effects they may have on international markets. Global trade has become so interconnected that it wouldn't be surprising to see these changes impact New Zealand's trade as well.

Specific sectors such as steel, aluminium, and certain derivatives have been subjected to a 25 percent tariff. Meanwhile, other goods – including horticultural products and onion exports – are facing an additional 10 percent reciprocal tariff. As countries around the world settle on varying tariff rates, trade negotiations may take longer than hoped to reach favourable outcomes.

Although New Zealand does export onions to the United States, the volumes are relatively small – approximately 8000 tonnes were shipped in the 2024 calendar year. The United States, in turn, produces and exports a more significant quantity of onions, primarily to Canada and Mexico. We will be closely monitoring how these global trade dynamics affect the movement of onions worldwide.

Onion market access developments

Onions New Zealand remains committed to enabling trade by retaining existing markets and diversifying into new ones. Over the past quarter, we have worked closely with the Ministry for Primary Industries (MPI) and internal stakeholders to facilitate trade with Indonesia and Thailand.

Indonesia requires fumigation of onions to meet its biosecurity standards – a common phytosanitary measure used by countries to protect local agriculture. New Zealand has developed an export protocol in line with international standards to maintain access to the Indonesian market. We continue to collaborate with MPI and Indonesian authorities to ensure our products meet all necessary requirements.

To further strengthen this relationship and support Indonesian allium farmers, Onions New Zealand is involved in a three-year cooperation agreement with the Indonesian Ministry of Agriculture. Now in its second year, the programme includes projects focused on pest and disease identification, as well as demonstration plots of different allium varieties suited to various regions. Progress over the past quarter has been very promising.

A demonstration plot in Indonesia for shallot varieties, part of a cooperation between Onions New Zealand and the Indonesian Ministry of Agriculture

Kazi Talaska representing New Zealand growers at a site visit in Lembang, Indonesia

Thailand: a growth opportunity

Thailand represents a promising growth market for New Zealand onions. This year, supported by the Humble to Hero Sustainable Food and Fibre Futures (SFFF) programme and local exporters, we are trialling a digital marketing campaign under the 'New Zealand Onions' brand. This campaign aims to share the story of New Zealand growers with consumers around the world. A small-scale digital trial will help us better understand local consumer preferences and build product awareness.

More info:
www.newzealandonions.com

Trial shipments

Through the Humble to Hero programme, Onions New Zealand is supporting exporters in sending trial shipments to emerging or untapped markets. This ongoing initiative allows us to explore new opportunities and assess market potential.

If you're interested in learning more, feel free to contact us at **info@onionsnz.com**.

Looking ahead

Global uncertainty may also present opportunities. New Zealand onion exporters are well-positioned to respond, thanks to the high quality of southern hemisphere produce. Over the past year, favourable weather conditions across the country have resulted in premium-quality onions – excellent in both shelf life and taste, offering great value for importers around the world. ●

INTEGRATED PEST MANAGEMENT IN POTATOES

Pests can cause extensive damage to crops. We need to work together to develop effective and sustainable pest control in agriculture using the principles of Integrated Pest Management (IPM). Earlier this year Dr Paul Horne from IPM Technologies Pty Ltd visited New Zealand. He kindly contributed this article for Potatoes New Zealand.

Dr Paul Horne : IPM Technologies Pty Ltd

When controlling pests, it is often assumed that pesticides are the only option but in fact there are three control methods. Using pesticides is one of those methods and the others are biological controls (usually insects and mites that eat the pests) and cultural controls (management methods that influence either pests or biological control agents). All Integrated Pest Management (IPM) means is trying to use all three methods in a compatible way. So, there are three control methods working on pests and there is not a reliance solely on pesticides.

Biological controls

The key biological controls are either Predators, Parasitoids or Pathogens. Depending on the pest involved, different biological control agents will provide different levels of impact on the pests. For example, aphids are attacked by a range of predators (including ladybirds, lacewings and hoverflies) and parasitoids (tiny wasps) and pathogens (usually fungi). Potato tuber moth is attacked by native predatory damsel bugs and introduced species of parasitoid wasps.

However, when a new pest arrives, such as tomato potato psyllid (TPP), it often has escaped key parasitoids and so the generalist predators become relatively more important biological control agents.

Cultural controls

Cultural controls are often the most important aspect of pest control but are often underestimated. For example, location (isolation) is a control method used by seed growers to reduce risk of virus spread by insects. Variety can be all that is needed at times, as a resistant variety means that no additional controls are required for that problem.

For potato tuber moth, soil management and irrigation are key aspects for control by stopping caterpillars obtaining access to tubers under the ground. If these control options are not utilised then biological controls and pesticides may not provide sufficient protection, especially for high-setting varieties. Reducing pest pressure by removing alternative hosts (for example boxthorn for TPP) or controlling volunteer potatoes and weeds for thrips management can significantly affect pest control.

> “ Cultural controls are often the most important aspect of pest control but are often underestimated

The other way that cultural controls can work is by providing a nectar source for beneficial species such as wasps and hoverflies. This gives the biological control agents a food source that can significantly extend their life-span and fecundity (how many eggs they produce). In this way the impact of even a small population of beneficial species can be greatly enhanced. These beneficial species are active flyers and so border plantings are sufficient for a population of predators or parasitoids over an entire paddock.

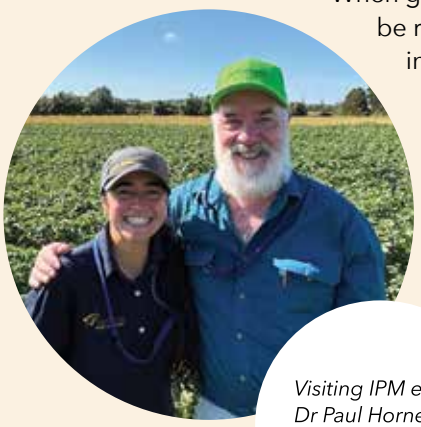
Pesticides

Insecticides and fungicides vary greatly in terms of their impact on biological control agents. Some are toxic to many beneficial species but many newer pesticides can be safe to some species and highly toxic to others. Obviously, in an IPM strategy the aim would be to select a product that kills the pest but not the key beneficial species. To assist in making such a decision there are a range of websites, that are often free, which provide ‘side-effects guides’. These are frequently presented as colour-coded (‘traffic light’) charts, with green being safe, yellow being moderately toxic and red being highly toxic to any particular species. In this way the relative impact of different pesticides can be compared and where some choices are available, a grower can choose a least toxic option.

It is important to recognise that these guides are constructed using a single spray at the label rate and so multiple sprays or the use of higher rates can significantly increase the side-effects. It is also important to realise that the three categories (safe/ moderate/ toxic) have a broad range within each case. Usually "Safe" is described as killing 0–29 percent of the test population and "Moderate" is defined as killing 30–79 percent of the test population. So even a couple of "safe" sprays can have a detrimental impact on beneficial insects and mites. The guides are simply providing the relative impact of products and it is still important to minimise pesticide use.

Integrated Pest Management

When growers implement IPM the results can be remarkable. By avoiding disruptive insecticides and encouraging beneficial species, the impact of biological control agents becomes very significant. When combined with other cultural controls the overall pest management is achieved without reliance on pesticides alone. This has another benefit in that the reduced use of IPM compatible insecticides means that the likelihood of insecticide resistance is also reduced and the products will have a longer life.



Visiting IPM expert Dr Paul Horne with Potatoes New Zealand's Paula Lleras

UPCOMING EVENTS

Special General Meeting – Potatoes New Zealand

Ashburton Events Centre
Tuesday 20 May

Potatoes New Zealand Conference

Christchurch Town Hall
12–13 August 2025

Register Now:
http://conference.potatoesnz.co.nz

QUESTIONS

If you have any questions, please contact Potatoes New Zealand.

0800 399 674

info@potatoesnz.co.nz

www.potatoesnz.co.nz

New Zealand Apples & Pears

REMARKABLE YEAR FOR APPLES

Karen Morrish : NZ Apples and Pears chief executive

A spectacular season for apple growers is bringing plenty of optimism about the future

The promise of an excellent harvest has well and truly been exceeded, with one of the best years on record for New Zealand's apple and pear industry.

National harvest began in February with early varieties, including Royal Gala coming off the tree in excellent condition, with the last of the late season fruit heading to the packhouse as we speak. Packhouses themselves are a hive of activity up and down the country.

The exceptional quality and fruit size from this year's harvest has the potential to push the industry to exceed the billion-dollar revenue from last year, and has brought a real sense of optimism to the sector.

For the first time in many years, certainly since pre-Covid, everything aligned to set the stage for a remarkable year.

Textbook winter and spring conditions were nothing short of ideal, particularly for our North Island regions of Hawke's Bay and Tairāwhiti; and while Tasman and Central Otago have faced a handful of – mostly weather-related – challenges, the overall crop remains excellent.

In February, we estimated the national crop would likely come in at 21.0 million TCE (Tray Carton Equivalents). This was a significant increase of 10 percent on the 2024 crop of 19.1 million TCE and a jump of 21 percent from the 2023 crop of 17.4 million TCE.

Judging on the crop coming through our nation's packhouses now, we feel comfortable with the increase. This growth is a testament to the hard work and dedication of our growers, who have consistently strived to produce the best quality fruit.

This year's harvest has exceptional colour, eating quality, and flavour. It is incredibly clean and the storability will be as good as ever.

The first shipments of this season's fruit are already in markets overseas, and the response has been overwhelmingly positive. Demand in key export markets remains robust, with consumers consistently returning for New Zealand fruit.

As the picking season nears completion, there is confidence that this year's crop will continue to meet and exceed the expectations of international customers.

Looking ahead, while this season brings with it a real sense of optimism, it is a bounce back, not a leap forward.

Sector growth and success remains reliant on getting the conditions right, and there are undoubtedly potential headwinds on the horizon. At NZ Apples and Pears, our key strategic focus is ensuring the right levers are activated to deliver maximum grower return.

Upholding the high standards that have made New Zealand apples and pears a preferred choice for consumers around the world will become increasingly difficult if growers do not have access to: efficient water takes; working capital; effective agrichemicals; confidence and commitment to the industry's vital Recognised Seasonal Employer scheme; and sustainable, research-based solutions.

> **"The exceptional quality and fruit size from this year's harvest has the potential to push the industry to exceed the billion-dollar revenue from last year**

Market access and the confidence of global markets must also be carefully managed to allow trade to be conducted efficiently.

NZ Apples and Pears continues to advocate for our industry, ensuring these needs and priorities are heard loud and clear. However, it must be said, that when a season like this comes along, one so spectacular that the fruit looks like bright red Christmas baubles on a tree, it makes the task that much easier.

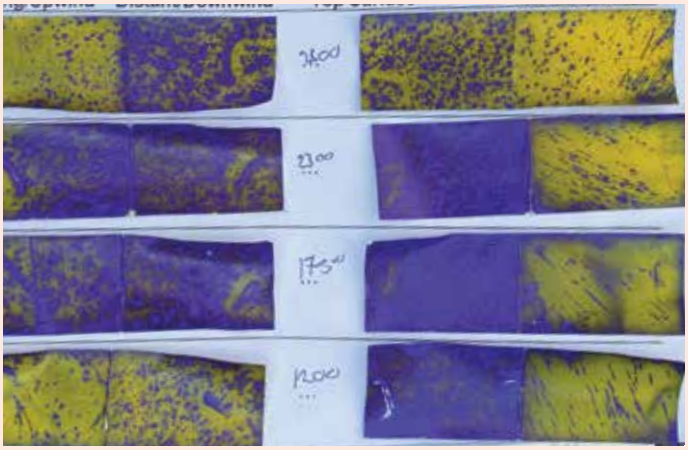
This year's harvest is a testament to industry resilience. It showcases how grower dedication is amply rewarded when the seasons align, and when that happens, New Zealand's pipfruit industry truly lives up to its reputation as a world leader.

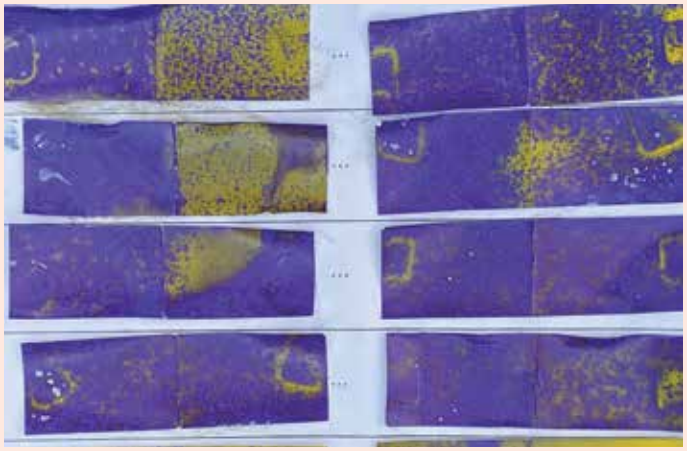
Nearing the end of the picking season, this year's crop is looking exceptional

TomatoesNZ

SPRAY **TIPS AND TRICKS**

Dinah Cohen : TomatoesNZ general manager





Paper testing spray coverage shows how nozzle adjustment can help reach targeted areas – for example the test on the left showed poor coverage (yellow) on the underside of leaves, while the test on the right showed the effect of an adjusted nozzle

In March, TomatoesNZ hosted two practical spray workshops to address some issues that might be hindering growers when they spray their crops. Dr David Manktelow is a spray application specialist and had many tips and tricks to share. We are currently editing a video which we hope to be able to share with you soon after this magazine is published, but in the meantime here are some things you can already think about.

Know where the pest you are targeting sits in your crop and the coverage requirements of the agrichemicals you use. For example, whitefly adults are likely to be in the top section of the plants, on the underside of leaves. Efficacy for most soft whitefly control chemicals requires direct contact with the pest.

The 110-degree flat fan nozzles that are fitted to many tomato vertical spray booms project about half their output downwards, which means spray coverage to leaf undersides is compromised. In the workshops, David demonstrated how a pair of 40-degree hollow cone nozzles more efficiently projected spray upwards into the canopy and significantly improved under-leaf coverage.

The workshops emphasised the need to visualise spray coverage and then compare coverage achieved from changes to spraying practices by using folded water sensitive papers. Two ways to use the papers are:
1) pinning them through your crop target area, and
2) clipping horizontal and vertical papers up a vertical spray pole. These are shown in the coming video.

Before spraying always check your filters and nozzles; clean them if required.

Always check the product labels for application rates and other use instructions. Once you have an appropriate spray tank mix, the size of the spraying target should dictate how much spray volume you need to apply.

You will need to make adjustments according to the age of the plant – plants with more or less foliage, and areas of high plant density, will require different volumes of spray.

There is no point in spraying past the point of run-off, as this will mean you are essentially spraying the floor and wasting your money!

If your spray equipment allows it, spraying opposite row sides from the opposite travel direction will almost always provide better spray coverage than spraying both sides from the same travel direction.

Marijke Haira from FTEK demonstrating nozzle selection for the RLAP (Robotic Labour Assist Platform) automated sprayer

Because greenhouse growing means there is no rain to disperse the spray mix, it needs to land in the right place. Using an appropriate adjuvant can help improve spray coverage. That is a large subject that deserves its own article and video.

> **Plants with more or less foliage, and areas of high plant density, will require different volumes of spray**

Make notes and take photos! Each time you make a change to your sprayer set-up, use water sensitive papers to determine if the change was positive or not. Your photos and notes will allow you to repeat what worked well.

Finally for now, if you are able to add air assistance to your sprayer, this can significantly help to improve spray coverage, and it presents an opportunity to use lower volume concentrate sprays. Again, this is a large subject that deserves its own coverage.

A guide to sprayer set-ups is available here, and when ready the video will be posted here too: **www.tomatoesnz.co.nz**

Thank you to NZ Gourmet for hosting this practical workshop.

Greenhouse maintenance

Some growers will be pulling out tomato plants and preparing to plant other crops over the winter months. James Harris at Apex Greenhouses advises the following next time you are doing maintenance:

- Check your gutters and clear out any blockages.
- Clean the glass outside and inside to maximise light coming in.
- Replace any seals that are worn.
- Repair any glass breakages as these will be a way for cold air and pests to enter.
- Check your vents are working, including the gearbox drivers.
- Grease roof ventilation drive systems.

For any help, no matter the make of your greenhouse, you can contact Apex Greenhouses on telephone **0800 100 618**.

TOUR REPORT

Following the last two publications that shared insights from the TomatoesNZ and Vegetables NZ European Tour of Learning, I am pleased to say that there is a report covering all aspects of the topics that we learnt about on the TomatoesNZ website here: **www.tomatoesnz.co.nz/hot-topics/european-tour-of-learning**

If you have any questions about the trip in general or about a particular aspect of it, please don't hesitate to ask.

SAVE THE DATES!

Date: 12 June
What: Liberibacter workshop
Time: 10am–2pm

There will be a workshop on Liberibacter in conjunction with Potatoes New Zealand and with funding from Te Ahikawariki / Vegetable Industry Centre of Excellence (VICE). Expert on Tomato Potato Psyllid, Jessica Vereijssen from Plant & Food Research, will lead this session.

Date: 25 June
What: First aid course
Time: 2pm–6.30pm (including a 30-minute break)

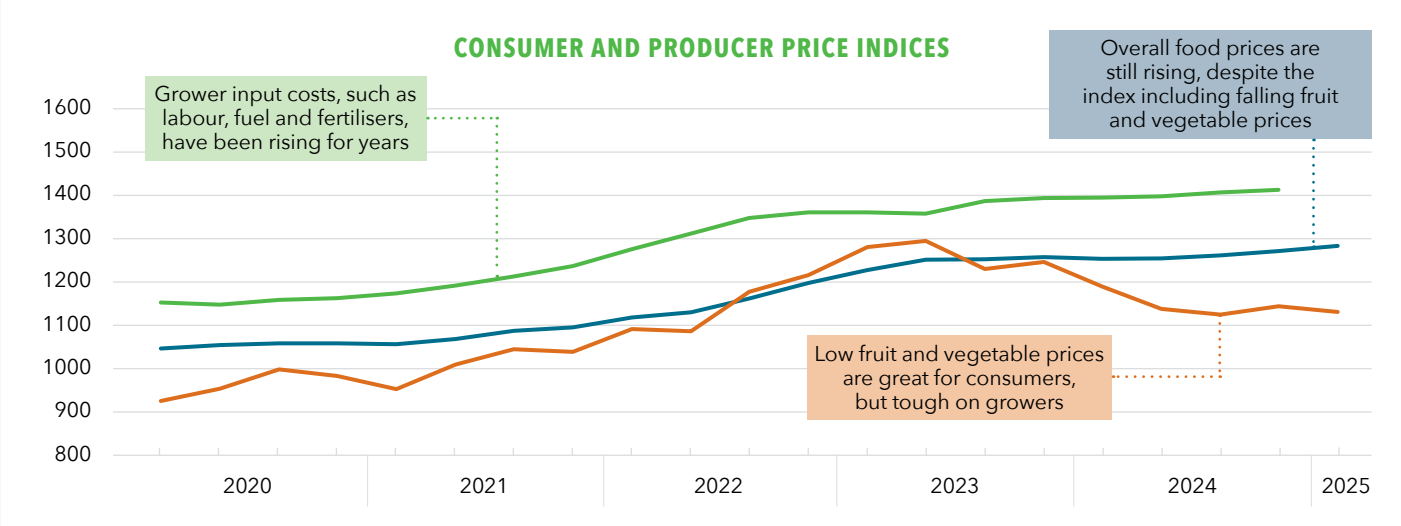
First aid course specifically for growers. Thanks to funding from Horticulture New Zealand and the Grow Home Safe project, we are pleased to offer this in-person course for growers. Places will be strictly limited to 20 people. Contact me on my email below for further details.

Date: 26–27 August
What: Horticulture Conference (Wellington)

TomatoesNZ has 20 free tickets worth $639 (two days of conference plus the Gala Dinner on 27 August) for grower members, up for grabs. Please email me ASAP to claim one of these. There will be sessions on energy, our greenhouse tomato integrated pest management guide, and much more.

If you have any questions about anything fresh tomato related, please don't hesitate to contact me: **dinah.cohen@tomatoesnz.co.nz**

KIWIS STRUGGLE WITH FOOD COSTS DESPITE LOW PRODUCE PRICES



Seasonally adjusted indices published by Statistics NZ show how low domestic prices for fruit and vegetables are squeezing growers to the point of exiting the industry

Consumer NZ's April grocery survey revealed that 30 percent of New Zealanders have had to turn to friends, family, food banks or Work and Income, to get food in the past year.

"What Consumer NZ has found is appalling," says Vegetables NZ chair John Murphy. "New Zealand has lost its way. For example, vegetable prices have been low for more than a year thanks to good growing conditions. However, low prices have not resulted in any noticeable lift in vegetable consumption, so there is obviously more going on here."

If growers are forced out of the industry by unworkable regulations and unsustainably low returns, vegetable prices will increase, making access to quality, nutritious food even harder for New Zealanders.

Plus, severe weather events like those seen in 2022 and 2023 could put vegetables out of reach completely, John says. The government should be deeply troubled by the risks posed to health outcomes.

"We know it is hard to understand, but New Zealand is only one major weather event away from vegetable shortages and much higher prices. In the aftermath of Cyclone Gabrielle, vegetable production was reduced by 10–15 percent and yet prices rose by up to 300 percent."

Vegetables NZ is calling on the government to develop a comprehensive national food strategy to invest in education about food choices, while also ensuring resource management settings enable New Zealand to grow its own healthy food.

John says action needs to be taken now, before it is too late, and vegetable growers are forced out of business.

"In Australia, the government and vegetable industry have come together to mount a campaign to increase vegetable consumption by one more serving a day, having found that Australians eat less than two servings of vegetables a day," John argues.

A 2023 report from Otago University found that if a cohort of New Zealanders added one more vegetable a day to their diet, just over $830 million would be saved in the health system, over the life span of that population.

"That's why a food strategy for New Zealand must take a national view of vegetable production, and ensure the country can continue to grow vegetables in key areas such as Pukekohe and Levin, which are currently under threat from unworkable regional resource management approaches."

WORK HEALTH AND SAFETY REFORMS

Last year HortNZ submitted on employer experiences with the Health and Safety at Work Act. The government has made some decisions on how the system will change to be more efficient and better support business. These will carve out small, low-risk businesses from general requirements, reduce tick-box activities, address over-compliance and reduce notification requirements to only significant workplace events.

Changes are expected by the end of the year. For more details and to discuss further, contact HortNZ senior policy advisor Sarah Cameron: **sarah.cameron@hortnz.co.nz**

FREE HELPDESK FOR FRESH PRODUCE FOOD SAFETY

The Fresh Produce Food Safety Helpdesk is a free resource to address food safety enquiries from growers. It has been funded by Hort Innovation Frontiers in Australia and is also available in New Zealand. The helpdesk includes an online chat, email support, and a mobile line, with a set of FAQs covering common topics such as regulatory standards, testing procedures, and best practices in produce safety. Whether you have a question about food safety standards, need compliance advice, or require guidance on where to find the right support or information, the helpdesk is designed to assist you with all your needs.

E: **helpdesk@fpsc-anz.com** | P: **+61 407 814 730** | W: **www.fpsc-anz.com/help-desk**

RESOURCE MANAGEMENT REFORM

The government has unveiled a blueprint to replace the Resource Management Act. Key features include more national standards, regional spatial plans for infrastructure planning, and one regulatory plan per region. The system will still determine environmental limits, particularly for freshwater management.

In April Ministers agreed to reduce the number of farms required to have a freshwater farm plan and to take a risk-based approach to certification. Plans will still manage environmental impacts, but without unnecessary red tape, and they won't be required for small blocks.

In March the government announced upcoming changes to the National Policy Statement for Highly Productive Land (NPSHPL), including removing LUC 3 from the definition of HPL.

Meanwhile, HortNZ generally supports a bill of amendments to fix problems before the RMA replacement comes into effect, especially changes to recognise industry assurance programmes for the delivery of freshwater farm plans. HortNZ sought amendments, including providing for a national permitted activity status for commercial vegetable production.

For more details, contact Emily Levenson, HortNZ environmental policy advisor: **emily.levenson@hortnz.co.nz**

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