The ORCHARDIST®

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HORTICULTURE NEW ZEALAND

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AUGUST 2022

'In the future everyone will be world famous for fifteen minutes' – Andy Warhol

This is a phrase that was attributed to American pop-culture artist Andy Warhol in 1968 that would seem exceptionally perceptive in the social media age we live in today.

Bernadine Guilleux : HortNZ vice president

The interpretation of his art was this: over time, the hierarchy of what is worthy of representation will dissipate, and channels for representation will proliferate (think all media channels, including individual accounts within digitised platforms). This will make everything – and anything – worthy of being represented in the public domain – for at least fifteen minutes.

Warhol understood the media's insatiable appetite for the new, and our multi-channel environment has ramped this appetite up even more. The relevance to us in the horticulture industry today is that fame is fleeting and should be treated as such. A person can only process and recall a limited number of individual sound bites and images, so what really matters is the general picture that is built up on a subject by the multiple exposures a person has to it. *That is, it is not the representation of the subject itself that matters, rather the picture that we otherwise call public perception*.

> **"Warhol understood the media's insatiable appetite for the new, and our multi-channel environment has ramped this appetite up even more**

The Commodity Levies Act – passed in 1990 – notes that promotion of the industry (including generic advertising) is a permitted use of the levy. The media environment at the time this legislation was drafted was very different to what it is now, and we need to make sure our strategies adapt accordingly. Horticulture New Zealand has identified its role in managing the overall perception of industry on behalf of growers. While HortNZ and product groups all have public representation functions, in my view, the real opportunity lies in growers appreciating the importance of their individual voices and the role they can play in representing the industry within the multi-channel environment we live in.

While HortNZ core team's focus is on advocacy in Wellington, from a public promotion perspective, it is the growers who are the stars of the show. This month we saw Jay Clarke from Woodhaven Gardens in Levin, and Jacob Coombridge from Webb's Fruit in Central Otago on the mainstream news. The media picked these stories up because they saw a story worthy for them to tell – directly. If every grower used their fifteen minutes of fame with intent, the combined exposure of their careful messaging would be our opportunity to build the public's perception of our industry, which will help us to maintain our social licence, and also attract future talent.

Minister Michael Wood, with combined portfolios of Immigration (Modern Slavery and Exploitation Bill) and Workplace Relations (Fair Pay Agreements), spoke very matter-of-factly in response to the hospitality sector's workforce shortages. He said that the hospitality sector needs to consider how to make its 'low-wage, insecure work conditions industry' a more attractive place to work.

The combination of impending workplace relations reform and changes to immigration settings will affect our sector. While advocacy remains focussed on educating government Ministers on just how intricate and diverse our employment environment is, the New Zealand horticulture industry has to put its most competitive game face on to attract and retain our future workforce.

> **If every grower used their fifteen minutes of fame with intent, the combined exposure of their careful messaging would be our opportunity to build the public's perception of our industry, which will help us to maintain our social licence, and also attract future talent**

It is one thing to succeed in attracting future talent. We must also find a way to keep them with us. Retention rates in horticulture are the worst[1] in the primary sector, and while this situation may be owed in part to the seasonal nature of our work, this data feeds into policy.

We need to be honest and understand what our industry is like for people to work in and what we can do to improve these statistics. We all know that individual wellbeing matters. If an industry can support its businesses to look after the wellbeing of their workforce, then industry should do so. This is the actual purpose behind the ACC Safety and Wellbeing in Horticulture survey that you will have seen being circulated. If you can make the time to respond, it is a 10-minute investment to give insight into what is happening and what can be done. All up, in 25 minutes you have the possibility to do your bit to shape horticulture as an attractive, popular industry to be in. ●

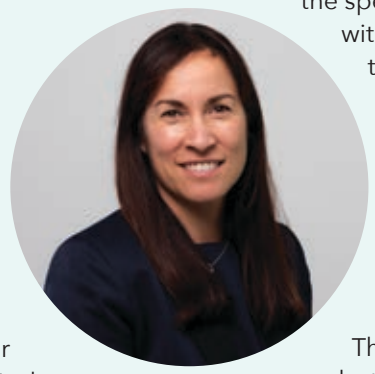
1. *https://www.mpi.govt.nz/dmsdocument/29270-Primary-industries-workforce-fact-sheets*

Listening to and supporting young growers

Recent events such as horticulture's national Young Grower of the Year regional finals, and the Primary Industries Summit in Auckland, have given young people in the primary sector a profile and a voice.

Nadine Tunley : HortNZ chief executive

At the summit, a discussion panel of young people from across the wider primary sector emphasised the role of older mentors. That is, someone with experience and a commitment to bringing young people on board, who made the time to encourage and guide, usually very early on in the young farmer or grower's career. Quite often, this involvement started at secondary school, however, what was consistent was that the listening and guiding ear was readily available, as the young person traversed education and training options and early career choices.



Young Grower of the Year contestants all have to stand up and make speeches in front of a few hundred of the people they work with in our industry and their wider community. To most, it would seem that this is the most daunting task in the competition, as we all know few people relish the opportunity to speak publicly, no matter how often they do it…

While the speeches may vary in content, the focus is always on the industry's future – what it could be like and how the various challenges – such as climate change, labour and changing consumer preferences – could be addressed.

Most contestants touch on the role of technology and automation to address these changes. However, while the speech makers may entertain or entice us with a futuristic vision full of drones, driverless tractors and disease resistant new varieties, they emphasise the role of the human being to direct the growing. They also worry about how automation and robotics could take away the pride that every grower takes in the produce that they grow, as an intersection of land, water, warmth and light.

The current government sees automation and robotics as the key to reducing our industry's labour needs. It also believes that somehow, our industry has underinvested in this 'solution'. Well, these Ministers and their advising officials can't have visited a modern packhouse lately, where quality control, food safety, human safety and speed are all down to the millions

The ORCHARDIST

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that individual growers have invested and continue to invest in technology and automation advances.

Sure, crops like broccoli and asparagus are still picked by hand, but they are the world over because it is the most efficient way to harvest these crops. But even here, New Zealand growers are exploring the future, through the robotic asparagus harvester being developed through a partnership involving growers, the government, technology developers and university academic researchers.

Standing back

The Young Grower of the Year and events like industry summits provide us with the opportunity to stand back, reflect and think about the future. This is vital in an industry that requires considerable doing on a daily basis, which has been exacerbated over the past two plus years by Covid-19.

Young people – like all of us – have been affected by Covid. I think their optimism has been drained as they are even more worried about the future and New Zealand horticulture's place in it.

What they do see however, is a future and a place for them in it. A future that will take advantage of research and development, and automation gains, but will always involve the grower as director and decision maker, as well as a key member of regional communities across New Zealand.

Events like the Young Grower also bring communities together, and this year all the regional awards nights have been oversubscribed as people are hungry for interaction and celebration, as well as reflection and food for thought.

It is perhaps a cliché to say our industry is in 'safe hands' and the 'future looks bright', but it is. And why? Because of the talented young people coming through, and their perspectives and commitment to growing the best produce in the world, while addressing all of the world's challenges through future tools and techniques.

So how can we older industry members help? By making ourselves available, listening and guiding and helping map out the bright future that is New Zealand horticulture. ●

YOUR LEVY AT WORK

INDUSTRY WIDE ISSUES FOR INDUSTRY GOOD

Natural resources and environment

Michelle Sands : HortNZ strategy and policy manager

Water Services Entities Bill

Horticulture New Zealand developed a submission on the Water Services Entities Bill. HortNZ's primary concern with the Bill is its potential impact on the domestic supply of fresh vegetables. There is also a need to protect primary production in peri-urban catchments from water abstractions and discharges.

Horticultural land is often located close to urban centres and shares water sources and receiving waters with urban activities. If water is transferred away from highly productive land to provide lower cost water to support new housing and urban growth, it could undermine domestic food security and the productive capacity of highly productive land. Domestic food supply and food security can also be compromised where freshwater resources, upon which primary production relies, are inevitably degraded by urban growth through reduced recharge, increased peak flows, alteration of stream network functioning, and increased discharge of sediment, metals and hydrocarbons.

It is essential that when water entities are deciding how to achieve their objectives, they are mindful of the impacts of their water abstractions and discharges on wider social, cultural and economic well-beings. We seek that the Bill direct entities to cooperate with rural water and land users to seek solutions to water management that optimise outcomes across all well-beings and all hierarchies of Te Mana o te Wai.

Emissions Reduction Plan

HortNZ presented to the Environment Select Committee in August on New Zealand's first Emissions Budget and the Emissions Reduction Plan.

The Emissions Reduction Plan sets New Zealand's direction for climate action for the next 15 years.

The key issues that HortNZ raised in its submission and to the Select Committee are:

- The importance of safeguarding food security for New Zealanders and the Pacific
- Enabling land use change to horticulture and enabling the use of highly productive land for lower emissions food production
- Promoting assurance systems aligned with international practice (such as GAP).

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Freshwater vision and values – Bay of Plenty and Waikato

The National Policy Statement for Freshwater Management (NPSFM) requires regional councils to develop Freshwater Plan Changes by 2024.

The NPSFM outlines a process through which communities are to have input into the freshwater vision, values and outcomes setting process. Regional councils are starting conversations with their communities on freshwater vision and values.

One of the issues we are highlighting to regional councils is that the NPSFM vision is about historical and current pressures, and future catchment uses for freshwater. Councils must give effect to Te Mana o Te Wai and apply the hierarchy of obligations when setting a freshwater vision.

The freshwater vision should speak to freshwater outcomes and limits. As a result, it needs to reflect the hierarchy of values associated with water bodies, including abstractions and discharges in the catchment.

HortNZ has a consistent long-term vision for regions where fruit and vegetables are grown. It is that food production is supported by innovative and sustainable land and water management practices, which:

- Provide for the domestic supply of fresh vegetables
- Maintain food security for New Zealanders
- Support the transition to low emissions land use
- Improve resilience to the effects of climate change
- Support the use of highly productive land for primary production.

Hawke's Bay – outstanding water bodies mediation

Hawke's Bay Regional Council Plan Change 7: Outstanding Water Bodies proposes to change the Regional Resource Management Plan (RRMP) to include a list of the region's outstanding water bodies, together with a framework that prescribes a high level of protection for these water bodies in future plan making.

The water bodies identified in the Proposed Plan Change 7 are the 'best of the best' within the region, featuring exceptional cultural, spiritual, recreational, natural character, landscape, geological, or ecological values which are remarkable in Hawke's Bay.

> "HortNZ has joined the appeal and is participating in the mediation

The decision on the plan change was appealed by parties wanting to add more water bodies and more criteria. HortNZ has joined the appeal and is participating in the mediation.

The focus of HortNZ's involvement is to help make the plan provisions clear and easy to understand; to ensure that the identification of outstanding water bodies is related to the purpose of the NPSFM, and that only those water bodies that are truly outstanding are captured by the plan change. ●

A guide to New Zealand's biosecurity system: The role of post-border biosecurity in keeping us pest free

BIOSECURITY FEATURE

Anyone involved in a biosecurity response will know first-hand the challenges that involves.

Eve Pleydell : Biosecurity expert

In this fourth article about New Zealand's biosecurity system, we take a look at the crucial roles played by the layers of the system that are on our side of the border and how we can all help to strengthen post-border biosecurity.

Key points:

- Even though New Zealand has a world-leading biosecurity system, it is inevitable that an unwanted pest or disease will occasionally find its way into the country.
- The post-border surveillance system is designed to rapidly detect an invader as soon as possible after its arrival.
- As growers, orchardists and packhouse operators, you can play an important role in protecting New Zealand from damage caused by an invading pest or disease by swiftly reporting anything unusual that you see.
- Developing and implementing a biosecurity plan for your property can also help to keep your own crops and products safe.

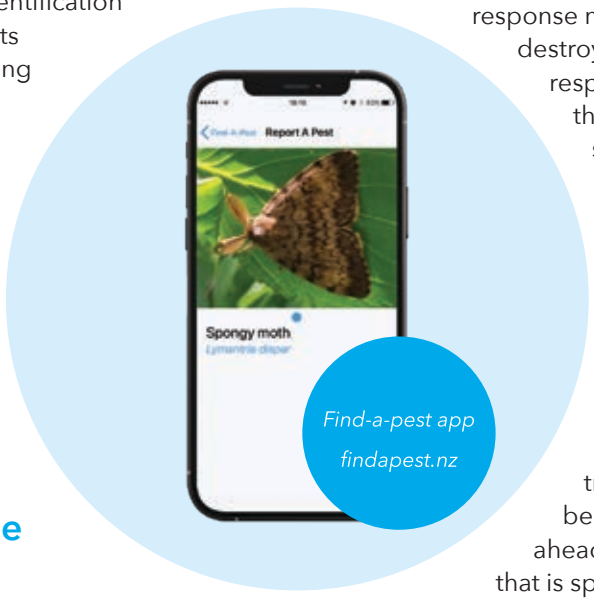
In the first article in this series, we likened the layers of the biosecurity system to a line of Swiss cheeses. On its own, no layer is sufficient to prevent pests and diseases from reaching New Zealand and causing damage here, but multiple layers together provide stronger protection. However, this protection is not absolute. Biosecurity New Zealand, the biosecurity arm of the Ministry for Primary Industries (MPI), talks of layers of protection – starting offshore at the border and here in New Zealand. But zero risk cannot feasibly be achieved. For this reason, it is important that anything unusual is reported as quickly as possible.

One of the ways this can be done is by establishing pest and disease surveillance programmes. Some of these are targeted at specific insects or diseases. For example, Biosecurity New Zealand has surveillance programmes in place for fruit flies, invasive ants and spongy moths (previously known as gypsy moths). Using knowledge of the biology of each pest, traps with lures or baits are placed around possible entry points and regular checking of the traps occurs during the months that they would be most likely to arrive here. These are effective but costly programmes that are reserved for higher priority pests that could have a big impact here. Occasionally, a non-target pest species may be detected this way, which happened in April this year when a fall armyworm moth laid her eggs on a trap for spongy moths near the Port of Tauranga.

> **Using knowledge of the biology of each pest, traps with lures or baits are placed around possible entry points and regular checking of the traps occurs during the months that they would be most likely to arrive here**

What is known as passive surveillance is also an important part of post-border biosecurity, although in truth, it is not really a passive system as it relies on everyone to actively

report unusual things that may be biosecurity hazards. You can notify Biosecurity New Zealand directly using two methods: phoning the pest and disease hotline (0800 80 99 66) or using the new online reporting tool – report.mpi.govt.nz. An alternative is the Find-a-Pest app for insects and weeds. This app allows users to post photos of odd-looking pests for identification by other users. If designated experts using the app identify a pest as being a potentially unwanted species, a notification is sent to Biosecurity New Zealand for investigation.

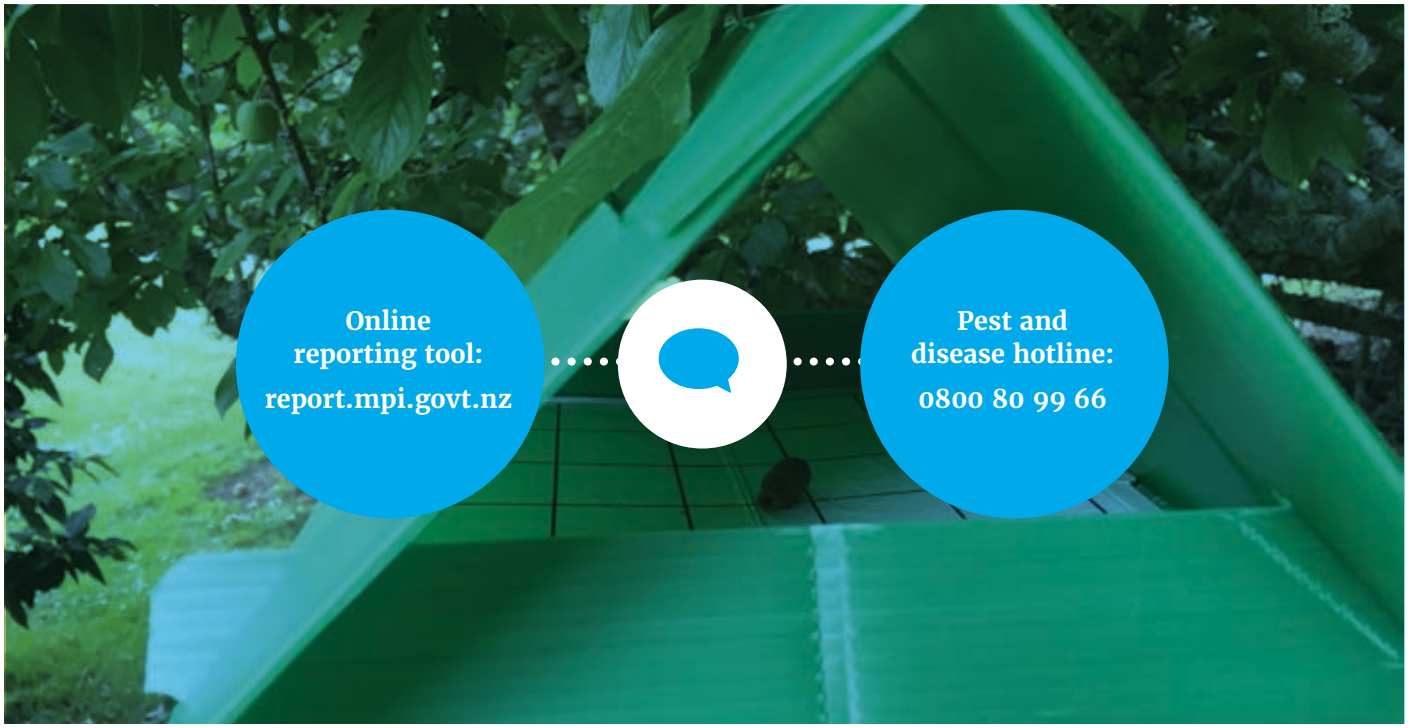


> **While response teams spend considerable time trying to trace the movements of the pest or disease, people proactively reporting unusual things greatly increases the speed at which the tracing can occur**

Any reports of pests or diseases are assessed by a Biosecurity New Zealand specialist. Their role is to assess whether it is an unwanted organism and if so, where it may have come from and for how long it could have been here. If the surveillance system is working well, then new, unwanted pests and diseases are discovered early before they have spread to many places – which makes them far easier to manage than if they have been here for weeks or months and have spread far and wide already.

There are a number of options for managing these unwanted intruders. If they have not yet spread too far and eradication looks feasible, then a biosecurity response may be initiated to 'seek and destroy' this organism. For an eradication response to be effective, all locations that the insect or disease has spread to must be identified and then control measures applied to remove the infected plants or insect infestations. While response teams spend considerable time trying to trace the movements of the pest or disease, people proactively reporting unusual things greatly increases the speed at which the tracing can occur. This is important, because it requires speed to get ahead of an invasive pest or disease that is spreading through our communities.

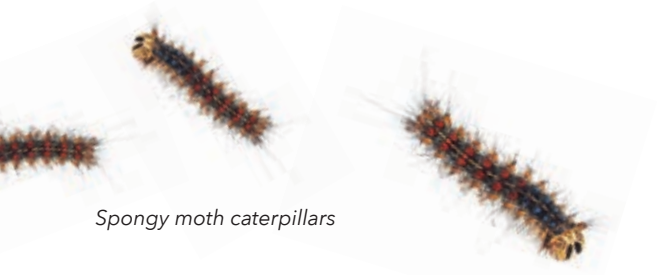
Despite best efforts, it is not always possible to eradicate an unwanted intruder. Sometimes, we have to learn to live with it. In such cases, specific biosecurity practices may be able to contain the pest or disease to a particular area or slow down the rate at which the pest or disease is spreading. In these cases, a long-term management plan may be developed, which is typically managed by the biosecurity team in the local regional council. These plans are designed to assist the region to manage the pest and minimise its negative impacts.



The early stages of any biosecurity response are anxious times for growers and farmers – everyone has questions, but there are often very few certain answers. Growers naturally have concerns about what may happen on their property if an unwanted organism is found there. One of those questions to which there are usually insufficient answers at this stage is 'what will happen if this unwanted intruder does manage to establish on my farm?'

> **... implementing good daily biosecurity practices on your own farm is by far the best way to protect your property**

What is more certain, is that working with the response team to tackle the situation is far more likely to result in a positive outcome, than turning a blind eye and hoping for the best. In addition to this, implementing good daily biosecurity practices on your own farm is by far the best way to protect your property, whether an actual response is in progress or not.



Spongy moth caterpillars

CASE STUDY

Eve Pleydell

As a young vet in practice in the United Kingdom, I was given a valuable lesson in biosecurity from one of our farming clients during the 2001 foot and mouth disease epidemic. I was called to assist with a difficult calving at a high genetic value dairy herd. The cows in this herd were each worth tens of thousands of pounds. If just one of them had tested positive, then the whole herd would have been culled. I arrived at the farm to find the gate closed and the farmer politely, but firmly, refusing to open it. He gave me a pair of dedicated gumboots, checked my overalls were freshly clean and asked me to disinfect my equipment before allowing me to walk onto the farm leaving my car behind me. Due to his biosecurity vigilance, even though the virus came within a few short kilometres of his farm on several occasions, none of his animals became infected and his high-performing herd remained intact. Being ready to instigate effective control measures to protect your own crops and property during an outbreak of an unwanted pest or disease really can be a powerful defence tool.

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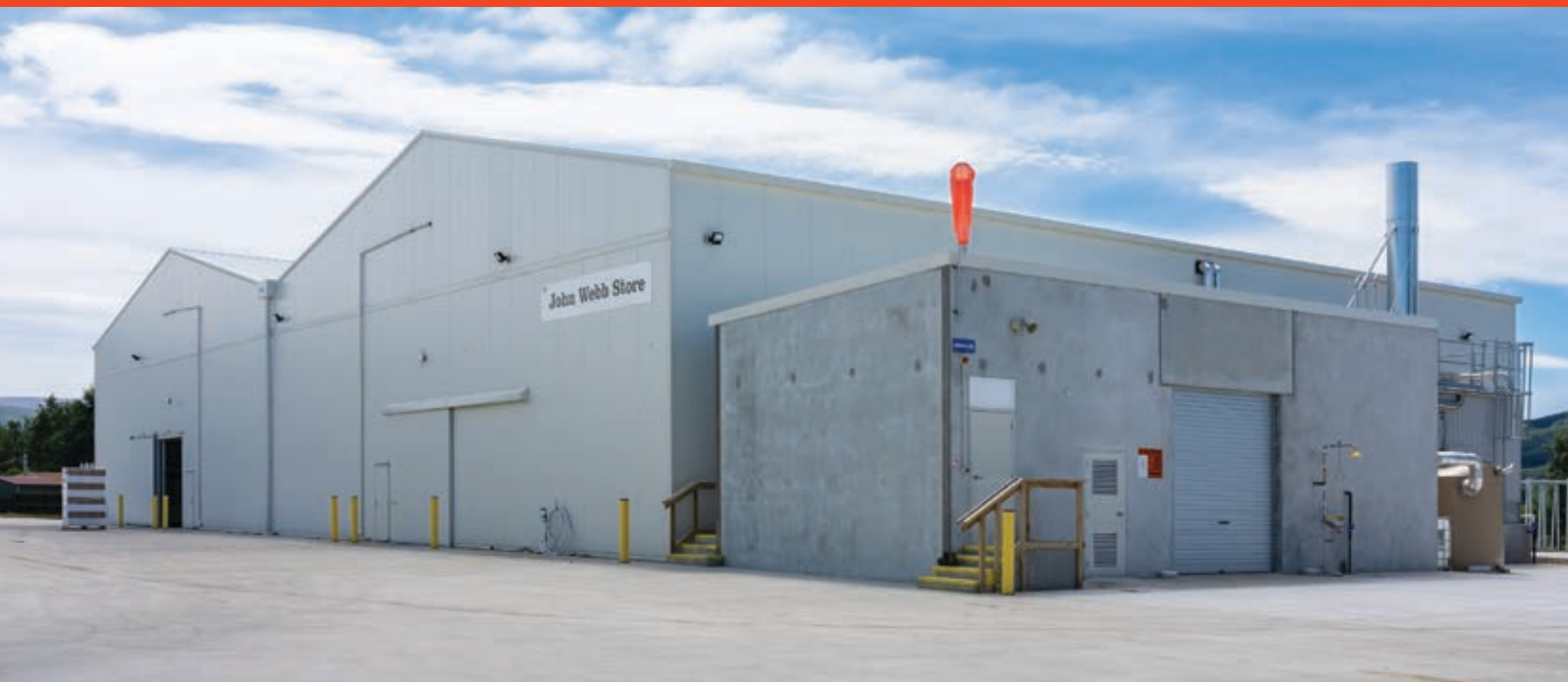

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YOUR INDUSTRY

ACROSS THE SECTOR — ACROSS THE COUNTRY

Kiwifruit vote
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FEATURE ARTICLE

While storms at Nūhaka Subtropika inflicted a bit of shredding to the banana plants, owner Bernard Miville says they quickly recovered

Subtropical fruit forest set up for success in Nūhaka

Former weather forecaster Bernard Miville looked around the country for the perfect location for his subtropical orchard and found that, in Nūhaka, the outlook was very fine indeed. KRISTINE WALSH reports.

In his early years as a weather forecaster, Bernard Miville worked on monitoring sea ice in the freezing waters around his home country, Canada.

These days his ambition is to avoid such climate extremes and that is what led him to buying a patch of land at Nūhaka – between Napier and Gisborne – where he has established his own tropical fruit forest.

"We first started looking around Northland where a lot of subtropical fruits are well established," says Bernard. He and his wife Sandra Fogliani embarked on that search in 2019.

"But as well as deciding that [Northland] was too far from home, we learned that Nūhaka, of all the locations in New Zealand, is predicted to undergo less drastic change in climate over the next 50 years than other places."

Bernard and Sandra finally settled on purchasing one hectare of land in Nūhaka at the end of 2020.

"When we first looked at this piece of land, we looked over the fence and saw bananas growing on the neighbour's property," he says. "That was when we thought we could really do something here."

The couple's home is actually further south in the middle of a stand of native bush in Upper Hutt, Wellington – which, although lovely, does not get enough sun to be a good growing environment. Wellington will remain their base while Bernard works as the manager of operational

Bernard Miville says his smallholding – Nūhaka Subtropika – offers the opportunity to experiment with a wide range of suptropical plants. Images: Kristine Walsh

In the early stages of their orchard's development, husband and wife team Sandra Fogliani (pictured) and Bernard Miville travelled from Wellington to devote a few days a month to weeding and pest control

forecasting at the National Institute of Water and Atmospheric Research (NIWA).

In the meantime, for at least one weekend a month, the couple head to Nūhaka to tend the fledgling plants they have established.

> **"I had travelled for work to a number of Pacific Islands where, for breakfast, we would be served these tiny, fresh bananas ... I'd always wondered if I could grow them in New Zealand**

Bernard says it was a work event that led to the ambitious idea to develop a subtropical orchard. In 2007, after a nearly three-year secondment in Japan where he worked as a data manager at Hokkaido University, Bernard, Sandra and their two children moved to New Zealand.

Bernard had been working for NIWA for almost a decade when the organisation hosted a presentation for staff around how and when they should start planning for retirement.

"By that time, I had travelled for work to a number of Pacific Islands where, for breakfast, we would be served these tiny, fresh bananas," Bernard says. "I'd always wondered if I could grow them in New Zealand and the retirement class got me thinking about that a lot more seriously."

At just 58, Bernard is a way away from retirement so is optimistic his property will be well established by the time he is ready to move there.

As well as the plantings, the couple have also installed irrigation piping accessed from a neighbour's well (with plans to install their own) and at the start of winter, took delivery of a tiny home to make their weekend visits more comfortable.

Bernard was recently chatting to neighbour Tony Anscombe about the cherimoya – custard apples – that both are growing at their Nūhaka properties. Tony's has much more established cherimoya.

Bernard's cherimoya are at fledgling stage while those grown by Tony, who provided the budwood for Bernard, are fruiting so voluminously he's busy in his test kitchen experimenting with wondrous ways to work with them.

"It's amazing what grows around here," says Bernard, looking around the bucolic scene at the tiny settlement near Mahia on the East Coast of the North Island.

Bernard started with a good base. Formerly used for growing potatoes, his patch of land has good topsoil with pumice under that to a depth of approximately 80 centimetres, at which point it hits clay.

"So, because it is not completely free-draining, we mounded rows for planting and have taken a no-till approach so as not to destroy the structure of the soil."

It doesn't look like a typical New Zealand orchard. Bernard got to work just a month after taking over the property, setting up a nursery of potted banana plants to winter

outside, varieties including goldfinger, dwarf Cavendish, Ducasse, misi luki, Williams, blue java, Fiji, Cavendish and a few unknown varieties too.

Sandra and Bernard planted a cover crop to suppress weed growth, prepared the soil and provided mulch and, opting for a light – rather than dominant – shelter belt, used agroforestry principles in planting bana grass at the front and rear of the property, with tree lucerne at the sides.

By the time they were ready to plant in October 2021, they had sourced good numbers of complementary varieties, interspersing plantings of bananas with support and nutrient plants like comfrey, eucalyptus and red kakabeak, along with the subtropicals such as red pineapple, queen pineapple, white sapote, inga beans, mountain paw paw, tamarillo, cherimoya, macadamia, guevina (Chilean nut) and paraná nut.

And that's what led to the name of the orchard – "NūKa", short for "Nūhaka Subtropika."

"There is a lot of experimentation and we have the luxury of time to test things out," Bernard says. "For example, we used a mix of suckers and tissue culture for the bananas to find out what performs best in the Nūhaka region and climate."

> **"My decision to set up in Nūhaka was driven by the climate and my hope is that it can benefit the climate too**

Bernard has reached out to Plant & Food Research Limited – which has already supported Pic's Peanut Butter in trialling peanut growing in Northland – to discuss growing peanut plants and almond trees at Nūhaka.

"My decision to set up in Nūhaka was driven by the climate and my hope is that it can benefit the climate too," he says. "Many of the subtropicals we import are not grown ethically and arrive here through a lot of transport movements; so the more we can reduce that, the better.

"What we are dependent on though, is how people shop. Are they willing to select fruit that does not look perfect, or comes at a slightly higher cost if they know it comes from a good place?"

As for that all-important micro-climate, Bernard says that while it does get chilly in Nūhaka, frosts are extremely rare and he expects that to continue.

In terms of the potential for flooding, Wairoa has the option to open sandbanks at the junction of the river mouth and the sea, which, he says, takes the pressure off other waterways.

"Like everywhere else around the country, we did get hit by the tail ends of a couple of tropical cyclones that shredded the banana leaves, but the land drained better than many places and we dealt with the resulting slugs and snails by removing them manually," Bernard says.

While locals have reported changes in the last five years – from the reduction of frosts to practically zero, to an increase in rain events – he admits to being surprised to learn that very little drastic change was predicted to occur in his lifetime.

"We established ourselves at Nūhaka because it seemed to offer a bit of surety, but things can change, so whether that actually turns out to be true remains to be seen," he says.

As it stands, he has access to nearby weather stations to help monitor wind and rain and plans to install his own once the property has better quality internet service.

"So, our approach is to look at the science, respond to forecasts and do the best we can to give our plants a great start for the best possibility of success."

FEATURE ARTICLE

Geoff Peach closed Holyoak Orchard this June after 40 years of growing

New owners bring fresh energy to persimmon orchard while veteran grower exits

While two major persimmon growers in the Waikato have called it a day, another orchard is heading into its second season with a new generation of growers. GEOFF LEWIS reports.

Geoff Peach of Holyoak Orchard shut down his persimmon operation in June after nearly 40 years of growing.

Originally from a pastoral farming background, Geoff along with a group of enthusiastic young horticulturalists, answered the government's call to 'diversify' and entered the growing business in the early 1980s.

"When I came here, I didn't know what I was going to grow," Geoff says. "I looked for something not everyone else was into. With persimmons, it takes eight years to get the first crop and 13 years before you can get a return.

"There wasn't any knowledge around to begin with [about growing persimmons] and we worked closely with the MAF and [Crop & Food Research] Ruakura."

Geoff bought five hectares near Matangi, which, at its peak, had about 1600 trees producing more than 15,000 trays of persimmons for export in a good year.

Holyoak Orchard would usually complete ten rounds of picking to get the right colour in the fruit, and 80 percent of the crop was sold before it came off the trees. Exporter, Cape Produce took everything, Geoff says.

With airfreight costs rocketing from $1.20/kg to $5/kg, effectively cutting Geoff's income by one-third, the 74-year-old intends to sell the property and retire to Hamilton with his wife, Leigh.

"It has been lucrative and enjoyable and while Covid-19 has thrown a few curveballs, things will settle down again in the future."

Half the trees on the orchard will be removed but the covered rear 0.6-ha section of the property will remain in case the new owner decides to continue production.

While describing himself as a bit 'old school' with his own way of doing things, Geoff says he will remain available to anyone needing advice.

"The aim is if someone takes over, they can come to me for advice," he says. "They can take as much or as little as they like. Plenty of growers would like some help."

> **"The aim is if someone takes over, they can come to me for advice ... they can take as much or as little as they like**

Persimmon Industry Council manager, Ian Turk, says Geoff was the president of the Persimmon Growers Association for many years and a Waikato representative on the Persimmon Industry Council – remaining in that position until his retirement this year.

"He has a lifetime of skills and experience including developing exports to the exacting Japanese market," Ian says. "Geoff was always someone I could call for practical advice, even in the middle of packing when he was extremely busy. I will miss the many discussions we have had over growing persimmons and the state of the industry."

Persimmons are not a crop from which quick returns can be expected, Ian says, however, with about 30 export growers, mostly in the warmer parts of the country, a steady growth in production is expected in coming years.

Meanwhile, new growers have purchased Long Ridge Orchard, located almost directly across the Waikato River on Hakarimata Road.

Thomas and Becky Zhang immigrated to New Zealand in 2012 seeking a quiet life with less educational pressure on their children. Becky works as a translator for several government agencies in Auckland, including the Ministry of Business, Innovation and Employment, Ministry of Justice and Police, and Thomas has previous horticultural experience from a family vegetable growing operation in China.

The couple initially looked at purchasing a kiwifruit or avocado orchard.

Becky and Thomas at their persimmon growing operation, Long Ridge Orchard

"We looked around Tauranga and the Bay of Plenty and couldn't find anything suitable," says Becky. "Gold kiwifruit were too expensive, we couldn't afford to buy in. So, we looked further and found this property.

"Persimmons are very popular in China, although there they grow a different variety. The first time we tried New Zealand persimmons we found them [Fuyu variety] very tasty. Persimmons are also seen as a sign of good luck and good fortune in China. In Asia, if people have a yard, they'll grow a persimmon tree. They [persimmons] are also hung on strings until they're dried like raisins, which can be used in a persimmon cake."

Keen to learn, persimmons are a new industry for the Zhangs. The original owners, Phil and Ellie Lanigan, had started the orchard in the mid-1980s. Even after selling the orchard and retiring, they have continued as mentors to the Zhangs.

The four-hectare property has two hectares with 1500 persimmon trees that produce approximately 60 tonnes of fruit a year. That fruit goes to market through T&G, MG Marketing and FreshDirect – although Becky is perplexed as to why sweet and juicy persimmons aren't more popular with Kiwis.

Long Ridge produces early in the season and has been encouraged to market into the large Asian community in Auckland, Becky says.

"We hope to get more Kiwis to buy and become familiar with the fruit," she says. "I believe persimmons will have a larger market as more immigrants arrive."

PERSIMMON EXPORTS FOR THE 2020–21 YEAR

1400
tonnes or 370,000 trays

70%
going out through the Ports of Auckland

Exported to markets in:

Australia **Southeast Asia** **Hong Kong**

Efforts are underway to grow exports in the more difficult markets including China and the United States.

Jimmie Egan: Learning journey lands award

Rose Mannering

Horticentre Trust's Chris Herries (right) presents the award to Jimmie Egan

Hawke's Bay Horticulturalist of the Year Jimmie Egan believes this year's success represents a recognition of his 22-year journey in the fruit growing industry, which began fresh out of school.

Jimmie is the Apatu Farms pipfruit division manager, working for owners Mark and Paul Apatu.

"I left school early and went straight into the industry. You could say I grew up in it, I suppose," he reflects.

He began his orcharding journey working for Bryan Rich in Southland Road, where he remained for several years, devoting time to furthering his education.

"I took an orchard job to earn some money, then really started to see the benefits of an industry I have grown to love. From there I have clawed my way to where I sit today and it's humbling to get an award like this. I am very honoured."

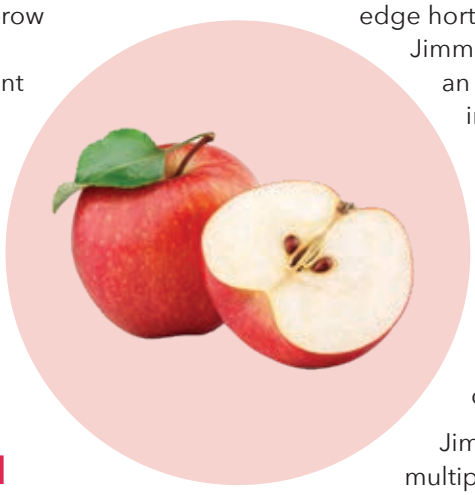
Jimmie remembers starting his time at Johnny Appleseed as an assistant manager under Dave Wright. He says the teaching and mentoring he was provided with aided his career ambitions and helped him fast track to orchard manager within the company.

In 2018, Jimmie moved to Apatu Farms where he had the opportunity to spearhead the greenfield development of an orchard using 2-D growing structures on the Heretaunga Plains. Land was converted from grapes and field crops like onions into the apple varieties Jugala, Rockit and Envy.

Jimmie Egan at Apatu Farms' Dartmoor Road orchard

Jimmie says the establishment of 2-D structures has been challenging but also rewarding. "It has been a thrill to eliminate the use of ladders on the orchard, with platforms used for picking."

The 2-D structures have also enabled a crop to be harvested in the second year. All orchards have been set up the same way to enable the use of platforms for pruning and harvest, as well as multi-row sprayers that can handle three rows at a time. Fertigation ensures targeted nutrient input, the picking platform reduces worker fatigue, and the sprayer reduces ground compaction with only one-third of the passes required in each block.



"I have clawed my way to where I sit today and it's humbling to get an award like this. I am very honoured

Jimmie and his team began observing, recording and measuring from day one. They have been developing a 'how to' manual on their 2-D system to ensure repeatability across each block.

Apatu Farms covers 135.5 hectares of land throughout Hawke's Bay employing 17 permanent staff and 102 seasonal staff each year. The company began in 1966 and the pipfruit division was developed in August 2018. A further 45 hectares will be developed over the next two years.

Horticulturalist of the Year contest judges Bruce Willis and Graeme Hodges noted that "the future of cutting-edge horticulture is in good hands with Jimmie. He and his team have developed an outstanding apple orchard, with impressive production and presentation of each site.

"Jimmie has an ongoing focus and passion for striving for excellence and challenging the norm to receive stronger results. He credits his success to surrounding himself with the right people, who enhance his skillset so he can reach his personal and career goals."

Jimmie manages the pipfruit business over multiple sites at Apatu Farms, at Puketapu, Meeanee, Korokipo and Karamu Road.

"We're using a different growing system compared to everyone else, starting from scratch and adapting 2-D plantings in Hawke's Bay. Undertaking this latest project has given me the opportunity to set goals and standards for an industry I love.

"Starting a new system with challenging varieties and really trying to put those all into one component has been taxing but very rewarding."

Jimmie says he's been fortunate to have inspirational people around him. He pays tribute to Apatu Farms general manager Tim Agnew and owners Mark and Paul Apatu.

> **"Jimmie has an ongoing focus and passion for striving for excellence and challenging the norm to receive stronger results**

"They've looked out for me and helped me grow as a leader. I'm grateful. Mark and Paul have also entrusted me with such a valuable asset."

The Horticulturalist of the Year contest is organised by the Hawke's Bay A&P Society and runs in conjunction with other primary industry awards, farmer, shepherd and farm forester of the year.

APATU FARMS OVERVIEW

135.5 hectares
of land throughout Hawke's Bay

45 hectares
will be further developed over the next two years

17
permanent staff employed

102
seasonal staff employed each year

The winning team, Carmel Ireland, Steph Wrathall and Paula Dudley

Major primary industries award recognises rapid response to feed the hungry and support growers during lockdown

United Fresh New Zealand Incorporated has been presented the Primary Industries NZ Summit Team Award for their work delivering 300,000 boxes of fresh fruit and vegetables to whānau during the Covid-19 lockdowns.

Supplied

The management team of five were responsible for the development of the *Fruit and Vegetable Box Project*, a clever adaptation of existing relationships and supply networks to address food shortages and provide an outlet for fresh produce that had been destined for restaurants, tourism outlets, cruise ships and airline catering.

United Fresh general manager, Paula Dudley, says the award is a recognition of the whole supply chain.

"We're absolutely thrilled with this award," Paula says.

"It's testament to the long-term relationships between United Fresh members and the professionalism of the food distribution centres that we worked alongside."

The *Fruit and Vegetable Box Project* was an adaptation of United Fresh's Ministry of Health-funded initiative, Fruit & Vegetables in Schools (FIS).

"Heading into lockdown, we knew that school closures meant the fruit and vegetables destined for FIS could not be delivered. This amounted to over 120,000 tamariki potentially

THE FRUIT AND VEGETABLE BOX PROJECT STATISTICS:

10 regions

25 food distribution centres

125 satellite organisations

294,000 boxes delivered in 2020

50,000 boxes delivered in 2021

missing out on vital nutrition every day," says Paula.

"With approval from the Ministry of Health to redirect existing funding, we presented a proposal to the Ministry for Primary Industries for further assistance and liaised with United Fresh member, Foodstuffs, to secure a donation of 700 boxes of fruit and vegetables.

"We then used our existing supply chain relationships to send over 10 tonnes of produce to foodbanks and City Missions throughout the lockdown periods."

United Fresh managed to get the *Fruit and Vegetable Box Project* up and running less than two weeks after the initial lockdown was announced and set in place quality control systems to manage the initiative as well as a suite of financial and reporting measures, all while negotiating the challenges of a team split into two bubbles for safety.

"We've set up projects of this size before, but not under such extreme circumstances," says Paula. "It's only the years of teamwork within our small group and alongside our members that enabled us to respond so quickly.

"The Primary Industries award consolidates United Fresh as the leading pan-produce industry organisation, with 30 years of experience all culminating in this project. It's a huge honour for our small team and we acknowledge the support of all our members who helped us to take care of our community."

FEATURE ARTICLE

Granny Smiths are one of the 11 varieties grown at CAJ Apples in Ettrick

Local workforce helps family apple business weather challenging times

Adaptability, innovation and a focus on community and worker wellbeing, has enabled large pipfruit operation, CAJ Apples, to move from strength to strength with the support of the local workforce, even in challenging times. AIMEE WILSON reports.

Driving south through the Teviot Valley and past Roxburgh in Central Otago, a distinctive CAJ Apples logo starts to pop up at several orchard entrances.

Eventually, a large packhouse appears at Ettrick – the literal engine room of CAJ Apples where 11 varieties of pipfruit are sorted and exported to over 60 countries worldwide.

CAJ Apples owner, Con van der Voort, has nurtured the family-built pipfruit business and has been orcharding for over 60 years. He knew very little about apples when he first started, and had a background in market gardening. Today, Con is considered a market leader in the New Zealand pipfruit industry. He remains heavily involved in the development and management of them all and drives around his orchards every day after morning tea in the packhouse.

But this season has been different. There are no backpackers – just plenty of hard-working staff of all ages, some of whom drive an hour to get there, thanks to the Seasonal Work Scheme that covers petrol and relocation costs for those who make a commitment to move into the area.

The scheme has been integral at employing and retaining a workforce in an industry that is usually reliant on young overseas travellers.

CAJ Apples rebranded with a new logo in 2019 and launched a hugely successful recruitment campaign shortly afterwards which involved reaching out to neighbouring communities to look for new, local staff.

Local newspapers, bulletins and even Facebook community pages were targeted. It wasn't long until new people started arriving from Alexandra, Tapanui, Clydevale, Lawrence and Glenore.

> **"We do a lot to bring our people together, which helps build a positive culture**

Daughter Jackie is the business's post-harvest manager and in charge of the packhouse. She says the huge investment in local staff has paid off, with better working conditions including working Monday to Friday from 8am to 5pm. She says the better work-life balance has been a big attraction and benefits everyone.

There are movie nights and quiz nights too, an apple bake-off, wearable hat day and cake day Fridays.

"We do a lot to bring our people together, which helps build a positive culture," Jackie says.

In 2016, the business decided on implementing a four-stage redevelopment of CAJ, starting with the upgrade of the staff amenities, extending the packhouse shed and upgrading all of the plant, equipment and infrastructure. The investment certainly looks like it has paid off with a well-engaged, supportive workforce that saw CAJ through the pandemic.

Pre-Covid-19, New Zealanders made up approximately five percent of the orchard's employee pool. That demographic has now completely changed, with New Zealanders constituting 100 percent of CAJ's workforce. The company employs approximately 90 staff, with 60 or more of those staff being placed on the packing line. While it hasn't been easy, being flexible and adaptable to people's needs has worked in the business's favour.

"This has created a different culture in the packhouse," Jackie says.

The last time CAJ Apples employed this many local staff was 30 years ago when the season coincided with pre-lamb shearing and the primary industries in the area were sharing workers.

Jackie says the old ways are coming back – orchardists are working collaboratively and sharing their staff now, with one van load of 12 experienced workers coming every day from the Clyde Orchards to help out.

Not only are there people aged over 60 on the packing line, they are also enjoying the work. Mechanisation in the packhouse has made the work less labour-intensive, more streamlined and eased the pressure.

"We've slowed down the process to speed up," Jackie says.

Covid-19 has obviously been challenging, with 55 staff off sick in one week, only 12 people on the packing line with no stackers, Con said. They also had to stop picking for two days to reduce pressure on coolstores and the packhouse.

> **"Not only are there people aged over 60 on the packing line, they are also enjoying the work**

Back in the control room at the centre of the packhouse, CAJ Apples employee Sally Mathieson is looking at a large

Control operator Thomas Graydon and defects tracker Sally Mathieson in the control room at CAJ Apples

screen to track apple defects, and control operator Thomas Graydon is waiting for the apples to drop.

Sally moved to Roxburgh from Australia with her husband two years ago and recently used her initiative to step up the ladder at CAJ. Having spent time on the line packing and learning everything about apples, quality and packhouse production, she now runs the defect sorter for CAJ.

Thomas is a young university graduate specialising in commerce who says he loves his new role. Down in the packaging area, Carl Burndred from the Bay of Plenty spends six months in the South Island – living in his motorhome and enjoying the work at CAJ as their packaging coordinator.

> **“This company is great to work for because it’s family-run, has a modern plant and the hours are great**

“I knew they were short on people,” Carl says. “This company is great to work for because it’s family-run, has a modern plant and the hours are great.”

The state-of-the-art CAJ packhouse operates for four to five months – February to end of July – and is designed to pack approximately 2500 TCEs (cartons) an hour.

Apples are ordered from the Turners and Growers coolstore, also based in Ettrick, where they are scanned into the system – having been picked and stored earlier in the season. There is an atmosphere of productivity and content workers as you walk into the packhouse, with conveyors operating left and right and a buzz of happy people all involved in their work.

Each apple is washed and sanitised by a new in-feed system by Dutch company Greefa, integrated with the CR Automation high-pressure apple wash system and brush bed.

The 14-Lane Greefa GeoSort machine has increased production by 60 percent since its arrival.

CAJ Apples has come a long way since Con and his wife Eileen purchased their first orchard, Nithdale, in 1960. Since Nithdale, Con went on to purchase five more orchards, developed several new orchards from scratch, rebuilt a burnt down packhouse in the year 2000 and most recently, acquired the Roxdale Cannery at Coal Creek, where all of the company’s apple wastage is processed. His industry knowledge and contributions have not gone unrecognised either, with the New Zealand award for Outstanding Contribution to the Pipfruit industry being presented to Con in 2019.

Under Con and Jackie’s direction, CAJ Apples has not only grown to manage 400-ha – 340-ha of which are apples – but built a reputable, intergenerational business that is valued and supported by a sustainable, local workforce.

"We've had at least 50% increase in fruit set"

Jared Tate, Jerry's Cherries

Using ReTain, especially on hard to set varieties, can dramatically increase yield in cherry orchards. A naturally occurring plant growth regulator, ReTain delays flower senescence to provide a better chance of pollination and fertilisation.

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Grow a better tomorrow

FEATURE ARTICLE

Dunstan Hills orchard manager, Tim Officer, pruning cherry trees near Alexandra, Central Otago

Unexpected, rewarding career for Central Otago fruit grower

A short-term plan to work on an orchard before embarking on an overseas experience (OE) led to an unexpected career in horticulture for Tim Officer. HELENA O'NEILL speaks to the 28-year-old on how he became an orchardist.

Set against the beautiful backdrop of Earnscleugh in Central Otago is a 200-hectare fruit orchard, Dunstan Hills. A short drive from Alexandra, the orchard produces cherries, apricots, nectarines and peaches.

For Tim Officer, a six-month stint as a seasonal worker before heading off overseas was just the beginning of a fulfilling career in horticulture.

"I started in the coolstore packing boxes, then I did a few months pruning before leaving for my OE," Tim says. "Then I came back as a cherry harvest supervisor in the field. It all started from there."

Tim started full-time at Dunstan Hills in December 2016. He was promoted to orchard manager earlier this year.

"I was always involved with growing the cherries. I was harvest manager for a while and in the background, I was the health and safety officer – I still am."

Before he joined the industry, Tim studied commerce at the University of Otago, planning to become an accountant.

"I wanted to be an accountant because I thought I was quite good at it in high school. Looking back at it, what I gained was more about life skills than anything else."

Horticulture as a career option never featured in Tim's plans.

"It didn't even cross my mind and I don't know how it didn't," he says. "I had a couple of friends tell me at high school that I should be studying horticulture. I had a massive vegetable garden at home, so I used to play around with that. Everyone thought I was crazy, studying accounting, and they were right.

"I came to Alexandra for six months to make some money as my siblings had worked for Dunstan Hills before me as seasonal workers, but I'm the one who hasn't left," he laughs.

Tim says he has learned a lot at Dunstan Hills, especially because he knew nothing about the industry before starting there.

"When I first started, I was at the ground level and I met a lot of people from around the world," he says. "The social aspect was really cool. But as I've progressed through it's the technical side that I like and the challenge that every season brings. There's something really satisfying seeing the whole process through from pruning in the winter to seeing cherries in a box.

"You can watch the fruit come to the packhouse and you can stand there and be proud of it. The job became a little bit harder but the harder it got, the more satisfying it got."

Studying for the New Zealand Certificate in Horticulture – Level 4 Fruit Production at Primary ITO while working helped reinforce his on-the-job knowledge and built confidence.

"It reinforces what you already know and it's good to have your name on the wall with something that backs up your knowledge. It's definitely helpful having a qualification backing you.

"There are a lot of opportunities in the industry, especially for young people. The amount of fruit that's being planted, there's always demand for young, capable people. In Central Otago there's a lot of cherries being planted."

Alongside developing important orcharding skills, Tim has developed better people skills and finds public speaking far easier. He also competed in the Central Otago Young Fruitgrower of the Year in 2019 and 2021, placing second and third, respectively. Tim says it's the opportunities that come from taking part in the competition that makes it all worthwhile.

"You realise you're not the only person in your mid-twenties doing this job," he says. "When I came second, I got to go to all the conferences where I met people from different industries. It's the networking and conferences after the competition which are the really good stuff."

Dunstan Hills has 40 hectares of cherries in production with another eight immature hectares, 25-ha of apricots, 2.5-ha nectarines, and one hectare of peaches.

> **"There's something really satisfying seeing the whole process through from pruning in the winter to seeing cherries in a box**

Each season provides its own challenges which keeps work varied, Tim says.

"The weather played ball in January, we had a really good February and March for apricots, nectarines and peaches. The weather was a bit dodgy to start with, but it came right. The crop size was solid, probably quite a good size crop for the staff that we had, being down about 50 people.

"The early cherry crop was a little bit rain-affected but as we moved through the summer it got better."

Orchard life provides enough challenges that Tim hopes to remain in the industry.

"I would like to have my own block of fruit, probably cherries because that's where my passion is. Cherries are harder to grow, but that's where the value is. It needs to be done right for the success of the company."

Kiritapu Allan with Bay of Plenty winner, Laura Schultz

Young Grower regional finals wrap up

All the Young Grower of the Year regional finals for 2022 have now been held so the next milestone is the national final, which will be held in Nelson on 21 and 22 September.

Meryn Whitehead, a supervisor at Vailima Orchard, took out the 2022 Nelson Young Grower of the Year title while Maninder Singh, who works for LeaderBrand, won the Gisborne Young Grower competition. A few days later, Laura Schultz from Trevelyans was named the Bay of Plenty Young Grower for 2022.

Horticulture New Zealand chief executive, Nadine Tunley, said the exceptional calibre of entrants seen year after year highlights the value of the Young Grower competitions.

"As the emerging leaders of our industry, it is invaluable to have an environment where young growers are supported to realise their full potential," said Nadine. "The Young Grower competitions provide personal and professional development opportunities, confidence building and

Maninder Singh, Gisborne winner, in action

Meryn Whitehead, Nelson winner, applying her expertise

the tools and networks for our young growers to forge a successful career path for themselves.

"It is clear from the talent on display today that the industry has a bright future."

Speaking from the Gisborne competition, NZ Apples & Pears chief executive, Terry Meikle echoed Nadine's sentiments. "The diversity of thought and talent on display has been amazing. It points to an incredibly positive future for growers across New Zealand."

In the Bay of Plenty, NZ Kiwifruit Growers Incorporated chief executive, Colin Bond said the competitions show appreciation for the need for skilled careers in the horticulture industry.

> **"The diversity of thought and talent on display has been amazing. It points to an incredibly positive future for growers across New Zealand**

"As a horticulture industry, we can often focus on knee-jerk reactions required for the current season. But in order to continue to produce effectively into the future, we need to ensure we have young people with the right commercial, technical and scientific skills." ●

The Young Grower of the Year national final takes place in Nelson on 21 and 22 September. Keep an eye on the **younggrower.co.nz** website for details.

Representing Whiritoa Orchards, supreme winner in the 2022 Bay of Plenty Ballance Farm Environment Awards, are from left: Shayne Joyce, business mentor; Ray Hiki, Whiritoa Orchards supervisor; Kiriwaitingi Rei, CEO of Māori Investments Ltd (MIL); Alex Wilson, director of MIL; Helen Scott, Whiritoa Orchards manager; and Rex Anderson, Whiritoa property manager

People at heart of award-winning orchard

Whiritoa Orchards at Te Teko has been named the 2022 Regional Supreme Winner in the Bay of Plenty Ballance Farm Environment Awards.

Elaine Fisher

The judges of the awards were impressed by the way in which traditional Māori knowledge provided a foundation to the team's approach to management of the Māori Investments Ltd (MIL) owned orchard.

The orchard, which featured in the July 2022 issue of *The Orchardist*, has experienced dramatically improved production and quality, while retaining a strong focus on creating long-term career pathways.

"People are at the heart of this operation, with a holistic approach to sustainability that means profitability is not compromised. There's meticulous attention to detail and careful thought on all management practices, with a generational lens," the judges' report said.

Whiritoa Orchards also won the Bayleys People in Primary Sector, Norwood Agri-Business Management and Zespri Kiwifruit Orchard awards.

WHIRITOA ORCHARDS

Focuses on a holistic approach to sustainability, founded in traditional Māori knowledge.

OCEANVIEW ORCHARD

8 hectares out of 30ha are planted in kiwifruit, sustainable in terms of both profit and environment.

PROJECT PARORE

Implemented catchment management plans and work to assess the health of the estuary and waterways.

Dell, Ross and Roger Bawden of Oceanview Orchard Limited won the Ballance Agri-Nutrients Soil Management Award.

Over the past 30 years, the Bawden family has turned an uneconomical Te Puke property into a thriving, profitable kiwifruit orchard.

Since buying the property, the family has explored forestry, sheep and cattle but all the while had dreams of growing kiwifruit. In 2003, after researching international food production trends, they made this dream a reality and planted their first four hectares of kiwifruit.

Oceanview Orchard is now a thriving a kiwifruit venture that is sustainable in terms of both profit and the environment. About eight hectares of the 30ha property is now in kiwifruit, taking up most of the flatland.

> **People are at the heart of this operation, with a holistic approach to sustainability that means profitability is not compromised**

Project Parore also wins

Conservation activities, supporting recreation and enhancing biodiversity, has earned the Uretara Estuary Managers Inc the inaugural New Zealand Landcare Trust Catchment Group Award for the Bay of Plenty region.

Known as Project Parore, their work focuses on all nine stream catchments that enter the northern Tauranga Harbour. Their biggest achievements include implementing catchment management plans and working to assess the health of the estuary and waterways. They have remediated fish passages, partnered with landowners to carry out extensive riparian planting, and helped develop wetlands.

The judges said they were an experienced team that is comfortable trying new approaches as they encourage land use change and good management practices. They have an integrated, community-led approach to sustainable land use and environmental protection.

FEATURE ARTICLE

Toby was named the Bostock NZ Organic Trainee of the Year in June

Toby Ploeg at work at Bostock NZ

Horticulture a varied and fulfilling industry

A desire to cut a lengthy commute in Auckland and to study something new led orchardist Toby Ploeg to relocate to the sunny Hawke's Bay. HELENA O'NEILL chats with Toby about his passion for the horticulture industry.

When Toby Ploeg, 26, talked his way into a job with Bostock New Zealand, he was full of enthusiasm but had no horticulture experience. Four years on and he's now a leading hand in Bostock's apple orchards – which encompass more than 700 hectares of BioGro certified land in the Hawke's Bay – and learning all he can about organic horticulture.

Before starting in horticulture, Toby worked as a hammer hand in the construction industry, then worked for a spouting business before becoming a diving instructor. He later worked in manufacturing.

"One day I fell off the scaffolding and thought 'I should be doing something different'," Toby says. "I called up the Dive HQ and did a year and a bit of full-time scuba diving. I became a diving instructor, teaching other people… it was awesome and I had so many cool experiences doing that. But the only real full-time work was if I moved overseas.

"I was always keen to go to Hawke's Bay and live there. So, I hounded Bostock heaps. I had a meeting with Andrew Culver, the manager, and got stuck into it."

Working in other jobs gave Toby the confidence to own his lack of horticulture experience and gave him a willingness to learn.

"I'm stoked to be coming into the industry and learning from the organic point of view," Toby says. "Soil structure is everything, soil health is everything, how you train your trees early on, how you do your prune, maintain a good soil biome and so on. There are more challenges too because you're organic."

In June, Toby was named the Bostock NZ Organic Trainee of the Year at the Hawke's Bay Fruitgrowers' Association Industry Awards.

"I didn't expect it, but it was nice to be recognised," he says. "In horticulture, it's a lot of hard work. I'm only speaking from an organic point of view, but you do work very long hours. If you don't have a goal that you're working towards then it could be quite easy to become demotivated in terms of the hours and how tiring it can be at times.

"In such a big industry, any recognition or anything that you can do to stand out does go a long way."

Toby says he loves the diversity of horticulture.

"There's so much variety and I love all the different characters and types of people there. I'm trying to get as much learning, as much experience as I can.

"Each day isn't wasted, each season I learn so much. Looking at where I was at this time last season, I see a huge improvement just from a technical knowledge point of view and a lot more confidence. It's not like I'm in a dead-end job where I'm just doing the same stuff just to pass the time.

"My work in manufacturing was very much just surviving each week, you get your weekend and then Monday starts, get the customers satisfied and just try to stay afloat and not get behind. Whereas within horticulture, you're growing trees on a much longer-term scale, there are so many different aspects to the job – technical, people, innovation, integrated pest management, lab and research work, operations, pastoral care of RSE (Recognised Seasonal Employer scheme) workers, marketing or sales."

Toby says one of the best things about the horticulture industry is the wide variety of jobs available.

"There are hundreds of different ways you can work in this industry, it is exciting. Every bit of knowledge I'm getting, I'm holding onto it.

Toby is working towards becoming a foreman in the near future, with the bigger goal of working as an assistant manager.

"My manager, Andrew, is awesome," Toby says. "He says to make sure that every day you're not just pruning, you're thinking, 'why are you doing this?' and you're trying to learn as much as you can.

"For any course we have, he's always gone above and beyond getting information for us and supporting us. It definitely sets a good team culture."

> **"There are hundreds of different ways you can work in this industry, it is exciting – every bit of knowledge I'm getting, I'm holding onto it**

Starting out in a new industry with no experience can be daunting, but in Toby's case it has been worth it.

"If it's a company and going in completely cold with no experience, I recommend doing what I did and calling up the Human Resources manager and asking who the best manager is and who has the best team culture. There are a lot of days when you're doing a lot of hard work, and having a good team culture makes it so much better.

"Having a good manager or people who want to see you succeed and improve, is super motivating."

For anyone considering a career in horticulture, Toby says to jump in and give it a go.

"Horticulture is what you make of it," he says. "If you want to join the industry and you're a thinker or get bored easily I would highly recommend studying as well. Everyone within the company has their own expertise. Once you get to know people, learn as much as you can and have a humble attitude too."

Toby says he has still has a lot to learn so asking experienced staff what they have done to get them to where they are today is a great way to learn from their experiences.

"In my case, it's [learning from experienced staff] been really beneficial." ●

Quality and food safety standards for the picking and packing of offshore fruit are aligned to New Zealand standards

A 'yes' vote could be worth $56 million to kiwifruit growers

Voting 'yes' to expand the Zespri Global Supply (ZGS) business could return up to NZ$56 million (18–22c/tray) in benefits to New Zealand growers by 2030.

Elaine Fisher

That's just one of the reasons New Zealand growers should give their approval to the Producer Vote to support expansion of the ZGS business, says Zespri chief global supply officer Alastair Hulbert.

Growers are asked to support the expansion of the current ZGS programme as part of the industry's ongoing efforts to establish 12-month supply of Zespri Kiwifruit, in a vote which opened on 28 July and closes at 5pm on 24 August 2022.

Zespri is seeking grower support for two proposed resolutions:

1. increase the planted hectares of Zespri SunGold Kiwifruit in overseas countries (excluding Chile and China) by up to 10,000 additional hectares
2. increase the planted hectares of any new kiwifruit variety in overseas countries (excluding Chile and China) by up to 1,000 additional hectares.

Alastair says the direct financial benefits to New Zealand growers will come from a saving of up to 16 cents a tray which doesn't have to be spent re-launching Zespri branded fruit each season.

If ZGS achieves the expansion strategy, it is also expected to save New Zealand growers an additional 6c per tray on overhead costs in 2030. In the 2021–22 financial year, ZGS contributed NZ$27 million to Zespri's corporate profit.

Growing Zespri branded kiwifruit in the Northern Hemisphere (Japan, Korea, France, Italy and Greece) not only ensures Zespri fruit is on the shelves year-round, but also provides other benefits which are hard to quantify in dollar terms, says Alastair.

"By growing in both hemispheres, we have the ability to carry out research 12 months of the year, increasing the speed of that research by 100 percent."

Closely monitoring what is happening around biosecurity threats also helps New Zealand prepare for what may arrive on our shores. "Currently the brown marmorated stink bug is a big issue offshore and while we hope it never arrives here, we are learning how to deal with it in Italy."

> "If ZGS achieves the expansion strategy, it is also expected to save New Zealand growers an additional 6c per tray on overhead costs in 2030

Alastair notes that Zespri's partnership with growers in overseas markets is also beneficial from a trade perspective. He says it is likely that Zespri's production presence in Europe played a role in securing elimination of the 8.8 percent tariff paid on New Zealand kiwifruit exports to Europe in the recent NZ-EU Free Trade Agreement negotiations.

The fact that Zespri works with Korean growers was, in 2015, a key factor in the removal of the tariff on New Zealand kiwifruit imports – a benefit worth NZ$20 million a year to growers at the time, and particularly important as Chilean fruit was already benefiting from a reduced tariff.

However, Alastair acknowledges New Zealand growers have legitimate concerns around risks to the brand reputation. "Quality and food safety standards for the picking and packing of offshore fruit are aligned to New Zealand standards. It must meet all the grade standards including for taste, with all the checks and balances in place to mitigate risks to the brand."

New Zealand fruit comes first

Another concern which has come through questions from growers in the last few months is how the crossover between the Northern Hemisphere and Southern Hemisphere fruit is managed.

The underlying principle, says Alastair, is that New Zealand fruit always comes first, with New Zealand fruit accounting for two-thirds of the supply, and offshore fruit making up the remaining one-third. "There is an overlap with the end of the New Zealand season in October and November, and the start of ZGS fruit being harvested from September to October.

"The Northern Hemisphere fruit is held in coolstore until New Zealand fruit is sold, and is brought in as needed to fill the shelves. The aim is always to keep consumer demand ahead of supply."

The proposal to plant a total of 11,000 additional hectares of Zespri kiwifruit offshore is strongly supported by prominent growers and industry leaders including Craig Thompson and Peter McBride, both also members of the ZGS Advisory Board.

Craig Thompson has been involved in the New Zealand kiwifruit industry's 12-month supply programme since it was first mooted. From 2001 to 2004 he was based in Italy helping kiwifruit growers plant the then new gold variety Hort16A. In 2016 he returned as Zespri's head of operations for Europe.

"In my view there is more risk in not increasing hectares grown offshore, than in increasing plantings. If we are not filling the shelves for 12 months of the year, then our competitors will do so."

Craig says New Zealand growers have benefited significantly in the two decades since growing

Zespri branded fruit offshore to supply markets 12 months of the year began, and what they are being asked to approve now is a continuation of that programme.

It's a programme which has generated loyalty and trust from offshore partners, in particular in Italy where the four initial partners from 2002 are still involved in growing and post-harvest partnerships, and are keen to further expand their operations.

However, Northern Hemisphere growers face tougher climatic and growing conditions than in New Zealand and on average, their per hectare production is lower. That, coupled with significant increase in demand for Zespri SunGold Kiwifruit, means it is essential to increase plantings to achieve 12 months' supply, he says.

There are benefits too for the public opinion of Zespri Kiwifruit. "From the consumer perspective, through 12 months' supply we can demonstrate a sustainable supply chain which provides fruit grown close to the markets for several months of the year."

Global unrest makes it the right time to plan ahead

The world economy is in turmoil with the Covid-19 pandemic, the war in Ukraine, labour shortages and disruption to shipping and transport, but Craig says now is the right time to prepare for the future. "We are not talking growth for growth's sake but a way to continue to add value."

Peter McBride agrees that despite the current state of the world economy and geo-political unrest, now is the right time to plan ahead.

"From a strategic governance perspective optimism is the best approach, not a 'the world is going to end' approach. The Italians are prepared to say they want to grow, invest and partner with us and they would be the first ones to say stop if they didn't have confidence. They have a good barometer on the market."

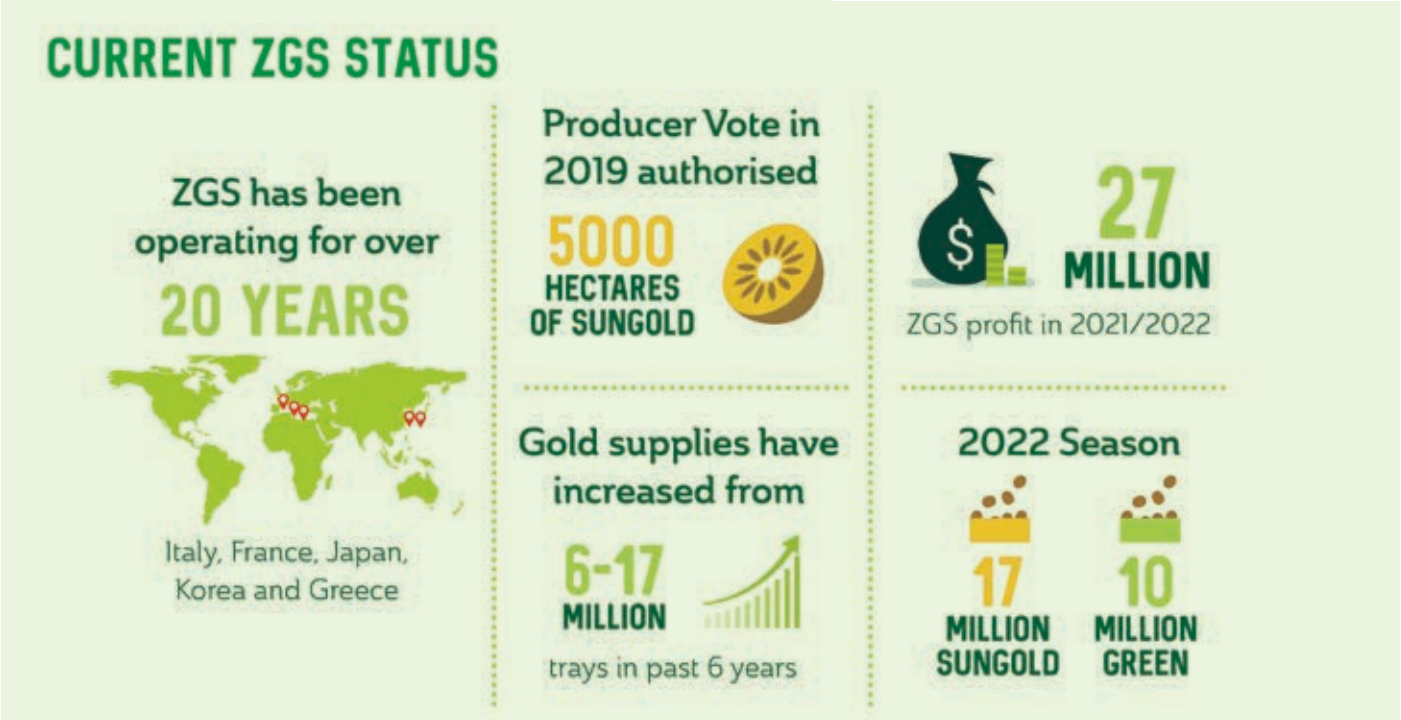
Peter says in fact the Producer Vote is as much about Zespri's offshore partners as New Zealand growers. "Are we, Zespri and the New Zealand kiwifruit industry, good partners with these people? "Essentially the New Zealand industry is making a decision about how much it values the relationships with Italian, French, Korean, Japanese and Greek partners.

> "The biggest risk to our growers is by being conservative and squandering an opportunity. It must be remembered that the clock is ticking on the Plant Variety Right (PVR) for SunGold Kiwifruit

"What we have seen in the last three to four years in particular, is the level of trust growing all the time among our partners. They really want to be part of us."

Demand for Zespri branded kiwifruit, especially SunGold Kiwifruit, continues to increase, but Peter says ZGS has not been able to grow the volumes of fruit offshore it had anticipated.

"We have fallen short of the targets we set for a number of reasons including the impacts of the vine



diseases Psa and vine decline syndrome, and the continental climate which delivers big events like frost and hail."

Peter says Zespri is getting even better at forecasting demand. "I have more confidence in its ability to do that than I have ever had."

That forecasting clearly demonstrates the need to increase hectares planted offshore, but there are checks and balances in place with the Zespri board able to reduce or even stop annual plantings if it sees the need.

"The biggest risk to our growers is by being conservative and squandering an opportunity. It must be remembered that the clock is ticking on the Plant Variety Right (PVR) for SunGold Kiwifruit."

Supporting the Producer Vote is, says Peter, absolutely the right thing to do. "It's a no brainer." ●

Further information on the Producer Vote to support expansion of the ZGS business and videos of offshore partners can be found at: **zespriproducervote.zespri.com**

TECHNICAL

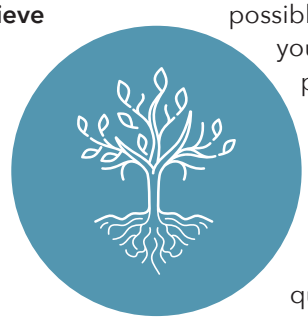
THE LATEST INNOVATIONS AND IMPROVEMENTS

Orchard development success for long-term gain

Aiding a successful future

Meg Becker : AgFirst Consultants Hawke's Bay

Achieving a high cumulative yield and managing canopy variability is the key to orchard success. To achieve this, blocks need to be developed correctly to give them the best possible start, streamline the management process and perform in the upper quartile.



Multiple factors contribute to successful development including but not limited to:

- Site selection
- Block history
- Land preparation including working, levelling & fumigation
- Drainage
- Soil type and topography
- Climatic factors etc.
- Tree availability
- Timing of planting
- Canopy structure selection.

When developing a successful new canopy it is essential to:

- Carefully select rootstock and variety
- Create good long-lasting relationships with your nursery
- Visit your trees in the nursery
- Grade your trees in the coolstore – understand the product you will be working with
- Re-grade your trees in the field and plant according to land topography and soil type
- Follow best practice guidelines to kickstart your canopy.

Planting the higher-grade trees in your weaker soils and the low-grade, poorly feathered trees in your more fertile soils will aid in creating consistency across your canopy growth and managing vigour as the trees move into production.

Reducing variation through your block streamlines task management in your orchards and improves fruit quality in the long run.

One major contributing factor is the type of tree sourced to develop your block and how well matched it is to the scenario you are working with. Each 'tree option' has its benefits in different planting scenarios, making this decision a key factor that will significantly impact financials at the bottom line.

Selecting from the nursery a tree type that caters to your labour availability, skill sets and climatic conditions whilst allowing you to set your development up with the best possible start is paramount. Once you have made your tree selection, plan how will you ensure best practice methods are used, from the time the trees leave the nursery gate until planting in the block.

Good preparation in the development phase sets your block up for a consistent future with high cumulative yields. So the big question: what type of tree is going to set your system up for a successful future?

Bare root trees

Coolstore best practice

The trees should arrive from the nursery in appropriate packaging for long-term storage, to help retain moisture around the root zones.

It is essential to identify any variability in the coolstore, if planning to store the dormant trees for any length of time. Monitoring trees in storage gives growers confidence that the root zones of the trees remain moist, and the store's temperature and humidity are at the appropriate levels to protect the fine root hairs. Monitoring helps managers make decisions regarding misting frequency to prevent roots from drying out.

The store should be kept at low temperatures, with high humidity, to ensure the trees remain dormant. This temperature may need adjusting depending on the length of time the trees are in the store (longer storage requires cooler temperatures).

The storage room should not be shared with any fruit, as the ethylene produced by fruit maturation can have a negative impact on the trees.

***Figure** 1 Nursery trees packaged on pallets en route to the customer (photograph provided by Waimea Nurseries)*

***Figure** 2 Scion rooting expressed in a mature canopy*

***Figure** 3 Bench grafts in the field nursery (photograph provided by Waimea Nurseries)*

Planting best practice

The root systems on bare root trees will have been kept moist throughout storage. Before planting, the roots should be rehydrated. This process can be as simple as placing the roots in a drain overnight.

Trees stored at the orchard must be kept moist. This may be made necessary due to delayed planting (most commonly due to weather conditions). This is best done by laying the root zones in beds of damp sawdust, ensuring the sawdust is consolidated around the root zone – not compacted. Caution should be taken if storing trees in beds of moist soil. If left in the soil bed for any length of time, the roots can begin to 'heal in', exposing the tree to the risk of root hair damage at lifting.

Planting depth and orientation influence the long-term success of your block.

The following must be considered when determining optimum planting depth and orientation:

- The length of your rootstock and height of the union/graft
- The direction of the prevailing wind
- The size of the hole & consistency of the soil (root-to-soil contact).

Trees often sink as the ground settles post-planting, so this should be taken into account when considering planting depth. If the tree is planted too deep, the scion will root causing the tree's characteristics to throw towards the scion rather than the rootstock. This is a common issue in orchard systems and expresses as an excessive vigour response in the tree.

The height of the scion union differs depending on where the tree has been bench/bud grafted.

Once the trees leave the nursery, the sooner they are placed in the ground and have irrigation installed, the better opportunity they are given for a successful growing season. Detailed planning is the secret to achieving this. Planting late can hinder canopy growth potential, which ultimately impacts cumulative yield.

Polling low-grade trees (de-feathering to long stubs) at planting, alters the root-to-leaf ratio, allowing the roots to drive the tree's growth. Ideally, nicely textured lateral branches on large high-grade trees are usually trained to suit the canopy structure and frame the tree.

Following a young tree nutrient programme, appropriately matched to your block's recent soil tests will also help kick-start your canopy.

Single stem

Rod (Bench Graft)

The bench grafting process is the grafting of the desired scion wood onto a rootstock while the tree is in a dormant state. The rootstock is harvested from the nursery stool bed and paired with a scion of a similar width. The graft is made using a whip and tongue technique as this has a larger surface area of cambium contact. This is usually carried out in late winter or early spring. The graft is then allowed to callus in the high-humidity coolstore environment. This process can take up to two weeks.

The bench graft can then be planted back out into the field nursery for another year of care, or sold directly to the grower as a 'Start'. A Start may also be made using a dormant bud grafted onto a rootstock. It is then sold directly to the grower after the bud has callused.

Where the nursery keeps the bench grafts for another growing season, they are then sold as a bare-rooted rod (sometimes with feathers or lateral growth). Bench grafts grown for another year in the nursery provide growers with a product that can be graded according to its growth characteristics before planting.

Budded tree

A two-year budded tree is made by harvesting the dormant rootstock from the stool bed and planting it out in a field nursery. In February or March, the rootstock is grafted with a bud, which is grown on until the following winter when it is lifted to go to the grower as a Start (dormant bud), or it may be left for another season and sold as a budded tree.

Producing a budded tree is a two-year process and often results in a high-grade tree with lateral branches. The two-year budded tree option is more likely to have developed lateral branches in the nursery. Providing the laterals are positioned appropriately this is advantageous for growing systems such as 2D, where the lateral wood grown in the nursery can be used to fill horizontal wire structures.

The tree's ability to feather varies depending on the rootstock and the variety the grower has ordered.

Twin stem

Nurseries offer a twin stem bare root tree, ideal for use in twin stem spindle, V-trellis, Future Orchard Production Systems (FOPS), and any other multileader derivative growing system.

Twin stems are bare-rooted trees with two leaders (or cordons). The nurseries grow these by de-heading a one-year rod and producing two even leaders. Nurseries cannot always guarantee twin stems to growers due to the variables involved in producing them, and the length of time they must be in the nursery in order to grow the two leaders.

The ideal twin-stem has two even cordons, no less than 1/3 difference in cross-sectional area. If the difference between the cordons is too extreme, it is advisable to cut the twin stem back at planting and regrow two even leaders. This helps reduce long-term block variability, providing correct management practices are followed to regrow the leaders evenly.

Nurseries complete orders en masse, which means there is a set way the twin stems are grown. Growers are best to produce their own twin stem tree from a single rod, Ellepot, or Start if they are wanting their twin stem cordons to divide at a specific height, or if their canopy structure requires a unique cordon angle.

If the entire block cannot be developed with the same tree type (e.g. you have a mix of twin stem and single rod trees) the different tree types should be separated and planted in their own micro blocks. This helps with the long-term management of block variability.

Starts

From the point at which Starts are ordered, there is a remarkably quick turn-around. Once the rootstocks can be lifted from their stool bed, the process of grafting the Start and delivering it to the orchard gate can take as little as three months.

Growers may purchase the Starts and run them in a field nursery for another growing season. They can then be lifted as bare root trees and transplanted into a commercial orchard. To aid in the future block variability management, like any bare root tree, they should be graded and planted according to their characteristics. Experience with

***Figure** 4 Bud Start planted in winter 2021 (photographed July 2022)*

***Figure** 5 Ellepot planted summer 2022 (photographed July 2022)*

***Figure** 6 Ellepot straight out of the nursery (photograph provided by Waimea Nurseries)*

transplanting bare wood fruit trees is required to prevent plant damage.

Alternatively, growers may plant the Start straight into the commercial orchard setting. This is a successful method of developing high-density plantings (such as 5,000 trees/ha) or systems that require unique tree training to achieve the desired canopy structure (e.g. a specific cordon angle or a leader with laterals at a specific height).

The smaller rod gives the grower more control over the early development of the tree, including where it begins to throw lateral branches and how quickly growth is driven over the lower sections of the canopy.

> “
> **The key to a successful development is good planning**

Planting straight into a commercial setting could increase the risk of canopy variability. Starts can also be more susceptible to tree loss than a bare root tree and this can be harder to manage in low-density plantings over a large hectarage.

Regardless of whether the Start is planted in a field nursery or a commercial setting, the manager must have the experience and knowledge to carry out nursery tree care for the first-year post-planting.

There is a specific level of expertise required to manage Start trees successfully. Starts are a year younger than a standard bare root tree, which is a key factor that should drive your canopy growth and first production targets.

Ellepots

Like Starts, Ellepots have a quick turnaround from ordering to arrival at the orchard gate, due to the small amount of time required in the nursery.

Ellepots are grown in a covered nursery environment and are sold to the grower in a vegetative state, making them suitable for planting right through the growing season.

The trees arrive from the nursery as featherless rods in small pots made of a paper membrane material, about 180mm by 100mm in size.

The membrane design allows root hairs to penetrate through the media and out into the air.

On breaking through the potting membrane, the roots are air pruned, promoting healthy root hair development back towards the base of the plant. A large mass of fine roots develops in the media and due to the way they are formed, they do not bind.

This design minimises root disturbance and transplant shock.

The most efficient method of planting Ellepots is to auger the holes directly ahead of the planting process using GPS (geographical positioning systems). After ensuring the media inside the Ellepots are moist, they should be placed in a freshly dug hole. The planting depth is easy to determine, as the soil surface should be in line with the top of the pot as the hole is filled back in.

After planting, the root hairs penetrate through the Ellepot membrane and as they make contact with soil, they no longer air prune, allowing the large root mass that has developed to thrive.

The ability to plant Ellepots during the growing season provides advantages such as:

- Optimum ground conditions
- Labour availability – targeting the 'summer lull' between thinning and harvest
- Lower demand on contractors (fumigation, drainage, irrigation, posting and planting).

These are three of the key challenges that can delay the planting process of bare root trees, which is often to the detriment of the first season's growth.

The traditional bare root planting season between the months of late June to late August tends to offer periods of wet ground conditions. This brings yearly challenges, as growers delay planting to wait for the soil profile to dry out. Planting in the summer months reduces the risk of delays due to undesirable ground conditions.

With the extensive expansions in the pipfruit growing regions, contractors can be booked out months in advance with relatively full books over the planting season. The pipfruit industry has a lower demand for planting contractors in the summer months, making it easier to meet tight planting deadlines and preparation for each aspect of the development in a timely fashion. The extended planting season is advantageous for large developers as this allows them to spread their resources.

It is paramount the root zones are kept moist before and post-planting. It is important there is a water source available to dampen the potting media before planting, and irrigation must be available immediately after planting.

The higher the evapotranspiration rates, the more time-critical the instalment of the irrigation system is. The target application area must be directed onto the root zones of the Ellepots.

It is important to remember that the irrigation requirements for vegetative plants are different to bare root trees planted in the winter. Not only is evapotranspiration greater during the growing season, but bare root trees have a greater margin for error as they have dormant reserves stored in the plant to bide them over and prevent extreme dehydration.

Ellepots have similar risks and benefits to those mentioned for Starts planted in a commercial orchard development.

Although used extensively overseas in both perennial fruit crops and forestry developments, Ellepots are still in the trial phase in New Zealand.

At this stage, growers are seeing Ellepots as a great alternative for tree replacement and for developments that require a quick turn-around from ordering to delivery. The extended planting season allows growers to use seasonal labour troughs to develop their orchards, rather than over the winter months when there is a push to complete other time-critical tasks.

With plant production automation and an indoor growing environment, Ellepot systems will allow trees to be produced in a more cost-effective and environmentally sustainable way, compared to field tree production. Ellepot systems will also allow the use of rootstocks grown by tissue culture, like Geneva® 41.

The key to a successful development is good planning, making sure every step of the puzzle is completed to the highest standards, managing variability, and keeping the project on track.

Making decisions that account for every block variable is challenging, but proves successful time and time again through consistent, high producing mature blocks. ●

Thank you to Kate Marshall from Waimea nurseries for discussing some of the options available in New Zealand nurseries and the best scenarios in which they can be used to optimise canopies during the development phase and beyond.

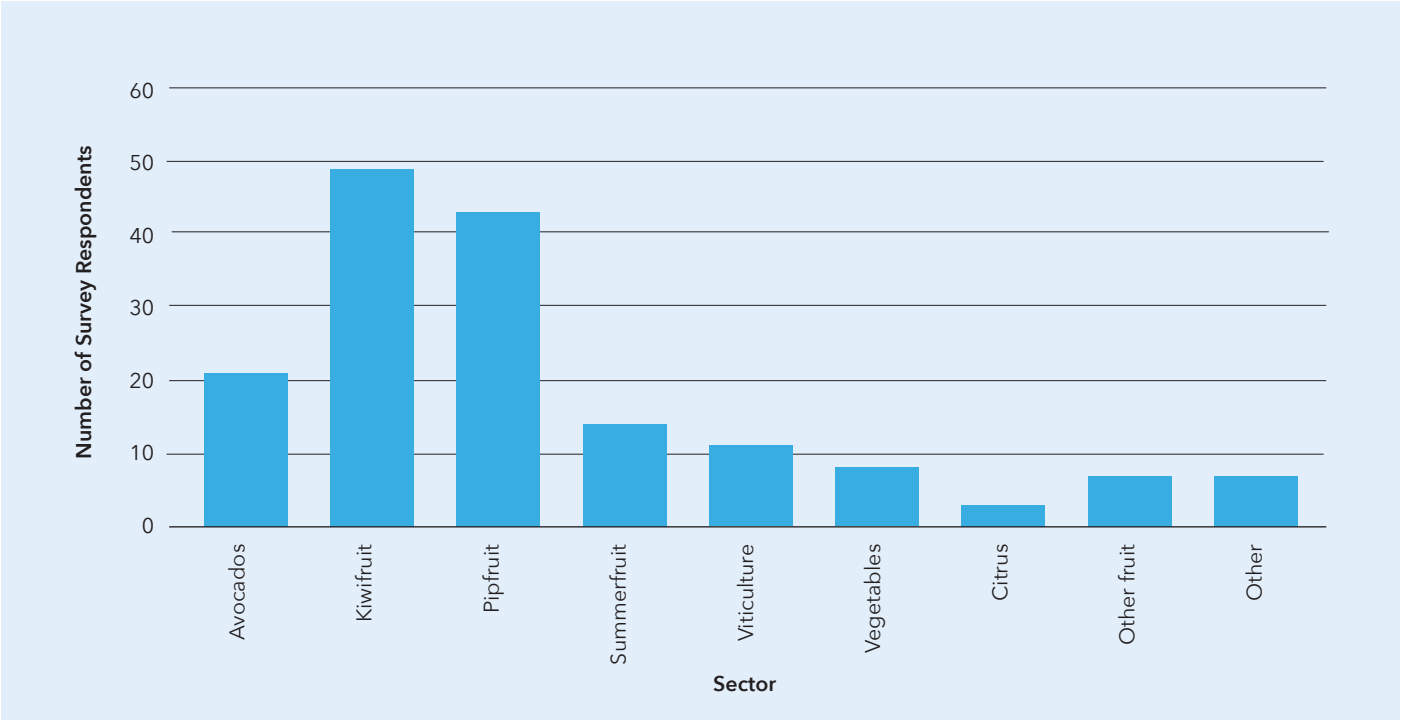


Figure 1 *Survey respondents by crop type*

Succession in horticulture: Passing the baton

Passing the baton from one generation to the next is a reality the majority of horticultural landowners will be forced to consider at some point in their career.

Sophie Twigley : Horticultural consultant, Fruition Horticulture (BOP) Ltd

With increasing land prices, capital outlay and regulation within the industry, these succession plans are escalating in complexity.

In early 2021, Fruition Horticulture (BOP) Ltd was funded by the Ministry for Primary Industries (MPI) to undertake research to help determine the main barriers to entering and exiting the horticulture industry, as well as ways to reduce such barriers.

Method

The research project sourced information from several focus groups and an online survey. Participants ranged from those with decades of experience and ownership history to those new to the industry. One focus group was targeted for insights on Māori land ownership and the other group was targeted for insights from rural professionals. A range of industry groups were included, with emphasis on the kiwifruit, avocado, pipfruit and vegetable groups and others (see Figure 1 above).

Entrance into the industry

One dominant conclusion drawn across every sector was that entrance into ownership is difficult. Growers indicated that the two largest barriers were initial capital costs and the inability to borrow money. Increasing land values, licence prices to lack of access to the more profitable protected plant varieties, costs of development and lack of bank borrowing power all contributed to making ownership a difficult prospect for many young people and for Māori to develop their land holdings.

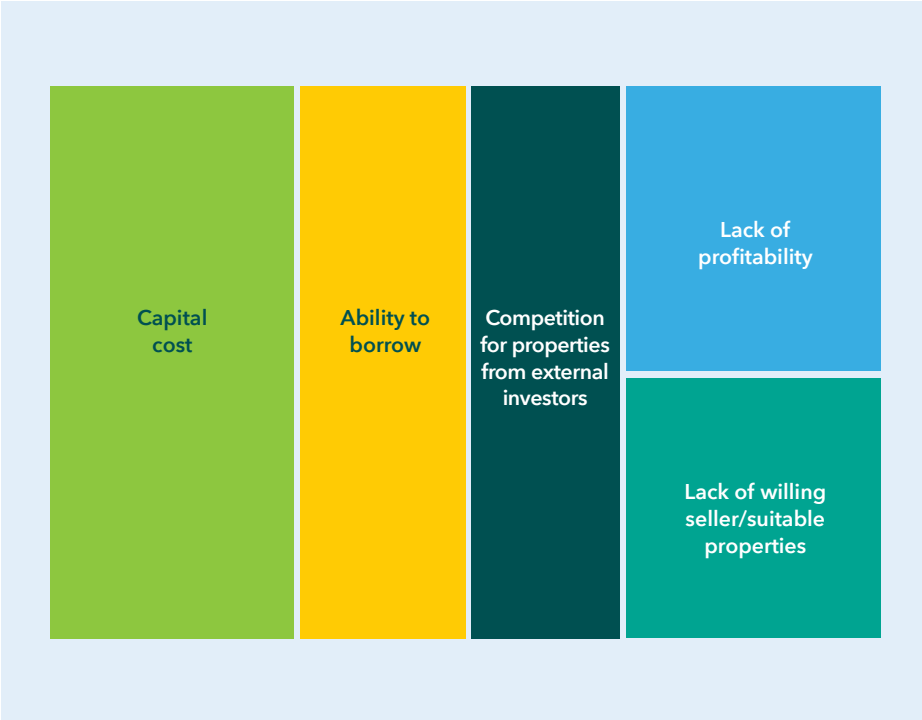


Figure 2 *Biggest perceived barriers to entry into horticulture (sample size: 167). Larger sized blocks indicate a more significant barrier*

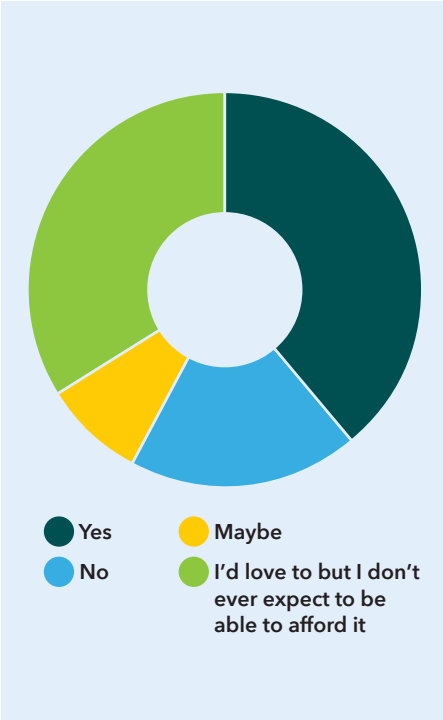


Figure 3 *Current non-owners desiring to gain ownership in horticulture (sample size: 140)*

Māori landowners, while often having a significant asset base in terms of land ownership, still found that a key barrier to entrance into horticulture was also the capital cost of land development.

Financial mechanisms for entry varied between groups. Investment vehicles were seen as an enabling structure for those looking to enter kiwifruit ownership, with as little as $50,000 buying a pathway into passive part ownership. Outright buying of an orchard was a common entry mechanism for avocados, due to the smaller size of many orchards which tend to be on lifestyle blocks, accompanied by a high standard of dwelling which can be an added attraction for buyers. Leasing was a more common system in pipfruit.

The vegetable sector faced the double jeopardy of low profitability and increasing regulation of growing practices, making viable sales of the business difficult. This also makes preserving the land for vegetable production extremely difficult if the business is sold. Focus groups also highlighted the lack of entry due to these reasons, stating that ownership of vegetable growing operations was almost always being passed down through families. Those exiting the industry were more likely to sell their land for non-productive purposes, for example to developers for residential housing.

Some participants stated that without their parents and the use of intergenerational succession, they would not be in an ownership position in the industry. It was agreed that those without this pathway were on the backfoot, not only in terms of financial viability, but in terms of the ability to obtain opportunities to buy properties. Many of those working within the industry stated that despite their desire for future ownership they don't ever expect to be able to afford it (see Figure 3).

The most common forms of exit were identified as selling to a grower already in the industry, or a corporate business or company already in the industry. This once again signified that it becomes more difficult for prospective buyers to make their first move into horticultural land ownership.

Whenua Māori Trusts were further limited by their trustee agreement and limited knowledge about how to effectively enter the horticulture industry. Māori land had a larger incidence of the use of a 'development lease', in which after a period, the then-developed land will revert to the original owners, with the gain of now developed land. This is suited to the 'long game' strategies of many Whenua Māori Trusts.

Another barrier that was highlighted throughout the research was the perception of the profitability and attractiveness of horticulture as a career. Growing food has increased in complexity and cost over time and it can be difficult to attract new talented entrants into the industry. This was especially an entrance barrier within family succession. For example, the experience of seeing hail wipe out apple crops overnight had put off a younger family member from investing into the business. A high level of regulation and compliance has reduced the attractiveness for some among the incoming generations too.

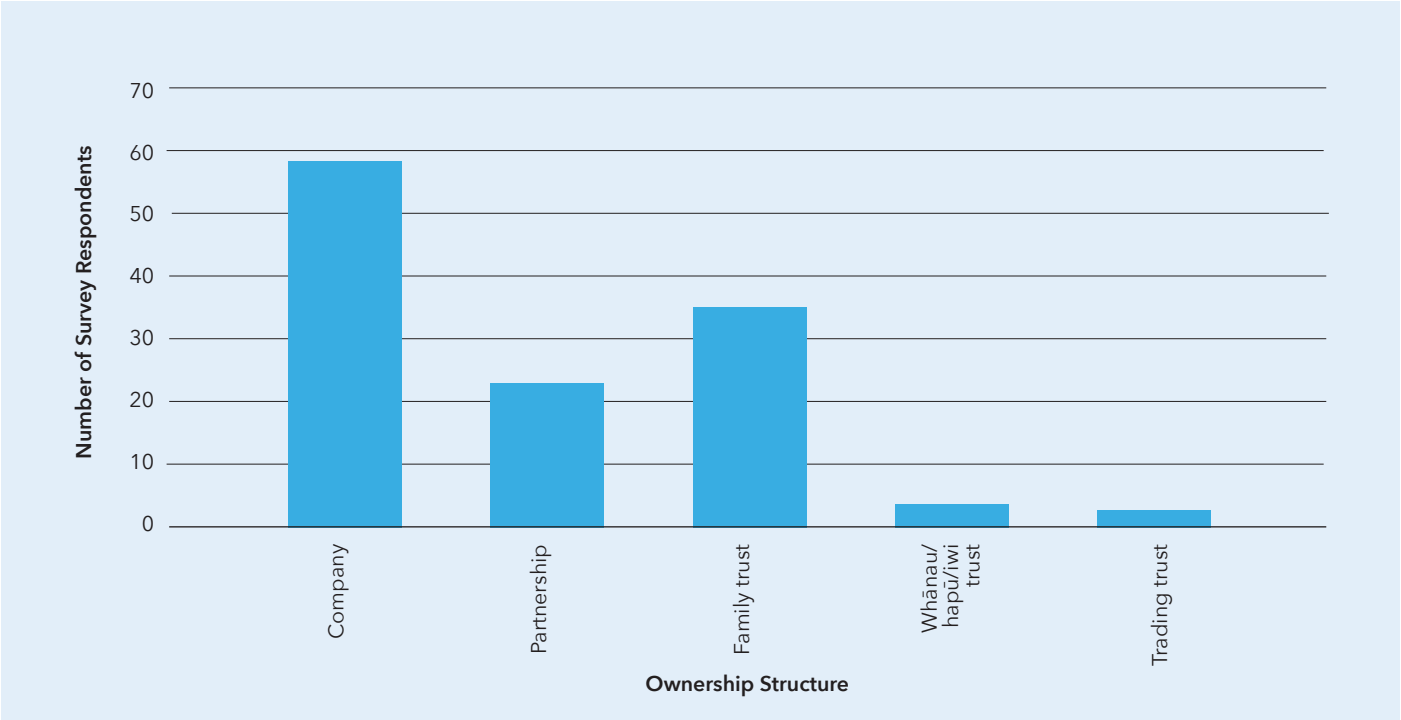


Figure 4 *Ownership structures of survey respondents*

Exit from the industry

In an industry experiencing its heyday, there is a buoyancy in the sale prospects of those looking to exit. Over 96 percent of all current owners trusted they would be able to find a willing buyer for their horticultural entity if they were not focusing on family succession. Concerns were also raised about the increasing amount of corporate participation in the industry, reducing purchase ability for keen individuals interested in growing.

One barrier to exit by succession was the competition for conversion of land for urban uses. This was an issue for vegetable growers in particular, who centered around major townships, with buyers more likely to purchase the land for housing developments rather than to carry on producing food.

Being of sufficient scale was a large barrier to family succession, due to the need to split the overall ownership of land. One participant rightly stated, "It's not just about succession – it's also about estate planning. You have to look after the present and past generation as much as the future generation. You can't sacrifice one over the other." This was a barrier to those with lack of scale or profitability, common in systems such as avocados and vegetables. Making sure that those leaving the business were well looked after, without incurring a burden of debt and workload on the incoming generation was often difficult to navigate.

The concept of fairness was a common theme and important for most families considering succession. It was noted that fairness did not necessarily mean equal treatment, but rather equitable treatment. Juggling what is best for the financial state of the business and still being able to sit down and have a family meal at the end of it was a large factor for many family succession decisions too. Many fears within family succession highlighted the need for fairness and the value in an extended timeframe for passing the business over.

The mechanisms for introducing the next generation into ownership of horticultural land were varied, with a mixture of trusts, companies and sometimes leases used to transfer ownership stakes between generations. The most effective use of transfer varied greatly depending on the family dynamics and goals of the business for the future. The most common structures used are shown in Figure 4, indicating that the use of companies and family trust structures are common.

In some cases, commonly in the kiwifruit industry, small ownership stakes may be offered through employment agreements, allowing young people employed in the industry to gain ownership. This was referred to by one interviewee as "the golden handcuffs," with the small ownership stake commonly tied to the need for that key staff member to remain in the company.

A staggered exit is also now a viable option for the industries able to use high quality management companies to operate the property. This is especially a widely used option in kiwifruit orchards, allowing people to remain in ownership far past the days of running the orchard themselves. This, however, causes further issues for those looking to enter active ownership of an orchard.

Only 15 percent of participants owning horticultural land listed family as a likely willing buyer for their property. Many stated that in successful family businesses, inheritance is only effective if the incoming generation is interested. Participants agreed that the horticulture industry is hard going, with combating mother nature and increasing regulations meaning both the financials of the business and those in ownership need to be able to withstand difficult seasons.

Future opportunities for succession

It was highlighted that good family succession needs clear, early and effective communication. Getting ideas and thoughts from all generations out on the table early is a critical part of reducing unexpected road bumps. In admitting that it can be a difficult subject to talk about, many highlighted the importance of using an external third party to help navigate this process, with professional advice guiding the conversation. Sitting down and getting out in the open and on paper what the plan is for your family reduces the likelihood of unexpected turbulence.

Attracting new entrants into the industry and facilitating their career progression is an important part of entry into the industry. This is where there was a contrast and overlap between succession barriers, the exiting group wanting to pass land onto other passionate growers and an incoming generation too hindered by the current land prices, having to compete with corporates to have an opportunity to buy in.

Bringing these people together could facilitate a successful transition in and out of the industry for both parties and could also help to aid young, energetic talent into ownership in the industry.

Increasing the awareness of suitable models and benefits from a successful succession transition to growers is also important. Decisions on when to transition, which financial mechanisms to use, and whether to use succession coaches, or other rural professionals, can be difficult.

There is no one-size-fits-all approach that is available for the complex process of succession, therefore a range of models need to be presented to people to enable them to make the best decision early.

To read the full report, visit the MPI website: **www.mpi.govt.nz/dmsdocument/48640-Horticulture-sector-entry-and-exit-pathways**

A stormy winter and big shifts in weather patterns

By Georgina Griffiths : Meteorologist, MetService

For the first five months of 2022 (January to May), New Zealand experienced an unusual number of highs sitting to the south of the country, and frequent easterlies over the upper North Island (left hand side of Fig 1). It was a relatively settled start to the year for South Island areas, and soil moistures in the east of the South Island – as well as in the west of the North Island – remained in significant deficit into May (Fig 2).

However, a major pattern change to a higher than normal frequency of deep lows across both the Tasman Sea and south of New Zealand occurred in winter (June and July-so-far). This shift produced an extremely wet, windy and wild regime, complete with multiple heavy South Island snowfalls. (See Figures 3 to 7 for selected rainfall accumulation plots.) Saturated soils became the norm for north-facing and west-facing areas of both Islands by mid-July.

Climate driver update

The 2021–2022 La Niña has now weakened to a point that most commentators have ended the event. However, many climate models forecast a return to La Niña conditions for late in the year, for the third year running.

For winter and spring, the most important factors for the New Zealand weather maps are likely to be an active winter Tasman Sea jet stream and the likely formation of a negative Indian Ocean Dipole (IOD) event.

Both of these climate drivers produce more 'active' lows over the north Tasman Sea, and in turn, more frequent northerly rain events over New Zealand than usual.

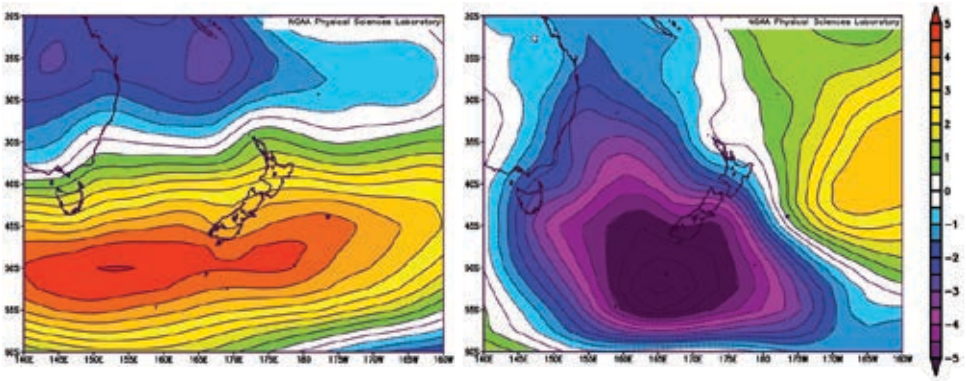


Figure 1 *Mean sea level pressure anomaly (deviation from normal) for January to May 2022 (left hand side) and the period 1 June to 8 July 2022 (right hand side). Red/orange colours indicate higher than normal pressures, while purple/blue colours indicate lower than usual pressures (more lows). Map produced courtesy of NOAA/ESRL Physical Sciences Division*

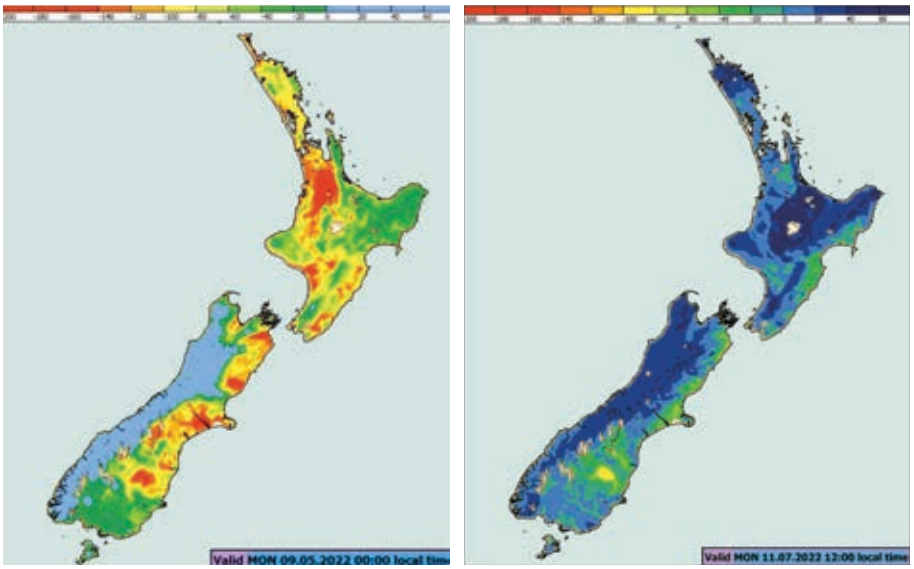


Figure 2 *A 'snapshot' of estimated soil moisture deficit at 4km resolution on 9 May 2022 (left hand side), compared to 11 July 2022 (right hand side). Blue colours indicate saturated soils. Orange colours show significant soil moisture deficit, while red colours signal severe soil moisture deficit*

The MetService long-range forecast continues the stormy weather patterns of July into August. For the latest long-range predictions, you can sign up for free to the Monthly Outlook at **www.metservice.com/emails**

Rainfall accumulation plots tell a wet story

Figures 3-7: *Regional annual rainfall accumulation (mm) for the last five years (2018 to 2022). The annual average rainfall accumulation is shown in black*

Figure 3: Kerikeri

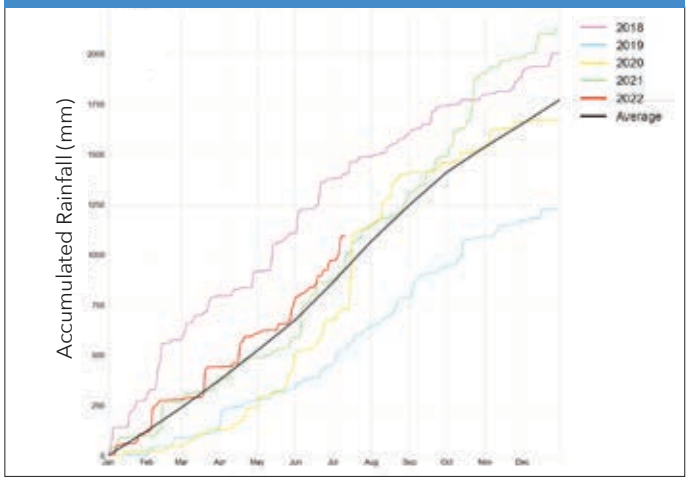


Figure 4: Hamilton

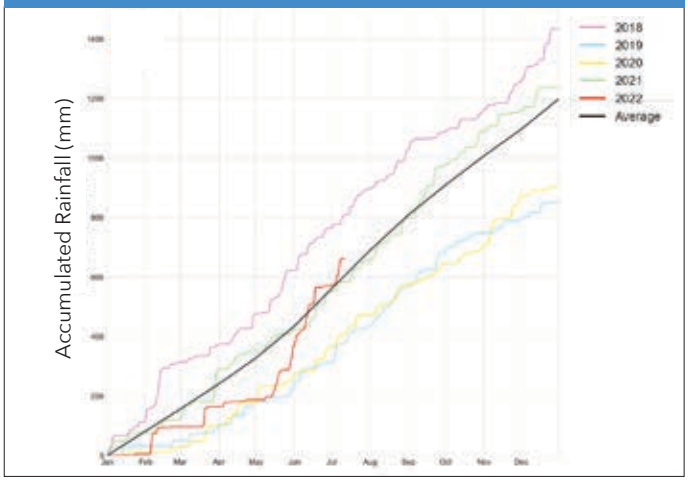


Figure 5: Napier

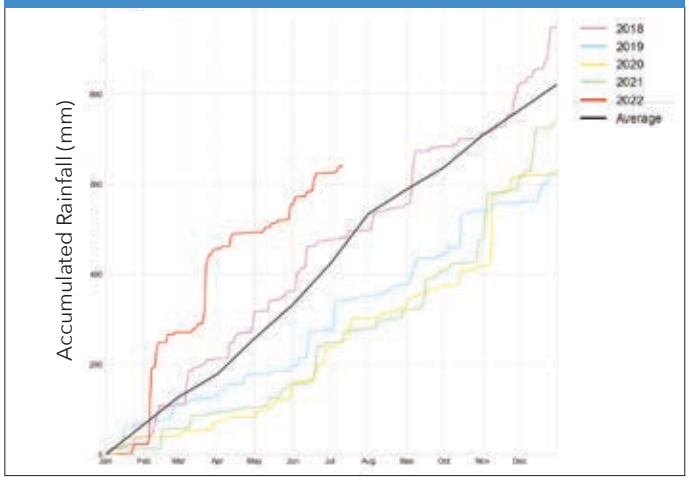


Figure 6: Blenheim

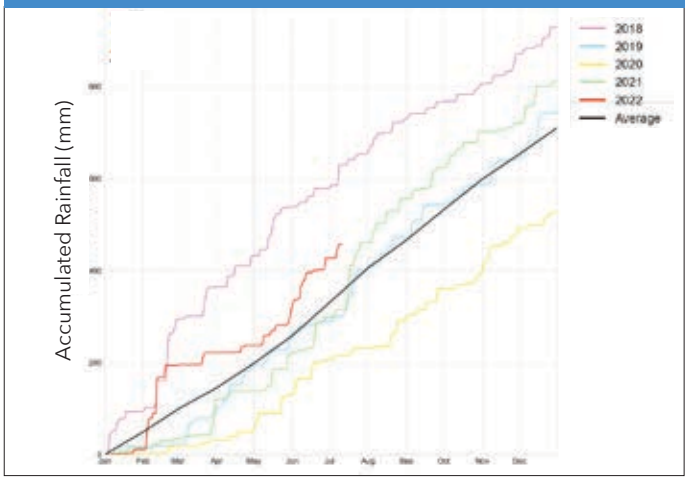
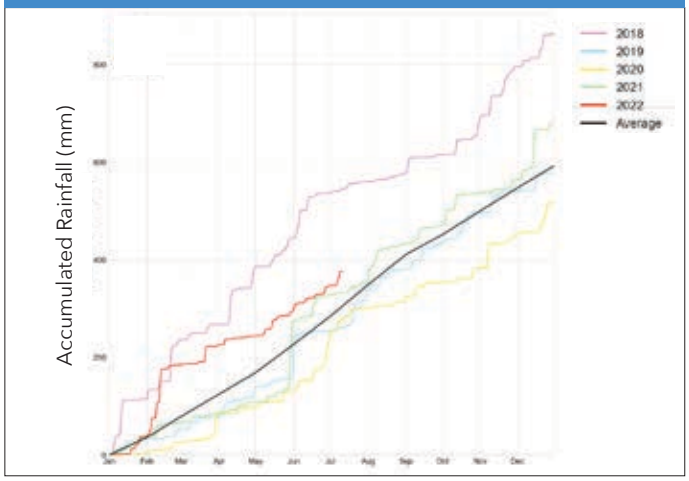


Figure 7: Christchurch



Technology helps capture yield potential

It's mid-winter in Central Otago and on a cherry orchard at Coal Creek near Roxburgh, Jered Tate is taking advantage of the off-season to work on his latest batch of kirsch.

Jered Tait of Jerry's Cherries and Paul Bridgeman of Nufarm

He's been interested in distilling fruit brandy for years, but it wasn't until 2020 that he geared up to produce commercial volumes, establishing Up A Tree distillery.

It's one way to help buffer the business against the effects of ongoing labour shortages caused by the global Covid-19 pandemic.

As a rule, Jerry's Cherries, which he started in 2015, sells all its crop fresh to the local market.

At 2.5 ha, it's a small orchard compared to the scale of some of today's developments, but it's big enough to encompass a wide range of varieties, including Staccato, Samba, Sweetheart, Stella, Burlat, Dawson and Lapins.

Jered had no orcharding experience when he moved south from Auckland to buy the original property. He has since added another 24 ha of stonefruit and pipfruit at nearby Fairview Orchard.

Making the most of fruit set is a high priority for the cherries, and for the past five seasons he has used an ethylene inhibitor which is more commonly applied to slow fruit ripening to help in this regard.

"It can be super challenging to grow cherries in the first place; we want to be maximising our yield at every opportunity."

ReTain is a naturally occurring plant growth regulator which reduces ethylene production in plant tissue.

Applied as a flowering spray to hard to set cherry varieties, it delays flower senescence, giving flowers a better chance for pollination and fertilisation.

As soon as the cherry flower opens, the stigma, one of the female parts of the flower, begins to senesce, and in some varieties it is viable for a shorter time than others. ReTain effectively keeps the stigma alive for longer.

Delaying flower senescence also has significant benefits when variable weather over flowering affects bee activity.

ReTain has been registered for this use in New Zealand since 2016.

Jered is selective in his use of the product because not all trees need it, but on certain varieties the result is significant yield improvement. On Staccato, for example, which can be notoriously challenging when it comes to setting a full crop, "we've had at least 50% increase in fruit set. That's well and truly worth the investment."

Running out of ReTain with one row to go last spring clearly highlighted the benefits, with treated trees flowering for three to four days longer than those which missed out, and setting many more fruit per bunch.

Success comes down to careful timing and keeping a close eye on trees as flowering progresses.

"You've got to be following the advancement of your crop. The recommendation is to apply at 30% flowering, and for Staccato the difference between one morning and the next could take you from 30% to 70%, so it's critical to be aware of what's going on."

For best results, Nufarm development manager Alan Cliffe recommends growers follow these guidelines:

- The application window is very short and accurate timing is essential so make sure you're prepared and have a supply of ReTain on hand.
- Monitor the development of blossom on trees closely.
- Aim to apply ReTain at 30% bloom.
- Apply ReTain alone – adjuvants are not recommended for blossom sprays.

nufarm.co.nz/retain

®ReTain is a registered Trademark of Valent BioSciences Corporation, IL, USA.

Biostimulants generate earlier orchard returns

Biostimulants are proving a great tool for upping productivity while reducing environmental impacts.

By setting up beneficial biology in the soil and on foliage, biostimulants support optimal growth and resilience in plants. This leads to better nutrient uptake by plants resulting in consistent good yields of high-quality fruit and a reduced need for agrichemicals and fertilisers.

A recently completed apple trial of the BioStart biostimulant programme on a section of Vesty Orchards showed that enhancing soil biology through regularly applying Mycorrcin resulted in better shaped trees that established faster, leading to higher yields earlier.

BioStart Mycorrcin is a soil biostimulant that activates beneficial soil microbes that stimulate root growth and increase nutrient uptake in plants.

The Hawke's Bay trial was begun on newly planted Royal Gala – Pacific Star trees and overseen by orchard manager Andy Sandbrook. The trees were trained using the standard central leader method and planted at 3 m x 1.2 m. All trees received the same standard fertiliser and agrichemical programme throughout the trial. The trial started at planting in August 2018, with Mycorrcin being applied three times per year.

> **"As a result of these bigger and better structured trees, at harvest this year the grower picked 3kg more apples per tree from BioStart treated trees**

By year four the application of the BioStart programme had increased the trunk cross-sectional area by 44 percent, tree height by 24 percent, and the total number of branches per tree by 25 percent. Importantly, the BioStart treated trees had 67 percent more branches between 0.7 and 1.1 m of the trunk (from 2.5 to 4.2 branches per tree) which is the ideal place for productive branches to grow. In addition, all the Mycorrcin treated trees had two or more branches between 0.7 and 1.1 m of the trunk, whereas 23 percent of untreated trees had less than two branches between 0.7 and 1.1 m of the trunk.

In January 2022 the two dominant branches of each tree were assessed for branch length and the amount of fruit on these branches counted. The BioStart treated trees had a 27 percent increase in the branch length of the two dominant branches per tree (from 0.9 to 1.1 m per tree)

These same age apple trees show BioStart Mycorrcin treated on the left, while those on the right are from the untreated block

Orchard Manager, Andrew Sandbrook, and BioStart Territory Manager for Horticulture, Phil Carter, were well pleased with the lift in yield at the finish of the trial harvest

and the fruit count was 25 percent greater.

Overall, this means the BioStart treated trees had a better architecture with more branches located in the right area of the trunk creating a high yielding tree shape.

As a result of these bigger and better structured trees, at harvest this year the grower picked 3kg more apples per tree from BioStart treated trees, which is a 12 percent yield increase correlating to 8 MT/ha.

Andrew was thrilled with the results, and is now moving on to using Mycorrcin on the rest of the orchard.

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ALWAYS READ AND FOLLOW LABEL DIRECTIONS.