

Hard going with a twist of optimism

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National policy advocacy has its challenges

Sometimes growers and product groups ask me about how it is possible for Horticulture New Zealand to advocate for policy settings on a national basis, as they believe the policy outcomes for vegetable growers are different from those for fruit growers. Or that apple growers will need different national policy settings than cherries, or potatoes different than peas, etc.

Barry O'Neil : HortNZ president

The reality however is that over 90 percent of national policy issues are common to all of horticulture, and all growers want and need the best outcome we can achieve. We don't and won't always get everything we argue for, and we are not able to push back the tide. Nor should we if policy changes are needed for future generations to succeed, and also expected by our consumers.

And of course the government is setting national policy for all of the food and fibre sector, and is not favouring horticulture over pastoral farming. As you would expect, the other sectors' industry good bodies and product groups are working equally hard to ensure their farmers are not being disadvantaged compared to what horticulture growers 'are getting'.

We do, however, try to align our efforts with the other industry bodies, such as Federated Farmers, so that we can have joint positions and also share the workload, when possible.

It's interesting that, depending what lens we wear, fruit groups often think we are too focused on vegetable issues, and vegetable groups see us as too focused on fruit groups. Well maybe we have the balance right then! But to me with the policy issues common to both, this becomes an academic argument.

We all need the ability to use suitable land for growing, to use the inputs needed such as water, the ability to spray and use fertiliser. We all need adequate and affordable labour to plant and harvest. And we all need to maintain our social licence to operate.

When a new policy proposal comes out, we engage with our members, product groups, and district associations to get inputs for the submission, albeit often within a very short timeframe which reflects what we have been given by government to work within.



Our goal is always to advocate for the best possible outcome for our grower members – an outcome that will enable horticulture to both maintain current business and grow into new business, and with the minimum compliance costs possible. Our advocacy is science-based and we want any new government policy to be aligned and integrated rather than disconnected.

HortNZ's strategy is focused on proactively influencing policy at a national and regional level – seeking the best operating conditions for horticulture in areas such as the environment, biosecurity, food safety, crop protection and labour. We also focus on translating sector wide policy changes for growers so they are familiar with newly implemented policy and regulations and know what is needed in order to comply.

We just have too many moving policy proposals to be able to be specific with the policy outcome in our strategy, for example the Grocery Code of Conduct, or He Waka Eke Noa (HWEN), or Cyclone Gabrielle financial support, or Resource Management Act reforms, or Recognised Seasonal Employer scheme policy and so on. In the last financial year, we submitted on over 60 new policy proposals.

Some of the policy areas involved are really difficult and require huge amounts of work and leadership. Carbon neutral policy and HWEN for instance – government has a law requiring pricing for emissions to begin in 2025. HWEN is all about working collectively within the food and fibre sectors, with Māori, and government, to find a better option than the Emissions Trading Scheme which is the backstop in the law. We are doing just that, progressing an option that is farm level – not a tax, agrees that methane is different than nitrous oxide, recognises on-farm sequestration, and provides for minimal pricing, with any revenue collected to be recycled back to the sector for research to help reduce

emissions. We will continue to work to develop an approach that will be a better outcome than what the backstop would mean, which is a blunter tax-like mechanism affecting all the primary sector including growers.

Another difficult but related policy is freshwater and the objective for freshwater management Te Mana o te Wai. Climate change and freshwater policy are related as both policies aim to reduce emissions: one into the air; the other into our waterways.

The National Policy Statement for Freshwater Management 2020 is part of the Essential Freshwater package. It gives national direction, which regional councils must put into action through their regional policy statements and plans.

It requires every regional council to identify values for freshwater for their region and to set outcomes, including water quality concentrations, flows and water levels for rivers, and to develop interventions to achieve the outcomes, or to take harder steps if deterioration is detected.

With these two major policies, which are hugely significant for all of the food and fibre sector and Aotearoa New Zealand, our HortNZ team has worked incredibly hard, along with product groups and district associations, to achieve the best possible future settings for growing. And to align them with our existing GAP assurance programmes rather than have government impose another certification/assurance scheme on us.

At a regional level some policy such as freshwater will have specifics depending on the catchment and river systems involved, but we are still wanting to achieve as much national consistency as possible. We continue to advocate for national direction that recognises the importance of the supply of fruit and vegetables, and the regulatory settings that allow horticulture to prosper in every region.

Where it gets even harder is when a catchment has over-allocated its natural resources, so there isn't any more water to allocate, or rivers are already too full of nitrogen and phosphorus. But even here we are still advocating for the future of growing within environmental limits, such as for water storage schemes to enable growing to continue and expand or acknowledgement of the importance of domestic food security – growing vegetables and fruit to ensure a resilient food supply.

National policy advocacy certainly comes with its challenges. We haven't been able to achieve all we have sought, but we will always do everything we can to secure future policy settings where growing is both possible and profitable.

From where I sit as both a grower and as chair of HortNZ, we can be pleased with the ongoing efforts of our HortNZ team to get the best results for us, even in a challenging political environment.

Kia kaha. ●



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Country at a crossroads

New Zealanders by and large support our country's horticulture industry, but this country is under pressure. While Horticulture New Zealand tells taxpayers about our passion for growing and shows them the strain growers are under, we must also understand the context of a country struggling to make ends meet. Without the support of the country, growing will only become harder.

Nadine Tunley : HortNZ chief executive

We held the inaugural Horticulture Conference Week earlier this month. I would like to thank all the sponsors and product groups that worked with us to ensure the week was a success. Throughout the colder months, the six regional finals of the Young Grower of the Year also take place, with the national final taking place this year in Pukekohe on 4-5 October. Thank you to the regional organising teams as well as the sponsors for coming together to ensure these events are a success and highlight all the good things about the horticulture industry to a wider audience.

Considerable investment is made across our industry in events and meetings that bring growers together. Sometimes these events serve a particular purpose - for example, finding out more about proposals and gathering feedback on these proposals; or finding out more



about decisions and how they affect growers.

Other events are a chance for growers to reflect, offering them the opportunity to come together for a good yarn, while celebrating the success of our industry.

Growers grow because they are passionate about what they grow. Even though times are tough for many growers, the passion comes through in conversation at events. Indeed, there's a strong drive to get back out there and grow - particularly if the sun is shining!

The strength of this passion cannot be underestimated but also, it cannot be taken advantage of. Organisations such as HortNZ try and reflect growers' passion in their advocacy while maintaining dialogue with groups who have not experienced the passion, let alone understand where it comes from.

 **ORCHARDIST**

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Sometimes the passion is overwhelming. This puts HortNZ in a difficult position. Our objective is to achieve as much as we can for growers in environments where many different things are taken into consideration. Call this the art of politics with a small 'p', even though it involves interaction with Politics with a big 'P'.

“

There's a strong drive to get back out there and grow

New Zealand is under a lot of pressure at the moment. The entire country has post-Covid inflation to contend with and a succession of adverse weather events and generally poor growing conditions are putting additional strain on growers.

We need to focus on our industry's goals within the context of the future of New Zealand. We rely on society's support to grow. The term we give this is 'social licence'. Yes, we could take a more militant approach, but HortNZ doesn't believe that is in the best interests of the whole industry, because that could bring into question our social licence.

New Zealanders by and large are very supportive of our country's horticulture industry. Indeed, they are proud, particularly when they see our produce on shelves overseas. Our industry has so many things going for it, now and in the future, particularly in terms of adaption to climate change and increasing New Zealand's production of low carbon food.

We are at a crossroads. The government - and taxpayers - are offering support to adverse weather affected growers, because they do see the value of our industry and the healthy food that we produce.

“

We rely on society's support to grow

However, the country doesn't have infinite resources. Every day there are news reports of a deepening deficit for the country, with many other sectors and industries also calling out for government support. This is why we always need to be mindful of our social licence. ●

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YOUR LEVY AT WORK

INDUSTRY WIDE ISSUES FOR INDUSTRY GOOD

Organic Aotearoa

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Strengthening New Zealand's organic brand

Emily Levenson : HortNZ environmental policy advisor

Organic horticulture is on the rise in New Zealand, due to increased consumer desire for spray-free food produced with environmental wellbeing in mind. From 2020-21, New Zealand organic fruits and vegetables produced \$143 million of value, up 6 percent from 2017. Organics make up about 2.45 percent of horticulture by land area. Horticulture New Zealand represents levy-paying organic growers alongside conventional growers in our policy and extension work.

After this year's passage of the Organic Products and Production Act 2023, HortNZ is upping our efforts to engage with our organic growers. In June, we submitted on the Draft National Organic Standard, which will provide a unified list of rules holding all New Zealand organic producers to the same certification requirements. This will strengthen the New Zealand organic brand and give consumers confidence, at home and abroad, in our products' environmental credentials.

To develop our submission, we reached out to organic growers and sector leaders at Organics Aotearoa New Zealand and BioGro and participated in sector forums attended by various organic advocacy groups. Our submission argued that the first draft of the Standard should align more closely with existing Standards to ease the transition for growers. We also called for the Standard to cover imported organic products as well as those produced here. We further asked that the Standard ensure that its rules for contamination testing and compost reflect

the reality of an interconnected world that can never have guarantees of zero contamination. What is most important is that organic growers follow an agreed-upon practice to minimise pollutants. Our submission was supported by New Zealand Kiwifruit Growers Incorporated, Strawberry Growers NZ, and Tomatoes NZ.

HortNZ then submitted on the second draft of the Standard, calling for alignment of the organic principles with the internationally respected IFOAM principles of health, ecology, fairness, and care.

In early July, the HortNZ Environmental Policy Team hosted a policy catch-up with organic growers to inform them of our work in biosecurity, resource management and organic rules and to hear more about what their sector needs to succeed. The conversation yielded new connections and affirmed that there is potential knowledge-sharing to be had between conventional and organic growers given our industry's shared commitment to environmental best practice.

Moving forward, we hope to host quarterly catchups with the organic horticulture sector to ensure their priorities are included in our policy arguments. ●



Organic growers who would like to participate can email Emily.levenson@hortnz.co.nz.

*Statistics sourced from Organics Aotearoa New Zealand (OANZ).
Time for Action: 2020/21 New Zealand Organic Sector Market Report.*

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HortNZ welcomes new directors

Growers have supported the appointment of three very capable and experienced directors on the Horticulture New Zealand Board – two new faces and one familiar. The focus on industry good body governance has never been higher as the horticulture sector grapples with one challenge after another.

Doug Brown and Alistair Petrie join the Horticulture New Zealand Board this month following the HortNZ Annual General Meeting held during the inaugural Horticulture Conference Week. The new appointments follow the departure of directors Kate Trufitt and Tony Howey. Director Hugh Ritchie was reappointed for a new term.

"It's great to have Al and Doug joining the board, bringing new skills and experience," says HortNZ president Barry O'Neil. "Both Al and Doug have extensive experience in horticulture and are also very capable and experienced governors. We look forward to their contributions, and I thank our grower members for supporting both."

Doug has been active in agri-business leadership for more than 35 years. Together with his brothers, Doug runs a mixed dairy and kiwifruit operation – a herd of 3000, and a kiwifruit production footprint in excess of 100 hectares across Te Puke, Ōpōtiki and Gisborne, including a joint venture with local Māori in Te Kaha. Doug was previously chair of New Zealand Kiwifruit Growers Incorporated.

"Growers across the horticulture industry have faced significant challenges in recent times," Doug says. "The role of HortNZ has never been more critical in continuing to advocate for grower interests, while building a sustainable environment for the industry to operate in and thrive."

Alistair held senior positions in the Turners & Growers group of companies and Freshmax, before embarking on a governance and advisory career. His other directorships include Turners Automotive Group, Darling Group Holdings and Bartel Holdings, while he is currently playing advisory roles for Pāmu and Foodchain. He was responsible for setting up the Fresh Produce Importers Association and was a director of United Fresh.

"I have a strong conviction that grower/industry bodies need to be relevant to their stakeholders and need to evolve ahead of the curve to ensure they add value," says Alistair. "The rapid consolidation, innovation and scale of many growers means the focus of industry bodies is different to the structure of 20 years ago. I believe I can assist in this evolution."

Hugh, an existing HortNZ Board director, retired from the board by rotation and offered himself for re-election for a new term. Hugh is the Managing Director of Drumpeel Farms, a family run farm in the Hawke's Bay encompassing more than 2050ha of mixed cropping and livestock. More than 700ha is planted in crops including cereals, seed and process vegetables with the balance of the property being used for lamb and beef finishing.

"I am concerned that our ability to influence the significant policy reforms we are faced with is reducing," Hugh says. "This is not due to effort or strength of argument but the changing way politics work."



The role of HortNZ has never been more critical

"I think we need to look closely at how we work as an industry. We need to look at how we can engage with other industries – not just in the primary sector – to create a louder voice to effect change and reduce duplication, ensuring levy funds are spent in the most cost-effective way."

Tony Howey retired from the board having completed nine years and therefore was unable to re-stand under HortNZ rules. Kate Trufitt did not offer herself for re-election due to changes in employment. Look out for our interviews with Kate and Tony in *The Orchardist* this month and in September as they discuss their experiences on the board and their outlook for horticulture.

"I would like to thank Kate and Tony for their contribution on the board," Barry says. "Both have been tireless in their advocacy for growers, particularly during the challenging last years as the industry grappled with Covid-19 and severe weather events."

HortNZ advocates for and represents the interests of New Zealand's 4200+ commercial fruit and vegetable growers. The HortNZ constitution provides for a term of three years for elected directors with one third of directors retiring by rotation each year. ●

HORTNZ BOARD – 2023-24



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Chairman of Directors



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Dr Bruce Campbell
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The brown marmorated stink bug could result in a \$3.6 billion drop in GDP by 2038

New Zealand expands its toolbox to quickly eradicate a stink bug incursion

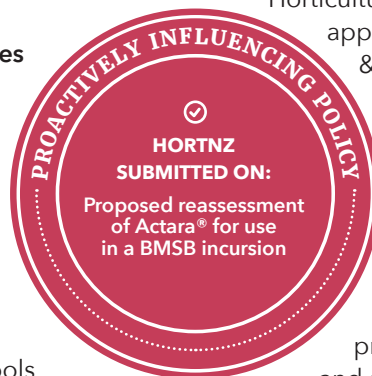
Horticulture New Zealand supports the Environmental Protection Authority's decision to change the rules around how the insecticide Actara® can be used if the brown marmorated stink bug (BMSB) invades New Zealand. Despite the known risk to bees and other pollinators, Actara is currently an important tool in trying to prevent a much greater catastrophe.

Ministry for Primary Industries (MPI) sought approval for the targeted spot spraying by MPI-approved biosecurity chemical operators in the immediate aftermath of a post-border incursion. Otherwise, New Zealand would be faced with few effective tools available for immediate deployment in the event of a BMSB incursion. Approval was granted by the EPA, subject to a number of controls. To further reduce the potential

impact on bees, all beehives must be moved from the area for at least three weeks after spraying.

Horticulture New Zealand submitted in support of the application, supported by New Zealand Apples & Pears Incorporated, Summerfruit NZ and Tomatoes NZ. Kiwifruit Vine Health and New Zealand Winegrowers also submitted in support of the application. HortNZ also presented at the hearing.

"Nobody wants to increase insecticide use," says HortNZ's Anna Rathé, who spoke at the hearing. "Part of producing a quality product is fruit that looks and tastes excellent and also has a low residue profile. The sector has been working hard to have low inputs of chemicals. So the ideal outcome would be BMSB not arriving at all. But we have to consider the possibility of it arriving. It's one of





The brown marmorated stink bug is one of our top border incursion threats - in the same category as exotic fruit flies

our top threats - in the same category as exotic fruit flies. Considering the impacts of long-term management that other countries are facing, that's a situation that we're very keen to avoid."


Actara is currently used to control insect pests on kiwifruit, pipfruit, and potatoes. MPI applied to increase its use from four applications per year up to a maximum of eight in a treatment location - only in response to a serious BMSB incursion - most likely in a localised or urban setting.

BMSB is one of the most serious biosecurity threats to New Zealand. They can cause crop losses in a wide range of crops, including fruit trees, kiwifruit, corn and other vegetables. Overseas crop losses of 90 percent have been reported. A New Zealand Institute of Economic Research (NZIER) report produced in 2017 estimated that if BMSB were to become established in New Zealand it could result in a \$3.6 billion drop in GDP by 2038. It predicted horticulture export values could fall by up to \$4.2 billion over this period.

The stink bugs are in more than 30 countries and have caused billions of dollars in economic losses to global agriculture. While New Zealand has never had an established population of BMSBs, MPI has frequently intercepted the pest at the border.

“
BMSB is one of the most serious biosecurity threats to New Zealand

As part of the government and industry partnership in the Brown Marmorated Stink Bug Council, HortNZ has put a lot of time, energy and resource into getting prepared for this pest. Initiatives include a world-first pre-emptive biocontrol approval of samurai wasp *Trissolcus japonicus*, development of a comprehensive biosecurity response plan, a national surveillance programme and public awareness campaigns. ●




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Outgoing HortNZ board member Kate Trufitt is set to take on a new role as chief executive of Potatoes NZ

Collaboration, listening, innovation part of new leadership

This month Kate Trufitt finished her term as director on the Horticulture New Zealand Board. She spoke with ELAINE FISHER about her experience on the board, her career in horticulture and her leadership vision.

Kate Trufitt's roles within the horticultural industry have been many and diverse, each adding to her professional and personal growth, but it was being offered an associate directorship with the Horticulture New Zealand Board which cemented her interest in governance.

Kate, who was elected as a grower representative on the board, has recently resigned from her role as group safety, compliance and sustainability manager with Apata Group in the Bay of Plenty, so did not

put herself forward for re-election to the HortNZ Board.

"I had been with Apata for eight years, which included risk management during Covid-19. It had taken its toll and I decided I needed a change, so I'm taking some time to decide where to next," says Kate, who is also a member of Women in Horticulture.

"I am really interested in leadership. It's a concept which I think is changing because the way people want to be managed is changing. Today's young people want to be treated differently

than the Baby Boomers.

"Leadership needs to acknowledge that people want a safe place to work where they are appreciated and supported. Collaboration, listening and innovation are important. I'm interested in seeing how new leadership develops and looking for a role in which I can explore those opportunities to add value and do something a bit different, and which resonates with me."

Kate's school years were spent in Whakatāne where her parents, who were keen gardeners, developed a

herb business, growing 100 varieties of herbs and teaching others how to use them for culinary and medicinal purposes.

“My aunt and uncle had a boysenberry orchard at Te Puke where we used to help pick fruit when I was young.”

“
People want a safe place to work where they are appreciated and supported

Those experiences were Kate’s first introduction to the horticulture industry, but it wasn’t where she began her working life. Kate found university wasn’t for her and found full-time employment in the interior design industry, starting with an Auckland company then taking her OE and returning to New Zealand to work for the same manager.

Kate’s career in horticulture began when she joined Cedenco in Gisborne in a marketing role, subsequently moving into logistics management.

“In 2005 I joined Riversun Nursery in a client services manager role responsible for all ‘business as usual’ aspects of the nursery from sales to production and logistics.”

Kate’s next move was to Kaiaponi Farms as market manager in 2008. “Here I developed industry market relationships and started on my journey of compliance and health and safety. Leaving Gisborne in 2011, I joined Fresh Direct in Auckland in a human resources, and health and safety compliance management role.”

In 2015 Kate moved to Tauranga and joined Apta Group where her role grew to include the fields of health and safety, compliance and sustainability.

“I have been lucky with opportunities people have given me in the horticulture industry, and my growth has been organic rather than targeted and mapped.

“I do have a knack for spinning quite a few plates at the same time, and I

have had good teams around me. I learnt early on that your team is really important, and inclusive management and regular communications are at the forefront of managing people and for getting the best from your team.”

Kate’s career pathway illustrates some of the diverse roles the horticulture industry offers, and she encourages young men and women to consider it as a career option. ●

To keep up-to-date with Women in Horticulture, its news and activities, and join the membership database, email: info@women-in-hort.nz

Everyone is welcome.



**KATE TRUFFITT
 CONFIRMED AS
 NEW POTATOES
 NZ CHIEF
 EXECUTIVE**

Just before *The Orchardist* went to print, Kate accepted a new role as chief executive of Potatoes NZ, the industry association representing the interests of the New Zealand potato industry. Acting chief executive Jon Davison says that, following a rigorous process among a high quality pool of candidates, Kate was confirmed as the successful candidate to be Potatoes NZ’s new CEO with her proven experience in the horticulture sector providing a distinctive advantage. ●



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YOUR INDUSTRY

ACROSS THE SECTOR — ACROSS THE COUNTRY

Young Growers

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Third generation MG grower Chris Pescini and MG representative Andrew Body

MG celebrates 100 years of growing together

Market Gardeners Limited (MG) has deep roots in New Zealand, stretching back to 1923. It all began with a small group of resolute growers from Lower Hutt who felt that unfair practices from the auction merchants were impacting the value they received for their produce.

In response, they embarked on an extraordinary endeavour - the formation of a grower-owned produce sales and marketing cooperative, which aimed to serve the hardworking men and women who dedicated themselves to producing fresh fruits and vegetables.

The MG story unfolded at a time that saw New Zealand grappling with the aftermath of the First World War which cast a dark shadow over the country and the Great Depression looming large on the horizon. Amidst this tumultuous backdrop, 81 original shareholders pressed forward, each committing a significant sum of between 10 and 50 pounds and on 21 September 1923, Market Gardeners Limited was officially registered.

It seems entirely appropriate that its first auction was held on Guy Fawkes Day (5 November) in 1923. On that

morning, just before daylight, a long trail of trucks loaded with fresh produce and cars carrying the directors of the recently formed company was winding its way into Wellington. It was the culmination of relentless hard work from a group of determined growers who firmly believed in fairness.

One of the original founders was Lower Hutt grower Justin Pescini. The family business has become MG's longest serving growers, over the years supplying everything from rhubarb to Italian tomatoes. Today the business is based near Levin, and specialises in potatoes and onions across 250 hectares, with a lot of their product still sold through MG markets in the lower North Island. The business is owned and managed by fourth generation growers, Chris, Andy and Brent Pescini.



1 1923: An auction in progress at the Te Aro site in Wellington shortly after opening the doors in 1923

2 1920s: Outside the Market Gardeners Limited Te Aro Railway Station site in Wellington

Speaking about their history, Chris says they moved out to Levin following the second World War, after the land the family owned was acquired by the railways.

“Dad (Justin) had a reputation as someone who was hard but fair,” says John. “Setting up Market Gardeners was just about being fair – don’t be a burglar – treat everyone the same and don’t have favouritism.”

“I believe that around in Courtenay Place [in Wellington] was where these fellas, a lot of Italian and Chinese growers, would have their breakfast after being at the markets and talk to one another. This is where the idea of Market Gardeners got talked about and, well, they did something about it”.

At the time, the actions of those early pioneers was described as revolutionary because it meant the end of an old established practice of only privately owned firms selling produce and the introduction of cooperative practices. The goal was to build a sound auction and marketing business, owned by growers, which would enable producers to reap just reward for their efforts.

A century on, Market Gardeners Limited remains a cooperative company, owned by its members, most of which are current grower-suppliers.

“The theme for our centenary year is ‘growing together for 100 years’, which reflects the strong

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The theme for our centenary year is ‘growing together for 100 years’, which reflects the strong sense of togetherness of our cooperative

“My grandfather, Justin, was one of the early Italian market gardeners in the region, where his family had five acres on the site where the Knox church is today,” says Chris. “Because the railway was coming through part of their property, they looked further afield. First, they stopped near Tara Road, put a shovel in and it barely moved because of the stones so they carried on to settle near Queen Street East in Levin.”

Chris, Andy and Brent’s father, John Pescini, who has retired, is happy to share memories of MG and talk about his family’s involvement.



Peter Hendry is chief executive of MG, which represents 400 shareholders and serves over 1000 customers



3 1950s: Levin growers J Pescini and Sons, one of the founding growers behind MG, and their Commer lorry
 4 1975: Market Gardeners Limited Christchurch branch on Madras Street 5 1993: Produce trading on the market floor at MG

sense of togetherness of our cooperative and is a nod to the significant progress we've made alongside our grower-shareholders since MG first started operating 100 years ago," says MG CEO, Peter Hendry.

"Celebrating a century of trading is a remarkable feat for any business, but it holds particular significance for a cooperative involved in the sales and marketing of fresh produce."

"There have been many tumultuous times, but the longevity and success of MG is largely down to the willingness for past directors and leaders to make bold decisions and evolve the company. From a very modest start, driven by a handful of passionate growers, MG is now proudly a leading, integrated Australasian produce business."

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Retired grower John Pescini and his son Chris, who together with brothers Andy and Brent runs the family business Pescini Bros Limited – MG’s longest serving grower

Today, MG represents over 400 shareholders and serves over 1000 customers – providing everyday Kiwis with access to fresh, healthy produce.

“MG has always had a strong focus on being intergenerational, ensuring we’re not only serving and rewarding our current growers and shareholders, but also having a long-term view to ensure the benefits are enjoyed by others in the future – it’s a principle that underpins the cooperative model and aligns with values that MG was founded on 100 years ago.”

“**From a very modest start, MG is now proudly a leading, integrated Australasian produce business**

Over the years the cooperative has expanded on its core business of selling and marketing fresh produce on behalf of New Zealand growers, investing in complementary businesses including export, specialist procurement, flower auction, IP and growing operations. MG is also New Zealand’s largest importer of fresh produce, which is linked to the partnerships they have formed with large international produce brands such as Dole and Sunkist.

“While the founders are central to the MG story, marking our 100 years is also about celebrating our current loyal growers and customers, our MG teams and the communities we live and work in,” says Hendry.

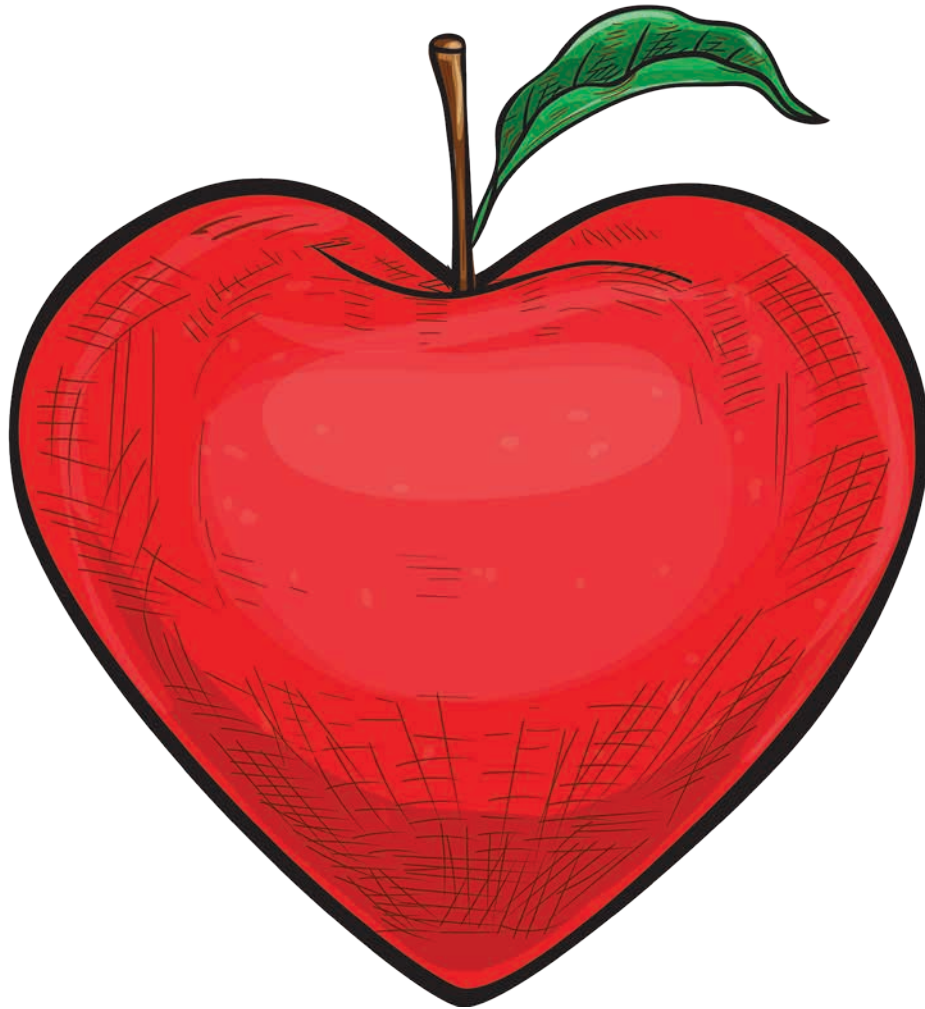
“We have a series of regional events planned throughout the country in November and will host a celebration dinner for all shareholders at Te Papa in Wellington.”

An MG 100-year website has been developed with historical content and information about how to find out about the celebration events. Through the website, growers, shareholders, customers and staff can share images or memories about MG. ●



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Kiwifruit orchardist Ian George, Luke McKay business and supply chain manager for Mainland Kiwifruit Growers and Steve Spark, horticultural consultant, and director of AgFirst at Motueka, with fruit which has been tested as part of a programme to reduce fruit loss in coolstores

Mainland's fruit loss project yields industry-wide answers

When Mainland Kiwifruit Growers Entity experienced fruit losses well above the industry average in 2018, its 43 growers and their post-harvest partners knew improvements had to be made.

Elaine Fisher

Four years on, the project Mainland growers initiated to find answers has reduced fruit loss and is providing learnings for the wider industry.

Luke McKay, business and supply chain manager for Mainland, says one of the factors which led to the fruit loss figure of 4.2 percent for Gold3, was the dramatic increase in fruit volumes from around one million trays in 2017 to three million trays in 2018.

"Growers and post-harvest operators could not quite cope with a tripling in fruit volume, but we also knew there were other factors which had to be addressed so we began a project aimed to get fruit loss below two percent."

Last season the region from Riwaka to Motueka at the top of the South Island exported 5.2 million trays of fruit, the majority Gold3 and around 1.4 million trays of Hayward

green fruit. The fruit loss was three percent, well below that season's industry average of six percent, but still short of Mainland's goal of two percent or less.

Called Creating best practice guidelines to reduce kiwifruit losses, the project is funded by growers with support from Zespri, AGMARDT and the Ministry for Primary Industries Sustainable Food and Fibre Futures (SFF Futures) fund.

Sally Gardiner and David Tanner, joint managing directors of Tauranga-based horticultural consultancy Start Afresh, were commissioned to design the project to identify the factors affecting the poor performance of the region's fruit and to find solutions.

"This is an awesome piece of work which has resulted in learnings which can be applied across the industry. It was desired and wanted by Mainland growers who

acknowledged they had a problem and wanted to improve performance.

"It's also an example of the way Mainland spends its grower-funded research and development money which, within the industry is second to none, and benefits all its growers," says David.








Best practice guidelines for growers, post-harvest operators and coolstores have been established, all of which essentially mean, say Sally and David, getting back to basics.

"It is often easy to forget the basics of fruit handling when the industry is under pressure to harvest fruit without enough labour. That's when the basics go out the window and that probably applies to all crops, not just kiwifruit," says David.

Among the growers taking part in the project is Ian George, who converted his orchard from green to Gold3 nine years ago. "When we started designing the project the issues seemed complex with many things such as seasonal changes out of our control. However, the end game was to understand what contributed to fruit loss and from that to help orchards improve their practices. The real trick was to get a high adoption and we did with 43 growers adopting best practices to reduce fruit loss and it's been a real success."

KEY ON-ORCHARD LEARNINGS FROM THE MAINLAND KIWI GROWERS ENTITY PROJECT

Good picking practices are critical - including:

-  clean bins and gloves to reduce NPFG infections
-  not picking more than one fruit in each hand
-  careful emptying of picking bags into bins
-  not over-filling bins or leaving them in direct sunlight
-  removal of stub stalks
-  not picking in the rain
-  smooth tracks for bin tractors



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Paige van Vught, AgFirst horticultural consultant, checks Gold3 fruit from the Mainland Kiwifruit Growers' fruit library for defects or pathogens which may affect its storage qualities



Sheryn Spark pressure tests Gold3 fruit in the AgFirst Motueka laboratory as part of the Mainland Kiwi Growers' project to reduce fruit loss

For the first season of the project, Sally says the focus was on storage potential. "What we learned that season was that picking fruit at optimum maturity gives maximum storage potential but there has to be compromise because there is no perfect season."

Early harvest KiwiStart fruit does not store well; early main season harvest fruit has a short to medium term storage ability and late main season harvest fruit softens more quickly. The ideal fruit for long storage is that harvested mid-season. That information was used by coolstores to aid inventory management decisions.

The second year of the project identified that poor picking hygiene (particularly from dirty gloves and bins), caused non-pathogen fungal growth (NPFG) on stored fruit which resulted in expensive repacking. Poor picking practices including aggressive picking and banging fruit into bins also resulted in soft fruit, cuts and rots.

Two years into the project, the Mainland R&D committee identified the need to design and run a storage library for the 2022 season.

Steve Spark, horticultural consultant, and director of AgFirst at Motueka, says fruit from each of the eight local coolstores is independently tested at AgFirst's Motueka lab.

"Testing through one independent facility takes variability out of the data so the results are consistent," he says.

When it arrives at the lab each individual fruit is visually checked for defects or pathogens before carefully calibrated slices of skin and flesh are removed and the fruit pressure tested.

The results are sent to Luke who processes the data, sending each coolstore the information which relates to their fruit. "The coolstores can expand on that data to see which lines have the biggest percentage of soft fruit or a

range of defects and use that information to decide which fruit to export first."

Steve says the Riwaka and Motueka region has many attributes which make it ideal for growing kiwifruit. However, lack of fruit growing at altitude and cold autumns means all orchards reach maturity around the same time, making it impossible to pick all the fruit at once, which adds to Mainland's storage challenges.

“

The real trick was to get a high adoption and we did

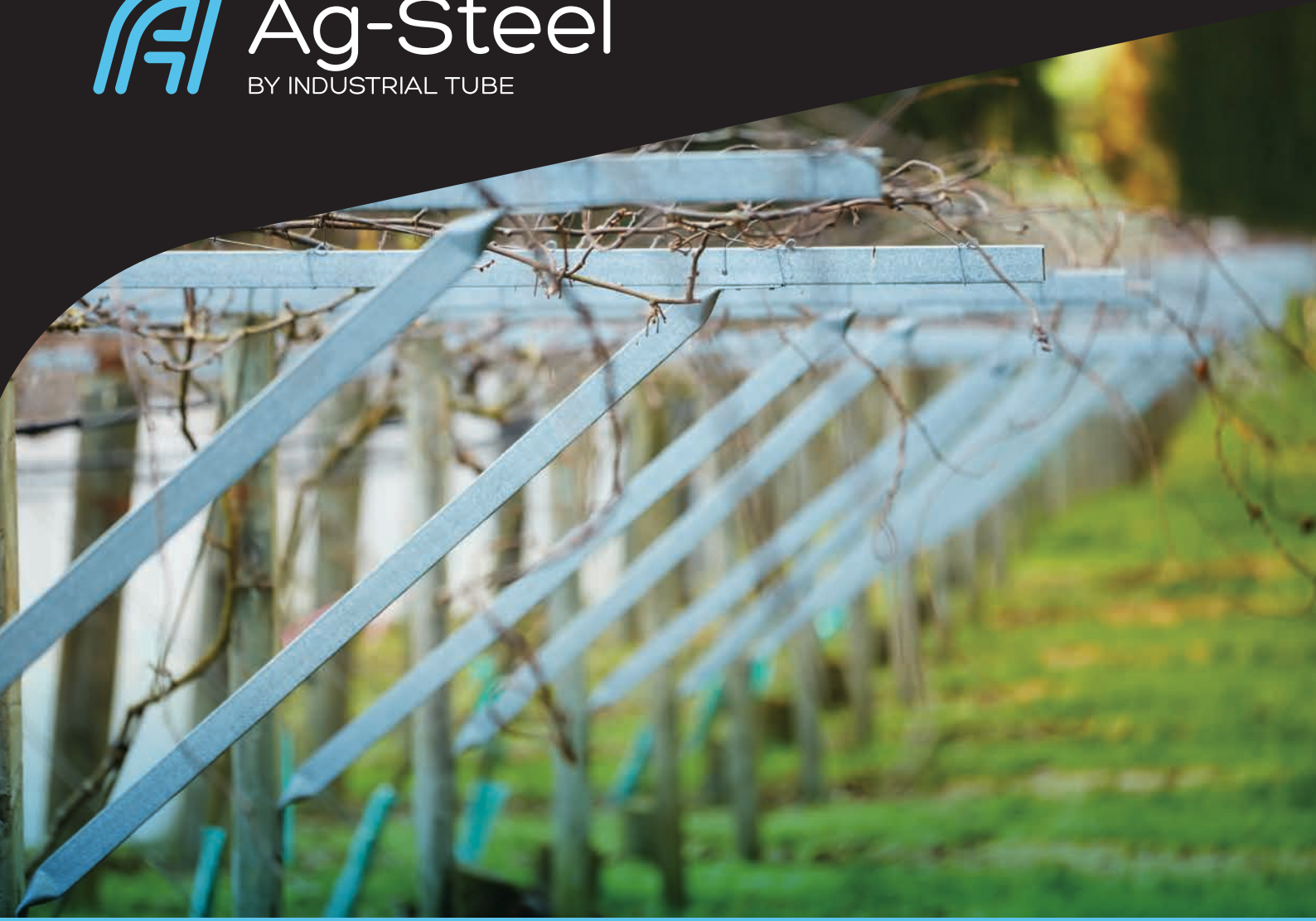
"All our orchards are between two to 10 metres above sea level. We may get frosts in April and with snow in the hills, the cold weather lasts longer so brix levels race and there's a short time to get the fruit off. So, we have a short season of about two months."

Harvesting more KiwiStart fruit helps reduce some of that pressure, but the early fruit does not store well.

Luke says shipping schedules also dictate how fruit is managed. All Mainland fruit is dispatched through the Port of Nelson, either by container, or increasingly in recent seasons, by reefer vessels.

David says as well as reducing fruit loss, by initiating and continuing with the best practice programme, Mainland growers have the opportunity to become a preferred option for some overseas markets.

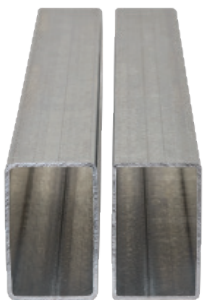
"This project will be ongoing, and all kinds of good processes will come out of it. All Mainland growers know they are in the same boat together and as each improves, they raise the average, and all gain value from that." ●



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SnapDragon apples are expected to have wide appeal in the Asian market

Tyler Brandt visit to promote SnapDragon® and Cosmic Crisp®

Tyler Brandt, grower liaison from Yakima, Washington State, visited Hawke's Bay recently to discuss SnapDragon® brand New York 1 cultivar and Cosmic Crisp® brand WA38 cultivar tree management. Brandt works for Proprietary Variety Management Ltd (PVM), who have the global rights to commercialise Cosmic Crisp and SnapDragon apples.

Te Mata Exports chief executive Sarah McCormack invited growers to a field day to spend time with Tyler Brandt and learn from his experience in the States. Te Mata Exports share the export rights to Cosmic Crisp with PickMee and Yummy Fruit Co. Local market sales are managed through Market Gardeners Limited (MG) and Yummy Fruit Co.

Cosmic Crisp apples are a cross of the Enterprise and Honeycrisp varieties and the brand is owned by Washington State University. "The process of commercialising this variety was the largest of any tree fruit variety globally so far," Tyler said. Cosmic Crisp was first planted commercially in 2017 and by 2023, 20 million trees are expected to be in the ground in the

United States alone. Cosmic Crisp has broken into the top ten apple varieties in the US while selling at a retail price second only to Honeycrisp.

Tyler shared the US Cosmic Crisp experience with growers during his recent visit. His demonstration of 'Click' pruning of young trees was extremely interesting. Click pruning has proven the most efficient way to establish young Cosmic Crisp trees and set them up well for consistent production. The aim is to enable hedgerow pruning for efficient labour use.

Cosmic Crisp is a very late flowering variety. The tree blooms heavily, sets fruit well and drops out naturally.



Tyler Brandt at Springhill Orchard, Central Hawke's Bay, demonstrating click pruning for Cosmic Crisp trees

No chemical thinning is carried out in the US, and minimal, if any, hand thinning is required.

The harvest and post-harvest management of Cosmic Crisp is managed closely by the PVM team in the US. Stem clipping is recommended given its very large fruit size, therefore reducing damage from stem punctures during packing. Fruit must meet minimum starch pattern index and soluble solids levels prior to packing and a fixed

US market release date is set each year to ensure fruit is presented to the consumer at the optimal level.

Cosmic Crisp apples have proven to be a robust, grower friendly variety with good production, exceptional storage ability and achieving high grower returns.

“
... it is known for its sweet flavour and super crunchy texture

The SnapDragon brand New York 1 apple variety was bred at Cornell University. It is a cross between Honeycrisp and an apple breeding selection. In the US, SnapDragon is grown exclusively by Crunch Time Apple Growers, a cooperative of 151 growers throughout New York State. Plantings in the US are estimated to reach 600 hectares by 2024.

SnapDragon matures in early to mid-March in Hawke's Bay. A medium sized apple, it is known for its sweet flavour and super crunchy texture. Fruit has good sugar levels and low to moderate acidity. SnapDragon has been well received by all who have sampled it.

SnapDragon is a less vigorous tree than Cosmic Crisp, therefore a more vigorous rootstock is recommended for this variety. Growers visited a grafted block of SnapDragon on an X-Fruit orchard in Hastings. The grunt of an established root system has helped to push the tree to fill the space quickly 18 months after grafting.

Te Mata Exports has the exclusive export marketing rights to SnapDragon apples grown in New Zealand. Sarah McCormack believes SnapDragon is an ideal apple for the Asian market. ●



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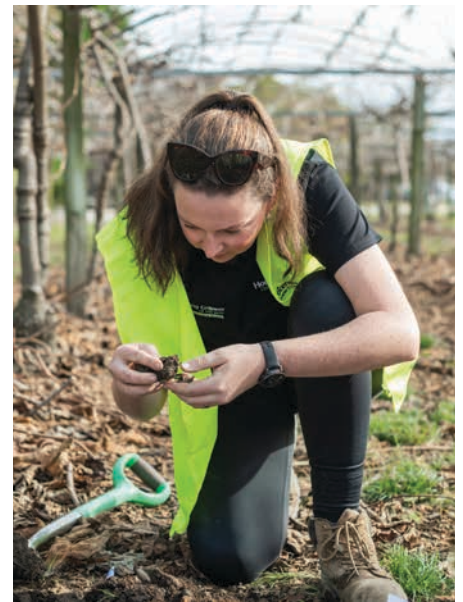




Dillon Peterson is the 2023 Nelson Young Grower of the Year



Ōpōtiki orchard manager Sydney Hines has won the Bay of Plenty Young Grower for 2023



Emily Samuel is the 2023 Gisborne Young Grower of the Year

Young Growers named in regional competitions

Young orchardists competing for a place in the national Young Grower of the Year have impressed in this year's Nelson, Bay of Plenty and Gisborne regional events. ELAINE FISHER, JAMIE TROUGHTON and ANDREW BRISTOL report from the field.

Ōpōtiki orchard manager Sydney Hines won the Bay of Plenty Young Grower, orchard hand Dillon Peterson is the Nelson Young Grower of the Year and Emily Samuel, an apple and kiwifruit manager for Thompson's Horticulture, took home the Gisborne Young Grower of the Year award.

All three will represent their regions at the Young Grower of the Year finals in October, run by Horticulture New Zealand. There they will compete against regional champions from Pukekohe, Hawke's Bay and Central Otago.

It's the second time Dillon, who works for Hoddys Fruit Co of Stoke, has won the Nelson title which he took out in 2018.



Entering and winning before gave him an edge in this year's competition. "I came into it with less nerves because I knew what to expect," says Dillon who is thrilled to be representing his region again. "Having taken part before, I'll also be better prepared for the national finals this year."

Dillon recommends all of this year's entrants take part again next year. "The big thing is not to worry too much



The 2023 Nelson Young Grower of the Year contestants from left: Palace Wheki, orchard hand at Tyrella Orchards; Jordan Popata, supervisor/QC at Thomas Bros; Kaahu Birdling, supervisor at Thomas Bros; Dillon Peterson, orchard hand at Hoddys Fruit Co; Te Konga Te Whare Ponga Moko, orchard hand of Tyrella Orchards. (Photo by Daniel Allen)

about the title but to enjoy and learn from the experience. Just by putting their hands up to enter takes courage and they showed they are the young growers of our industry's future."

Dillon, who grew up at Wakefield near Nelson, enjoys the variety of work horticulture offers. "Every day is different, and I like the outdoors, the seasonal changes and the equipment we work with.

"I started in horticulture out of school as a general orchard hand before becoming a permanent staff member at Hoddys. My roles cover a wide range of tasks but mostly as part of the apple harvest team, carrying out winter pruning and machinery and irrigation maintenance."

Outside of work Dillon enjoys quad bike riding, four-wheel-driving and mechanics. It's his skills with machinery which means he's often the go-to person at Hoddys when machinery needs attention.

Sydney Hines, an Ōpōtiki-based orchard manager, collected the prized 2023 Bay of Plenty Young Grower crown in Mount Maunganui, heading off seven other strong contestants in the annual competition.

In a parallel universe, it could've been a Young Farmer title she collected. Raised in Mangakino on a third-

generation dairy farm, Sydney headed to Massey University in Palmerston North in 2017 to start a Bachelor of Agribusiness.

During her first-year practicums, however, she found herself in Te Puke, working on kiwifruit vine management, which helped set her firmly on the horticultural pathway.

"The early starts in dairy farming were definitely a factor!" she laughs. "And horticulture is still growing massively while the dairy industry still has a lot of challenges - I just feel like horticulture is probably a little more advanced, in terms of being able to continue producing for years to come."

After graduating university, Sydney spent a year in Kerikeri working as a technical advisor for Orangewood, then joined Sybton Horticulture, an orchard management company with interests in the Eastern Bay of Plenty and Northland.

She's now been there for two years, providing technical support and compliance advice, and helping oversee 35 hectares of avocados and around 240 hectares of kiwifruit, mostly around Kerikeri and Ōpōtiki.

Sydney's speech on the use of biotechnology in New Zealand won approval from the audience and judges alike.





The 2023 Bay of Plenty Young Grower of the Year contestants from left: Katherine Smith, avocado grower representative at Trevelyan's; Justin Shirtcliffe, grower liaison with Apata; Ashdon Reid, orchard manager for Southern Cross Horticulture; Sydney Hines, Sybton Horticulture; Jack Tortoiseshell, orchard manager for DMS; Josh Collier, orchard manager for Seeka; Damian Clark orchard manager for Prospa; Dylan Wadsworth, orchard manager for Baygold. (Photo by Andrew Warner)

"There's a lot of stigma around biotechnology and people need to look at some of the perceptions on how that sort of technology works. New Zealand probably has some of the strictest rules around biotechnology in the world, and maybe we need to think smarter about that sort of thing, otherwise we'll start to fall behind."

This year's Gisborne Young Grower of the Year regional final took place on a fine, sunny day, which put smiles on the faces of contestants, their whānau, sponsors and spectators.

“
Hard work does pay off

"I ordered the sun and it turned up on the right day," says grower and Gisborne Young Grower organiser, Nat Egan.

"It's wonderful to have a regional final in Gisborne, particularly given the season we've just had. The competition is an opportunity to celebrate our young people, and their skills and commitment."

Emily Samuel, an apple and kiwifruit manager for Thompson's Horticulture, won the Gisborne competition.

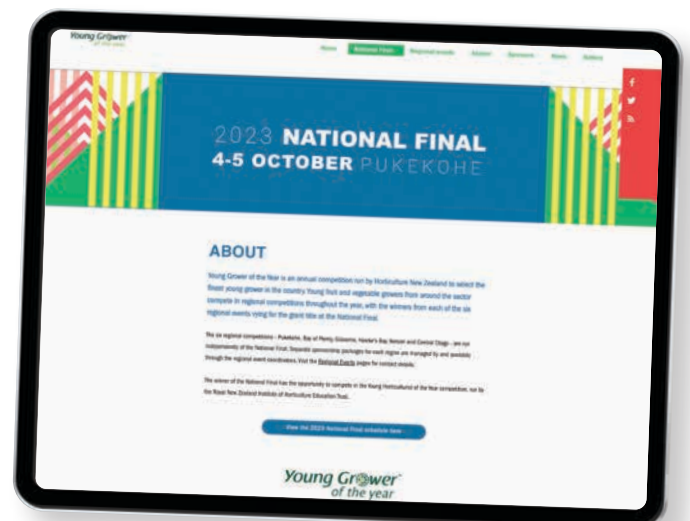
"Hard work does pay off," says Emily, reflecting on the fact that this was her third competition. "I'm a little bit competitive. This event is a chance to build confidence as well as networks. It's also fun and gets you to try something new."

Contestant Bree Martinac, an orchard manager at Tātau Tātau in Wairoa, said she entered the competition because she felt a bit isolated where she is based.

"I wanted to meet other young people. I've enjoyed the practical side of the competition the most. It's also a way to let off steam in what's been a challenging season.

"At Tātau Tātau, we run a cadetship so I will lead the way by encouraging others to enter next year."

Awatea Jobe, an orchard hand at Coxco, had only been in the industry for a year. "I started in the packhouse but found I liked being outdoors better. I was nervous at the start of the competition but ended up loving it.





The 2023 Gisborne Young Grower of the Year contestants from left: Bree Martinac, orchard manager at Tātau Tātau; Larissa Wooding-Ngata, Craigmore Sustainable; Emily Samuel, apple and kiwifruit manager at Thompson's Horticulture; Awatea Rose Jobe, orchard hand at Coxco Farming & Horticulture; James Torrie, Wi Pere Trust; Pip Terekia, trainee orchard manager at Apata. (Photo by Strike Photography)

"I'm keen to learn - that's why I entered - as I want to be an orchard manager when I'm ready."

“
These events create opportunities for young people to get together and develop networks

Jess Cranswick, New Zealand Apples and Pears acting chief executive, says events like the Young Grower of the Year create alliances that can last a career.

"These events create opportunities for young people to get together and develop networks. This is important when

most growing operations are small, which can lead to feeling isolated.

"Contestants can use these networks for support and to run ideas by - ideas they might not feel comfortable testing with older people."

Kate Truffitt, retiring HortNZ board member and incoming Potatoes NZ chief executive, says the Young Grower provides regional finalists with the opportunity to benchmark with their peers from across the country.

"Different regions grow different crops, so finalists get the opportunity to learn from each other. The competition also builds relationships and skills - skills for day jobs as well as leadership skills for future roles in the industry." ●

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Clyde School pupils sold fruit to raise money for Hawke's Bay growers after Cyclone Gabrielle

Community spirit keeps district associations alive

Community fruit grower associations have always been the lifeblood of the industry – a place for mum and dad orchardists to get together and tackle all of the issues of fruit growing.

Aimee Wilson

Meetings were held once a month and two representatives would take the main concerns to a regional advisory group. But times have changed, and those regional advisory groups – traditionally used as forums and to share research as well as political views, have disappeared.

The larger regional fruit growers associations have now filled that role, but down in Central Otago, there are still a few industry associations holding onto more than 100 years of tradition.

Both Teviot and neighbouring Ettrick Fruitgrowers Associations have been revived with new younger members,

and are starting to have a voice again, as well as playing a strong part in their local communities.

Central Otago used to have five fruit grower associations – Upper Clutha, Earnsclough, Clyde, Teviot Valley and Ettrick, but many are now defunct.

The Clyde Fruitgrowers Association (CFA) once had about 40 members. Now it would be lucky to have five (still made up of several strong orcharding families at Hinton's, Clyde Orchards, Panmure Orchards, Strode Road Orchard and Dunstan Hills).

Member Kevin Paulin of Clyde Orchards said he can't remember

when they last had a meeting but it was at least three to four years ago. The group still meets for its annual golf tournament however, proving the camaraderie is still there.

And when Cyclone Gabrielle hit earlier this year, the CFA jumped back into gear, managing to raise \$10,000 to shout some of the Hawke's Bay growers a decent night out at Mission Estate Winery.

Using the prizes donated from its golf tournament and generously supplied by industry-related companies, the group decided it made sense to auction them off and send up north instead.

Teviot Fruit Growers Association president Sam Hobbs of Hobbs Orchard said they still had about 18 members but once had 50 to 60.

“As the years have passed a lot of smaller orchards have been sold and absorbed into larger operations. There are still some smaller growers but certainly nothing like there once was.”

A challenging few years has led to fewer meetings but a new executive committee has now breathed some new life into the association, as the next generation starts to come through.

“It’s not economic for people to have smaller orchards anymore so when growers started buying neighbouring properties, our numbers reduced.”

Each area within Central Otago has its own slightly different issues, “so we see the value of maintaining these associations to have a voice,” Sam said.

Both the Teviot and Ettrick Associations have been involved in setting up the Teviot Valley Rural Community Hub, which has been providing a mix of events and wellbeing-related initiatives focusing on local fruit growers and their staff.

They now even employ a part-time coordinator to drive local efforts, and Sam said the Teviot Association is also planning to provide more education opportunities with the aim of promoting fruit growing as a sustainable career opportunity.

Back in Clyde, before the CFA’s successful annual golf tournament that raised enough money to shout 72 Hawke’s Bay orchardists a night out, it also teamed up with the local school to sell fruit.

Clyde School packaged up 5kg boxes to sell within the community, and the association raised \$2000 to send north. A small contribution in the scheme of

things, but also a generous contribution from just a handful of growers.

The Hawke’s Bay Fruitgrowers’ Association (HBFA) general manager Dean Smith said there was a lot more to the gesture than just the cash. “It’s about the narrative behind it, that is more important.”

He said it was really well received and was quite moving, “There was this collegial mindset about helping each other out. We are very very grateful and it won’t be forgotten.”

The HBFA with its cohort of engaged committee members has been able to advocate for its members during these tough times, and Dean said they just want to add value.

“There will come a time when others may need us in other areas, and we can return the favour.”

The organisation is 125 years old next year, but despite having a strong 160 members, it too has dwindling numbers.

Run on a different model having been bequeathed funds many years ago, the association owns three commercial buildings and the rent resources its office.

He acknowledges that others around the country like Central Otago rely solely on volunteers and are at risk of losing that structure.

“Numbers are declining because of the corporatisation of the industry,” he said.

But the smaller community fruitgrowers associations in Teviot will maintain their strong community spirit, and Clyde will keep running its annual golf tournament.

Because it brings mum and dad orchardists together.

And because you just never know when another crisis will hit and when support is needed. ●



Hawke's Bay Fruitgrowers' Association president Brydon Nisbet and Clyde Fruitgrowers Association member Dennis Paulin of Denny's Orchard catch up at Mission Estate winery



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Buying their own trucks meant JRP Citrus did not have to rely on other operators to manage a steady stream of fruit, Warwick Paulson says

“I’ve never seen it like this”

After a lifetime in the business, Warwick Paulson and his grower clients are working through the most challenging citrus season he’s ever seen. But, he tells KRISTINE WALSH, it’s going to get better.



It’s like a ‘tale of two cities’ at Warwick Paulson’s orchard, just 12 kilometres from the centre of Gisborne.

Apart from repeated washes of surface water, all looks relatively normal at the 20-hectare farm established by his grandparents 80 years ago.

Over the stopbank by the Waipaoa River, though, the 50 part-leased hectares he uses mainly for stock still shows signs of the metres of water that rushed through during Cyclone Gabrielle. Troughs that weren’t blasted over remain full of silt. And any fences not smashed wear garlands of muddy debris.

“At the moment that land is pretty much a write-off,” Warwick says. “It’s so wet we just can’t get in to do any repair work.



“So we’ve definitely lost a year’s income plus any reinstatement costs, but we hope that by spring it will be dry enough to get down there and get stuck in.”

Until then he has plenty to keep him busy on the parts of the property that house one home for his family and another for his parents; his orchard; and the packhouse that has been in full swing handling the season’s citrus crops.

At his home orchard - Terrace End Farms - Warwick grows a mixed bag of lemonades, Satsuma and Encore mandarins, limes, Meyer lemons, and Navel and Valencia oranges, with more mandarins and oranges at a recently-purchased 5ha holding a few kilometres down the road.



Warwick grows citrus, feijoas and persimmons to keep things diverse

Warwick Paulson was processing his own Navel oranges by early July but says there was less Tag 1 fruit than he would have liked to have seen

He also works with up to 40 other growers – from hobby farmers to commercial operators – packing and marketing their fruit under the trading name JRP Citrus.

But after two cyclones, relentless wet weather and three States Of Emergency this year alone, Warwick admits it's been hard going for most, if not all, of them.

"I've always considered myself lucky to have this great, dry orchard but not this year, I've never seen it like this. You look down the rows and from one end to the other is just water and as soon as it gets the chance to drain away, along comes the rain."

Warwick is optimistic the region's hardy citrus plantings will survive and that next season will be better, but for now he and his partner growers are just doing the best with what they have.

“

It's been a series of events that have taken their toll

But it's been tricky, he says.

"Our last major weather events (June and July) came in the middle of the Satsuma and lemon harvests, and right on the cusp for Navels, so we've had to work hard to keep clear rot and brown rot out of the packhouse.

"That has meant more losses and more money spent on things like selective picking, but it's important we only pack clean fruit to keep up consumer confidence."

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It's all about family... Warwick and Kirsty Paulson (left) named their JRP Citrus business after their children (from left) Casey (6), Rylee (15), Pieta (12) and Jamie (18)

Challenges presented by Valentine's Day's Cyclone Gabrielle certainly haven't helped, adds Warwick.

"Some of our growers are on town supply so they couldn't get their protectant sprays on," he says. "And even for those who could, the rain would just wash them off before they had time to do their work so we've seen stressed trees just aborting their loads.

“
I've always considered myself lucky to have this great, dry orchard but not this year



"It's not just been one big event. It's been a series of events that have taken their toll on the season and it's my gut feeling that it will continue with other products throughout the year."

Despite those challenges, Warwick is optimistic most trees will survive and the current issues will drop away as growers go into a - hopefully - drier spring.

"The way I look at it is that we're in damage control. Right now things aren't looking great, so it's about thinking outside the square and finding the solution for that moment in time."

Warwick Paulson says his decision to establish his own packhouse and marketing arm - along with a

supporting trucking company - is an extension of the 'out of the box' thinking he saw in his father, and his grandfather before him.

After his grandparents Alfred and Violet bought the original property in 1943 they focused on growing maize, a crop increasing in demand at the time.

"Then after my parents (Peter and Yvonne) married in 1966 they effectively took over farming the land and as we got older we all worked with them, after school and every holiday."

Peter also leased extra land to accommodate his many ventures from growing maize, grapes and tamarillos to rearing racehorses, sheep and bobby calves.

"Everything he did came to fruition in stages, so the work - and the income - was spread throughout the year," says Warwick.

"That was what he was thinking in 2000 when I moved back home to work with him. We ripped out the grapes and started planting citrus to established a really diverse group of products that came on stream at different times."

Even then the Paulsons were packing and selling their fruit themselves. Warwick and wife Kirsty also grew their own family with four children - Jamie (18), Rylee (15), Pieta (12) and Casey (6) - the initials of whose names make up the title of JRPC, the company founded in 2010.

Then in 2015 the couple formally purchased the orchard, three years later building the 1000-square-metre Terrace



Establishing JRP Citrus at Terrace End Farms sees grower/packhouse operator Warwick Paulson continue an 80-year history of growing at the property first purchased by his grandparents

End Farms Packhouse and buying the trucks used both there and in grower orchards.

"We aren't a huge operation but while having the trucks is not a money-spinner, it means we aren't relying on other operators to manage a steady stream of fruit," Warwick says.

"Between the citrus plus some feijoas and persimmons the work is spread to keep the packhouse running all year round. So it's like how my father worked out his plantings all those years ago... Diversity is good for managing both income and labour and because you never really know what your star performer will be, not relying on one product brings real peace of mind."

Warwick says it works because he has surrounded himself with a great team of people, including brother Stewart (who has his own on-orchard consulting company) and the off-shore contacts he has for exporting the lemons.

"Essentially I'm a pretty quiet person, something I need to put aside as I deal with so many people," he says.

"But at the end of the day I'm a grower, too, and my happy places are growing, picking, packing and selling fruit.

"So I know first-hand what is involved in producing a crop, and how growers need to get the best returns possible for their efforts." ●

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Stephanie Cavell received the Mack Nicol award from Summerfruit NZ board member Russell Faulkner. (Photo courtesy of Summerfruit NZ)

Recognition for rescued cherry work

Stephanie Cavell doesn't do things by halves, so it was no surprise to those in the industry when she won this year's Mack Nicol award at the Summerfruit NZ annual conference.

Aimee Wilson

Initially completing a marketing and strategy degree at university, Stephanie said she always wanted to get into horticulture, but wasn't sure how to tap into the industry, despite growing up on a kiwifruit orchard.

Originally from the Bay of Plenty, she started out as the second female to join the domestic floor at Turners & Growers at just 23. Not only proving herself by stepping in and selling out of bananas in one day for a fellow sales specialist, but also breaking the 'ol boys club of selling' in the process.

Those 1am starts certainly paid off and once she got her foot in the door she was away, eventually moving up to the T&G international team. From there she moved back home to the Bay and was asked to join Seeka as an export programme manager.

Stephanie now works as a sales manager for New Zealand Cherry Corp in Central Otago - where big things are happening.

The New Zealand Cherry Rescue Project started back in 2019 and Stephanie has been driving the initiative over the past year. The initiative has an ambitious goal of zero waste in the cherry industry by 2030. From 2024 the initiative will include other summerfruit products such as nectarines, apricots and plums.

The project has over 50 products that are currently being developed, using waste cherries supplied from orchards in the Central Otago region and they are "always looking to expand to other orchards."

The cherry cola, which is a winner amongst consumers



“
Everyone loves the cherry cola. There are actually cherries in it for a start

Citizen and BurgerFuel collaborated on a cherry cola - each can rescues 29 Central Otago cherries from becoming food waste

at BurgerFuel, is a product that has been made in conjunction with the Citizen Collective.

Citizen is a member of the fast-growing global network of food upcycling organisations, the Upcycled Food Association, and first started making beer from supermarket waste bread. They also offer cherry and pomegranate soda, cherry bomb cider, and have a fortified cherry wine on the market as well.

Stephanie strongly advocates and promotes Summerfruit NZ through developing new and existing relationships with processors, manufacturers, importers and retailers that support the idea of rescuing summerfruit for the domestic and international markets.

“
It’s cool to be able to do something extraordinary here in New Zealand


“There is a lot going on. But everyone loves the cherry cola. It’s a really cool product. There are actually cherries in it for a start,” she joked. “Absolutely no comparison to the artificial-flavored American products.”

The Mack Nicol Award was established in 2012 and named after Mack Nicol who had a large influence in the summerfruit sector and also other product groups too. The award is worth \$3000 for the recipient to help expand their knowledge of the summerfruit industry by attending courses or travel overseas.

Stephanie was pretty stoked with her award, “It was great to be nominated and pretty unreal to be awarded the Mack Nicol award this year.”

“It’s cool to be able to do something extraordinary here in New Zealand and to be able to be given a capacity to do the best we can for the environment for future years to come - I stand by the notion of ‘He waka eke noa’ - we are all in this together.” ●

NOTIFICATION OF RATE OF LEVY



The following rates were confirmed at the Summerfruit NZ AGM held on Friday 30 June – both levy rates remain unchanged:

The levy rate for the Commodity Levies (Summerfruit) Order 2020 for the 2023-24 year shall remain:

1.5% (plus GST) for peaches, nectarines, plums, apricots and the hybrids thereof;	0.75% (plus GST) for cherries; and	0.5% (plus GST) for processed fruit excluding fruit sold to Heinz Wattie’s Ltd for processing
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The Biosecurity (Readiness and Response—Summerfruit Levy) Order 2019 rate shall remain at 0.05% for summerfruit.



Evan Heywood (orange) and Golden Bay Fruit's assistant coolstore manager Tiitii Apineru with fruit ready to go

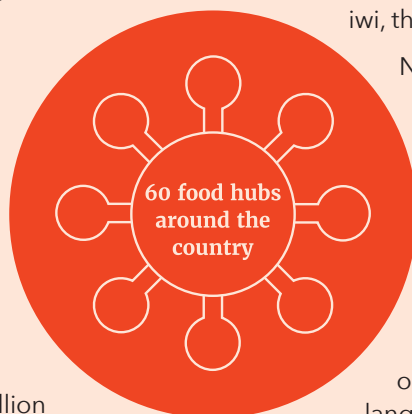
Gathering surplus produce for those in need

The New Zealand Food Network (NZFN) wants to establish a national platform that can estimate surplus produce each year and redistribute it to those struggling to put food on the table. ANNE HARDIE speaks to some of the grower donors, Golden Bay Fruit and T&G Fresh.

NZFN chief executive Gavin Findlay says about 30 percent of fruit and vegetables never get to market, mainly because most consumers will not buy less than perfect. He says it is a waste for growers, retailers and manufacturers, a huge environmental problem in landfill, plus socially wrong when many Kiwis need help with food.

The network with the support of its partners has redistributed about 3.8 million kilograms of fresh produce from growers, wholesalers, retailers and manufacturers since its inception three years ago. It now supports almost half a million people (9.2 percent of the population) through

more than 60 food hubs around the country, plus another 110 entities such as city missions, Salvation Army and iwi, that provide food to people in need.



Now it is working at developing a platform using technology from overseas that enables growers through to retailers to register their estimated surplus produce so the network can plan how it can redistribute or upcycle it into something like sauces or soups for Kiwis who need it.

"If we can get the whole country working on the same platform and talking the same language, using the same type of data, then we have a much clearer picture of the scale of the surplus.

“Across products, regions and over time we can build up a picture of understanding. So, in a wet year this is going to happen, in a dry year this is what is going to happen and in a fantastic growing year this is what is going to happen. That would be the long-term vision to really understand what the surplus is.”

Growers can only give a guesstimate because he says there are always the complete unknowns such as Cyclone Gabrielle and Covid-19. During the latter, the network received 165 tonnes of surplus tomatoes over a seven-week period because it was a year of “fantastic” yields and demand dropped due to the pandemic.

His goal now is to get in front of as many growers, manufacturers and processors as he can to show them how NZFN can be a solution to their inevitable surplus.

“It needs to be part of the DNA of a business because you know you are going to have surplus. Let’s not hide it. It’s not a sin when a consumer has a fickle reaction to a colour of a product and goes, nah I don’t want it. Let’s have a solution for it.”

He recognises that harvesting produce that is not saleable can be a cost to growers which is why he wants to use technology to instigate a national gleaning programme (collecting leftover crops). Israel already has technology that growers use to estimate the yield, sales and surplus of a crop. An army of volunteers is then coordinated to harvest the surplus at no cost to the grower. In New Zealand, Gavin says there is potential to establish a small enterprise to go and glean produce from the paddock or orchard. Because packaging such as bins and crates are a cost, the network intends to stock packaging that can be dropped off to growers as surplus produce is picked up.

Smaller growers can be teamed up with local rescue organisations or food hubs. Having a network from producers through to hubs and transport means there is the ability to coordinate different groups, he says.

The NZFN’s existing network enabled it to provide food to emergency shelters during Cyclone Gabrielle and the Auckland Anniversary floods before even the National

Emergency Management Agency and Civil Defence because he says those organisations had to wait until a National State of Emergency was declared.

Directing food to where it is desperately needed is only one of the reasons for redistributing surplus. He says another crucial reason for doing something with surplus food is its environmental impact when it ends up in landfill if it is not sold at retail. If all the food waste dumped into landfill around the world was described as a country, he says it would be the third largest emitter of greenhouse gases on the planet behind China and the United States.

“It’s not a sin when a consumer has a fickle reaction to a colour of a product

He says NZFN can help growers maximise the value from a product they grow by purchasing surplus produce.

Purchasing surplus is one of the network’s three food sources. One source is surplus that is gleaned or delivered to redistribute, a second is the intentional giving (donations) of often grade-one produce, while the third source is through the network’s ability to purchase surplus produce through government funding. That can provide a small amount of revenue to growers to make it worthwhile harvesting.

The government is NZFN’s major funder, ever since Covid-19 came along and the network sought its involvement to deal with the social effects from the pandemic. It also has quite a list of major donors from food manufacturers to retailers on board. One of Gavin’s tasks is to work out how the network would continue to operate and grow if the government’s funding was not there any longer, though he is hoping that will not eventuate.

“The reality is a country should have an interest in feeding its people. We are the last westernised country in the world to actually put money into helping feed the people.”



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New Zealand Food Network's warehouse manager at the Christchurch depot, Kulwinder Singh Maan, with Golden Bay kiwifruit



Donated apples at a New Zealand Food Network depot

The NZFN has been in full operation for three years and has a base target distribution of about 28 tonnes of surplus per day every working week of the year. Since its inception it has redistributed 20,000 tonnes of food.

Gavin says the network is still looking at how it can do things better, how it can get more product and where it can add value.

Golden Bay Fruit in Tasman is one of the grower donors, supplying fresh fruit for several months of the year to NZFN. The company is now into its second year supplying the network and this year it is donating between 3000 and 7000kg of apples and kiwifruit over a five-month period.

Director Evan Heywood says that when the company heard about NZFN, it wanted to be involved.

"We're helping out those people who can't afford to buy fruit at the supermarket and it's a healthy option."

The donations are grade one-and-a-half fruit which is usually sold on the local market and is available from February through to August or September when it runs out of the season's fruit. Every week on a given day, the network organises a truck to pick up a set amount of bins from the Motueka packhouse site to take to its central South Island hub in Christchurch. From there, it joins produce to be redistributed across dozens of food hubs around the island.

"Every week we send eight to 12 bins of fruit and they send us bins that we fill up with fruit again."

He says the network does an extraordinary job distributing donated food to where it is most needed.

T&G Fresh became a foundation partner with NZFN as it recognised the valuable role it would play as a national bulk food network to New Zealanders. General manager sales and marketing Anthony Joseph says they knew that at certain times of year, because of changes to harvest or demand, there was a surplus of produce from within the business as well as from its network of independent growers.

Since then, T&G channels all of its surplus fresh produce to NZFN and together with its network of growers has donated more than two million kilograms. When donated volumes are low or in short supply, T&G purchases additional fruit and vegetables at wholesale prices to donate to NZFN, including the lead-up to Christmas and following Cyclone Gabrielle.

Anthony says donations are made up of surplus stock such as harvest volumes exceeding orders or when produce has a broader specification which does not suit customer requirements, or orders cannot be delivered because of weather or transport issues. He encourages all growers with surplus produce to get in touch with T&G or NZFN to find out how the produce can be captured and donated to Kiwis in need. ●



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www.nzfoodnetwork.org.nz

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TECHNICAL

THE LATEST INNOVATIONS AND IMPROVEMENTS



Ground cover
Page 43



Chicory - *Cichorium intybus*

Suppressing weeds in a pipfruit orchard 'weed spray strip' with perennial ground cover

Can low growing, perennial plants be established as a ground cover in pipfruit orchards to replace the traditional 'weed spray strip' management practice?

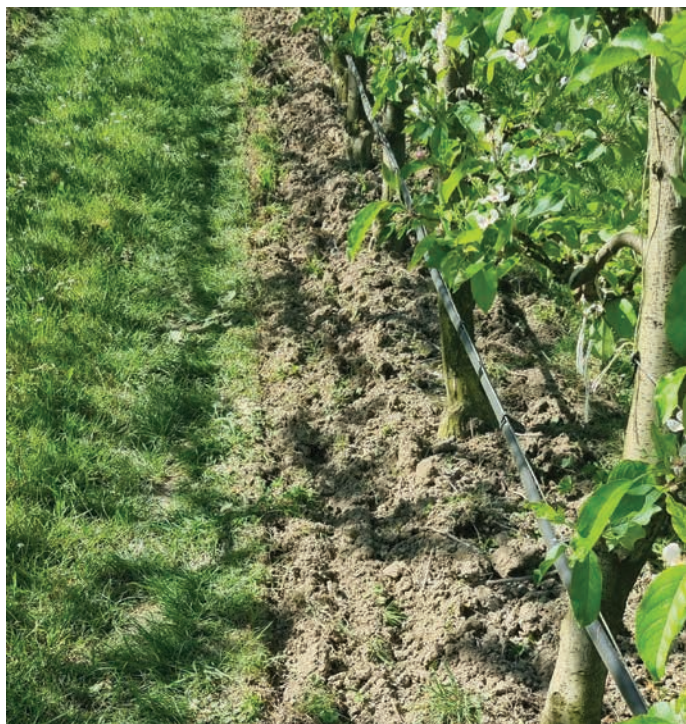
Aimee Lister : AgFirst Consultants Nelson

In this trial, funded by the Rural Professionals Fund and Our Land and Water, seven low growing perennial species (birds foot trefoil - *Lotus corniculatus*, narrow leaved plantain - *Plantago lanceolata*, common yarrow - *Achillea millefolium*, chicory - *Cichorium intybus*, alyssum - *Lobularia maritima*, sheep's burnet - *Sanguisorba minor subsp. Muricata* and strawberry clover - *Trifolium fragiferum*) were established in the 'weed spray strip' on a Nelson pipfruit orchard.

Two plantings were undertaken, one in spring and one in autumn to determine the ability of these species to establish and thrive in this area of low light, with poorly structured,

bare soil. Testing showed this soil also had signs of long-term herbicide use (low organic matter, low soil biology and unfavourable soil organisms and weeds present).

Our trial found that six of the seven species germinated and established well in spring. Only alyssum had weak and yellowing continued growth after good germination in spring, meaning weed species were able to establish and cover more ground than this species. All other species covered the ground to varying degrees that helped to compete or shade out weed species, withstood foot traffic during harvest and continued to thrive with little to no intervention and not become an orchard pest plant.



To ensure good seed to soil contact, the narrow weed spray strip was tilled



It was important to cultivate close to the tree trunks while leaving the permanent grass sward undisturbed

Introduction

It's not common for any species to be kept for long in the 'weed spray strip', an area of ground under a pipfruit canopy that is traditionally kept clear of any vegetation through herbicide use.

In more recent times, cover crops have been discussed as a solution for good soil health and are a big component of the regenerative agriculture movement. Keeping the ground covered with a living crop, year-round is said to provide erosion control, help retain soil moisture, increase organic matter, provide plant exudates to feed soil biology, and sequester carbon into the soil.

“

Cover crops have been discussed as a solution for good soil health

- The *primary* focus of this trial was to establish perennial species in this weed strip area and determine the practicability and efficacy of this management practice. Are we able to replace the need for herbicide under trees?
- *Secondly*, was to begin understanding the effect these plants may have, if any, on tree health and crop quality. Do these plant species have any effect on fruit quality and tree health in the long term?
- *Thirdly*, we wanted to understand the effect these perennial cover species may have on soil health and biology. Is keeping ground covered year-round a solution to soil health issues?

Method and trial details

Location

The trial was established on a mature 2D Breeze orchard, in the Brightwater region of Nelson. The block is on M9 rootstock, at an intensive planting of 2.5m x 1.4m. Reasons for site selection included:

1. The block is mature, we did not want to interfere with any young trees.
2. The block is two dimensional, to enable maximum sunlight to be able to reach the orchard floor, giving seeds the best possible chance for germination.
3. The block soil type is Oronoko - f, a deep, well-draining loam over sand. This was important to enable the species to have the best possible chance of germination, without any soil type extremes.
4. The grower involved was already interested in this trial concept and so was supportive from the beginning.

Ground preparation

To ensure good seed to soil contact, the soil was tilled. The weed spray strip in this block was narrow (0.5m at its widest) and therefore a difficult area to fit machinery into. It was important to cultivate as close to the tree trunks as possible, and out into the interrow space to cover the entire 'weed spray strip' - without disturbing the permanent grass sward. A local viticulturist provided a row hucker tractor attachment, that was rear mounted, with hydraulic movement to get close to the trees as needed. The row hucker had three tined discs on an 80-degree angle that tilled 8cm into the ground. This depth was enough to establish a seed bed, without damaging any tree roots that were close to the surface.



A local viticulturist provided a row hucker tractor attachment to get close to the trees as needed

Spring tillage of this area was undertaken during flowering and there were no visible symptoms of tree stress or flowering impact. Three passes were needed in spring to break up the dry soil into workable clods. In autumn only two passes were need (soil moisture was ideal).

“
We wanted to trial each species individually to compare specific characteristics

Spring sowing

The first sowing was undertaken at the end of October 2022, with the soil warming up and rain still in the forecast.

Species	Sow rate
Plantain	10g/m ²
Sheep’s burnet	16g/m ²
Birds foot trefoil	14g/m ²
Common yarrow	14g/m ²
Chicory	10g/m ²
Strawberry clover	10g/m ²
Alyssum	14g/m ²

Figure 2 Sowing rate from the spring sowing

Each species was hand sown individually, at a heavy rate to ensure good germination and is not ‘usual’ sowing rates for normal practice. We wanted to trial each species individually to compare specific characteristics and understand any potential impacts on soil and tree health to an individual species.

Once sown, the workable clods of soil were broken up and raked by hand to ensure seed was lightly covered. Ideally, this would be done by machinery that could till then broadcast or air drill seed, then lightly rake and/ or roll soil, however the work area is narrow, and this custom piece of machinery does not yet exist.

Sprinkler irrigation for the ground cover planting was set up, however only used twice during spring germination. Whole orchard irrigation was used as per the normal schedule.

Autumn sowing

Species were sown on 26 April at the same rates as the spring sowing treatment, however the germination of these plots was poor. These trial plots were not raked over as the spring plots were, perhaps resulting in less seed to soil contact, and therefore poor germination. This reinforces the fact that sowing seed in the weed spray strip requires a decent seed bed, to enable seed to soil contact with the ability to cover the seed.



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TRIAL SPECIES RESULTS

1st



Sheep's burnet – *Sanguisorba minor subsp. Muricata* and Plantain – *Plantago lanceolata*

These two species had the least amount of weed species present at the end of the trial. They also covered ground the best, creating a low growing ground floor canopy and have not yet encroached into the pipfruit canopy. However, sheep's burnet has a lower growth habit and branches rather than growing straight up, where plantain will continue to grow higher, and its flowers will likely be in the pipfruit canopy.

2nd



Chicory – *Cichorium intybus*

Chicory covered the ground very well, with little weed incursion at the end of the trial period and well covered orchard floor in its trial plot. One issue with chicory over time, is that it will grow taller, up into the pipfruit canopy.

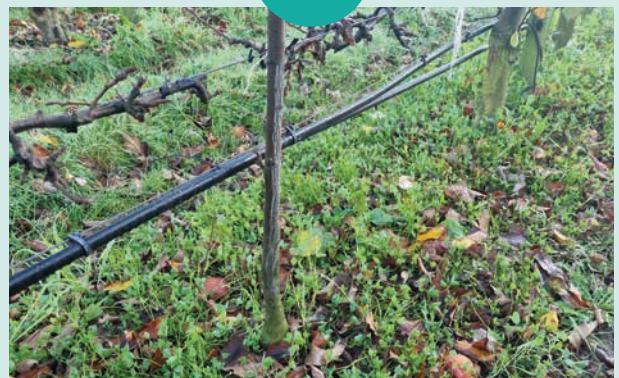
3rd



Trefoil – *Lotus corniculatus*

Trefoil had a decent ground covering ability, but its small leaves and wiry stems meant that more light could penetrate its canopy despite being densely sown and well spread over the trial plot. If this species can come away and persist next spring, it may cover the ground better next season.

4th



Clover – *Trifolium fragiferum*

Clover was the only species to have rabbit damage, first as the seedlings were young, and in June many of the tops (and perhaps the flowers) have been chewed off. The species is persisting well, and where it is a dense mat, it covers the ground well and can suppress some weeds. As the foliage is eaten, more light can reach the ground.

5th



Yarrow – *Achillea millefolium*

Yarrow was difficult to sow as it was very light seed, however in heavily sown areas where the seed germinated well, it has covered the ground exceptionally. Its prostrate growth habit means the small leaflets create an entwined mat which blocks out a lot of light from the orchard floor, excluding most weeds. Where the seed was not as well spread, weeds have persisted and have grown up through the trial species.

6th



Alyssum – *Lobularia maritima*

Following a quick germination and establishment period, once the days got hotter and drier, the alyssum seedlings yellowed. At the end of the trial period, the species is insignificant in its plot. As a species it could have merit in a mix, with its quick flowering useful for pollen/ beneficial insects, but as a stand-alone trial species it was poor.

Conclusion

This trial has shown that we can establish spring sown, perennial ground cover species in a 2D apple orchard's 'weed spray strip'.

The species' ability to establish quickly and cover the ground before weeds were able to overtake depended on:

- How well it was sown, which greatly affects consistent germination. The creation of a 'seed bed', and lightly covering the seed was imperative, for good seed to soil contact.
- The species' growth habit - prostrate or 'leggy' species that collapse over, and entwine to create a mat, and/or have a prostrate habit, with dense foliage gave better results with less light reaching the orchard floor.

This tells us that the best way to ensure success of ground cover species in this area of the orchard, is to have the machinery to create a seed bed, and to sow seed efficiently. Chosen species should have a growth habit that can create a 'mat' of dead and living foliage and/or a prostrate habit that can cover ground well, with dense foliage.

Effects on pipfruit?

We measured vigour growth, fruit size at harvest and fruit quality at harvest, and determined the trial species' impact on the main crop (pipfruit) was minimal to none this year. We predict that three or more years will be needed to determine any direct issues that may arise between with tree health or fruit quality, and the established ground cover species.

Effects on soil health?

We collected soil samples pre and six months post sowing to see if there would be any changes in soil fungi and bacteria levels. Although within a short period of time, we did see some changes in active fungi levels, with the biggest changes found in the sheep's burnet, chicory, and clover plots. These tests can be repeated going forwards, and as sampling types improve over time, we can look into carbon sequestration and organism DNA sampling to understand the types of organisms present.

The biggest hurdle found in this trial has been the ability to source specialised machinery for cultivating and sowing under/next to a canopy. In a 2D block, we can look into viticultural solutions, that are made to work directly next to canopies. In orchards with wider, 3D canopies it would be much harder to find a cultivating solution. ●

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2023 so far: New Zealand's record-breaking weather

Ben Noll : National Institute of Water and Atmospheric Research (NIWA)

NIWA analysis last month revealed that, at only halfway through the year, some parts of New Zealand had already recorded more than a year's worth of rain.

The first half of the year was the wettest on record for several areas in the northern and eastern North Island.

For many, the results probably won't be a surprise. Those living in Northland, Auckland, the Coromandel Peninsula, Gisborne, and Hawke's Bay have dealt with a constant barrage of sub-tropical lows, atmospheric rivers and ex-tropical cyclones, which caused copious amounts of rainfall. It has been quite relentless.

On the rainiest end of the spectrum, Kaikohe in Northland received over 130 percent of its normal annual rainfall from January-June. On the driest end of the spectrum, Waimate in South Canterbury received just 33 percent of its normal annual rainfall from January-June.

In terms of temperature, January-June 2023 was 1.1°C above average, according to NIWA's seven station temperature series which began in 1909. This is the second warmest such period on record. Only 2016 had a warmer January-June.

What was behind the wet and warm?

La Niña: Even though it officially ended earlier in the year, the lingering influence of La Niña contributed to an air pressure pattern that brought more sub-tropical, north-easterly winds, atmospheric rivers, and increased the risk for ex-tropical cyclones.





Southern Annular Mode: Persistent "blocking" high pressure near the South Island enabled rain-bearing weather systems to linger for long periods of time, sometimes affecting the same regions day after day.

Marine heatwaves: Frequent air flows from the north-east, reduced westerly winds, high pressure near the South Island, and climate change enabled this driver to bring warmer temperatures and increased moisture availability to the New Zealand region.

Climate change: The impact of climate change left a strong imprint on the record warmth and exacerbated the extreme rainfall events during the first half of the year.



CONTRIBUTORS TO THE WET AND WARM WEATHER

-  LA NIÑA
-  MARINE HEATWAVES
-  SOUTHERN ANNULAR MODE
-  CLIMATE CHANGE

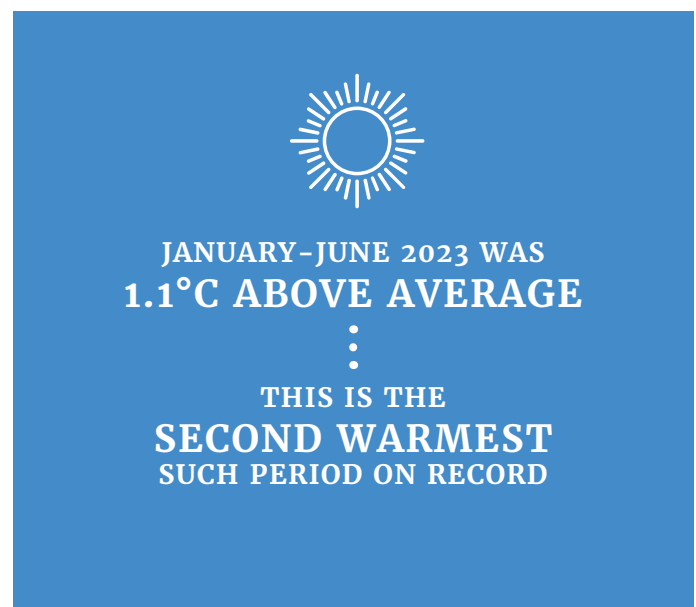
Record rainfall in the first half of 2023

This table shows the 21 locations* across seven different regions that experienced a record wet January-June.

Location	January-June rainfall (mm)	Year records started
Northland		
Waiharara**	973 mm	1956
Kaikohe	2140 mm	1956
Whangārei	1526 mm	1943
Auckland		
Leigh	1234 mm	1967
Warkworth	1525 mm	1972
Whangaparāoa	1114 mm	1946
Albany/North Shore	1319 mm	1966
Whenuapai	1443 mm	1943
Western Springs	1280 mm	1948
Māngere	1152 mm	1959
Pukekohe	923 mm	1944
Waikato		
Whangapoua**	1552 mm	1999
Rings Beach**	1400 mm	1986
Whitianga	1661 mm	1961
Karangahake Gorge**	1451 mm	1981
Bay of Plenty		
Rotorua	1435 mm	1963
Gisborne		
Mokairau**	1196 mm	1947
Gisborne	1230 mm	1937
Hawke's Bay		
Napier	984 mm	1870
Waipawa	668 mm	1945
Wellington/Wairarapa		
Waiawa**	898 mm	1968

*Climate stations or climate station groupings in operation before the year 2000

**Manual climate stations where June data was not available at the time of writing, but the January-May total was high enough to break the record for the first half of the year.



Looking ahead: outlook to September

El Niño is emerging in the tropical Pacific and is expected to bring notably different weather patterns to the country during the back half of the year compared to the first.

With a developing El Niño, air pressure is forecast to be above normal over the Tasman Sea, leading to more southwesterly quarter winds than normal across the country for the season as a whole. Historically, this has increased the chance for drier-than-normal conditions in eastern areas of the country and caused more rain in the west.

The developing El Niño is expected to result in a lower likelihood of tropical moisture plumes, such as those that frequently affected the country during the first half of this year.

Temperatures are about equally likely to be near average or above average in all regions. The potential easing of above average SSTs and a reduction in northerly air flows are expected to make for a season that has less frequent spells of above average temperatures. Short-but-sharp cold snaps are also likely.

Soil moisture levels are most likely to be near normal in all regions.

In summary, a change in the climate driver means a change in the wind, and ultimately, a likely change in rainfall patterns. The weather is likely to be quite different to what we've been living through in recent times. ●

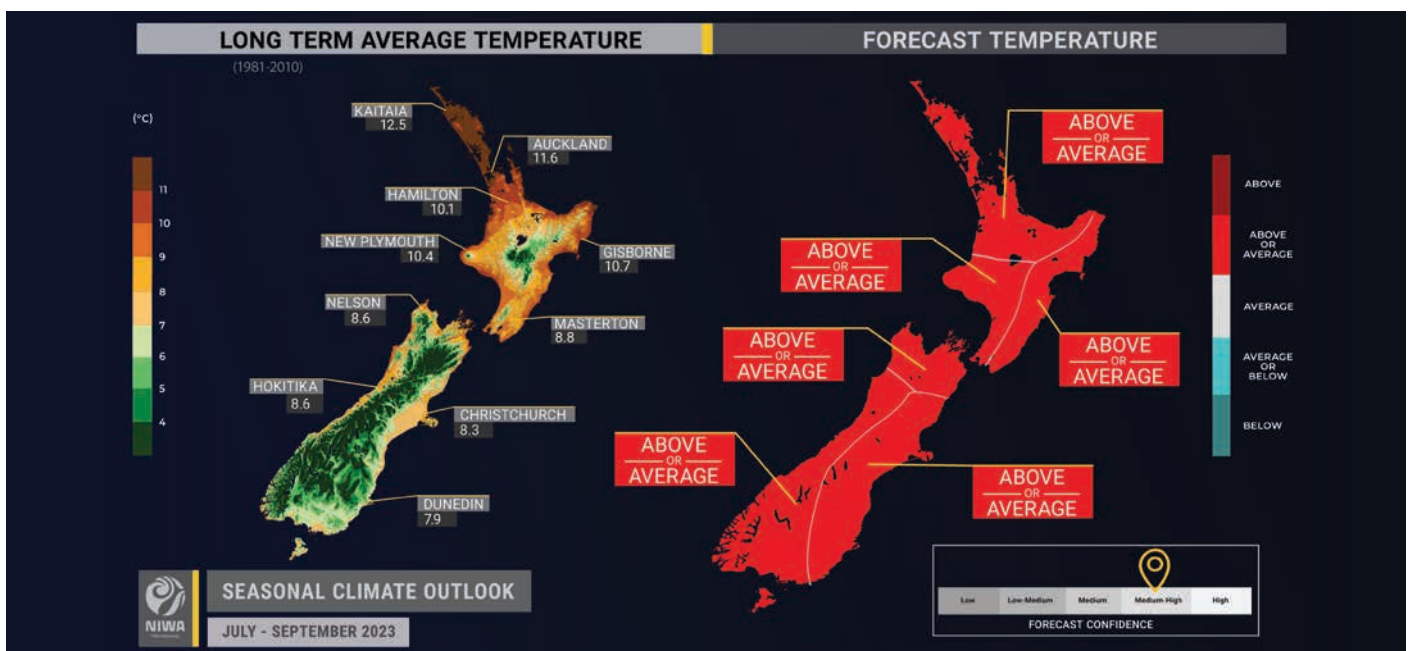
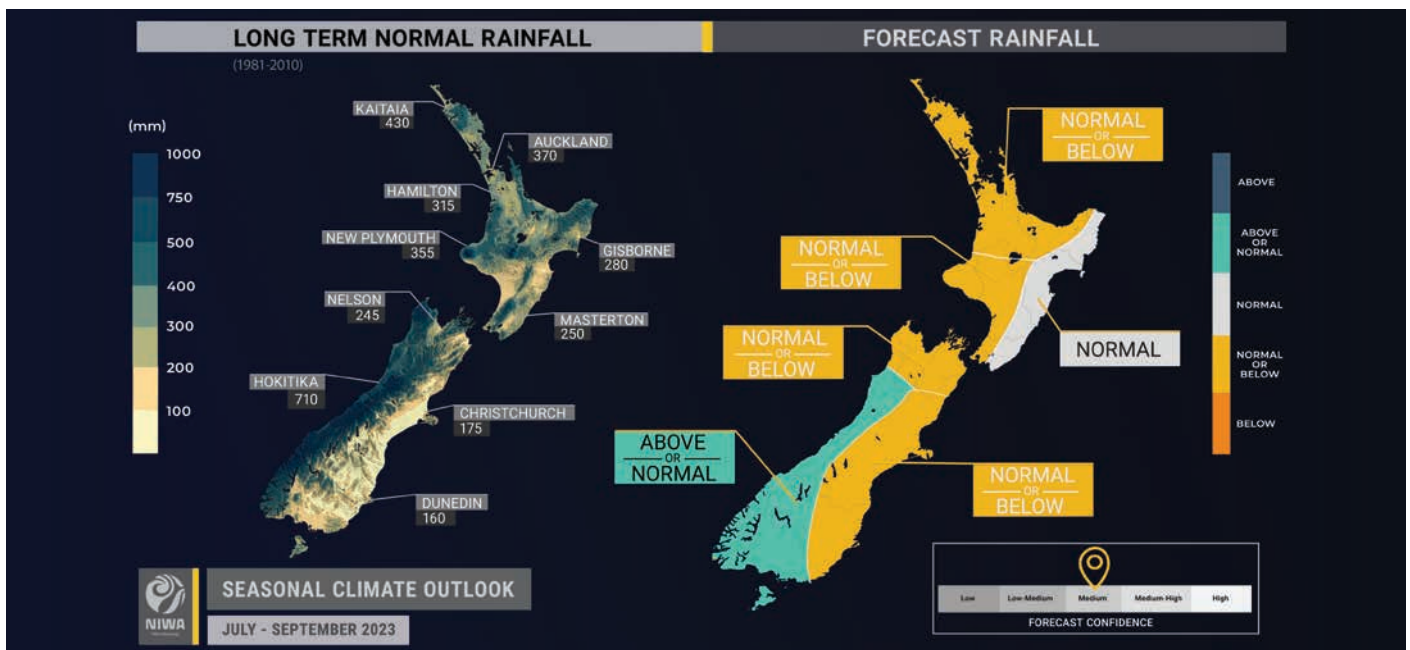




Figure 1 Sentek® soil moisture monitoring with telemetry installed in grower Allan Fleming's kiwifruit orchard, Naturzart, which is located in Te Puke

Soil moisture monitoring – 'your eyes below ground'

While growers in the south were battling drought, growers in the north suffered a devastating season of unprecedented rains and flooding, with little reprieve. Soil moisture was the common theme and keeping moisture levels optimal in the root zone presented issues for most growers throughout the country.

Lindsay Garneau : Fruition Horticulture (BOP) Limited horticultural consultant

Orchard management is a complex task requiring careful attention to many factors and this year's weather presented additional challenges to growers across the country as we faced our third consecutive year in La Niña, an uncommon occurrence referred to as a 'triple dip'.

This was a significant contributor to a unique set of climate drivers that saw unusually wet and turbulent weather in the northern and eastern parts of both the North and South Islands. Auckland recorded 5.5 times their usual summer rainfall.¹ Meanwhile the western and southern regions experienced above-average sunshine and dry conditions. We saw devastating effects from ex-Cyclone Hale and Cyclone Gabrielle, while many southern regions experienced the effects of drought.

Sometimes it can be easy to place emphasis on what we can see above ground, especially in extreme climatic conditions, but ultimately our production is rooted in what happens below ground. Without enough moisture, plants cannot carry out their essential processes and production may suffer if this occurs during specific periods, or plants may even die. Conversely, we may want to impose a water-deficit stress in order to manipulate fruit quality, as is sometimes practised in vineyards during the ripening period to increase flavour, colour and aroma. You can certainly have too much of a good thing though! When soil is saturated there is not enough oxygen for the plant roots and the soil biology to remain healthy. In extended periods of saturation, photosynthesis ceases (this can happen within just five hours in the case of some trees²), plant roots will begin to

Summed soil moisture graph

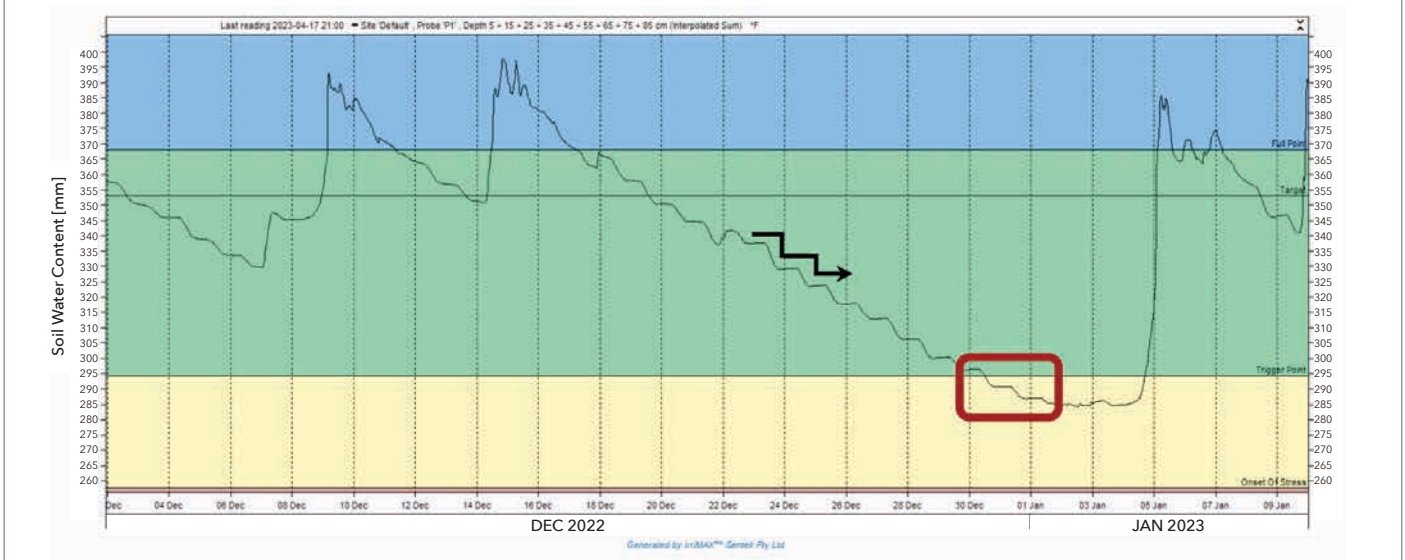


Figure 2 A summed soil moisture graph from Irri-MAX™ displaying the summed soil moisture readings from a 90cm Sentek® Drill & Drop probe in a Bay of Plenty kiwifruit orchard. This image highlights what we refer to as ‘stepping’

Summed soil moisture graph

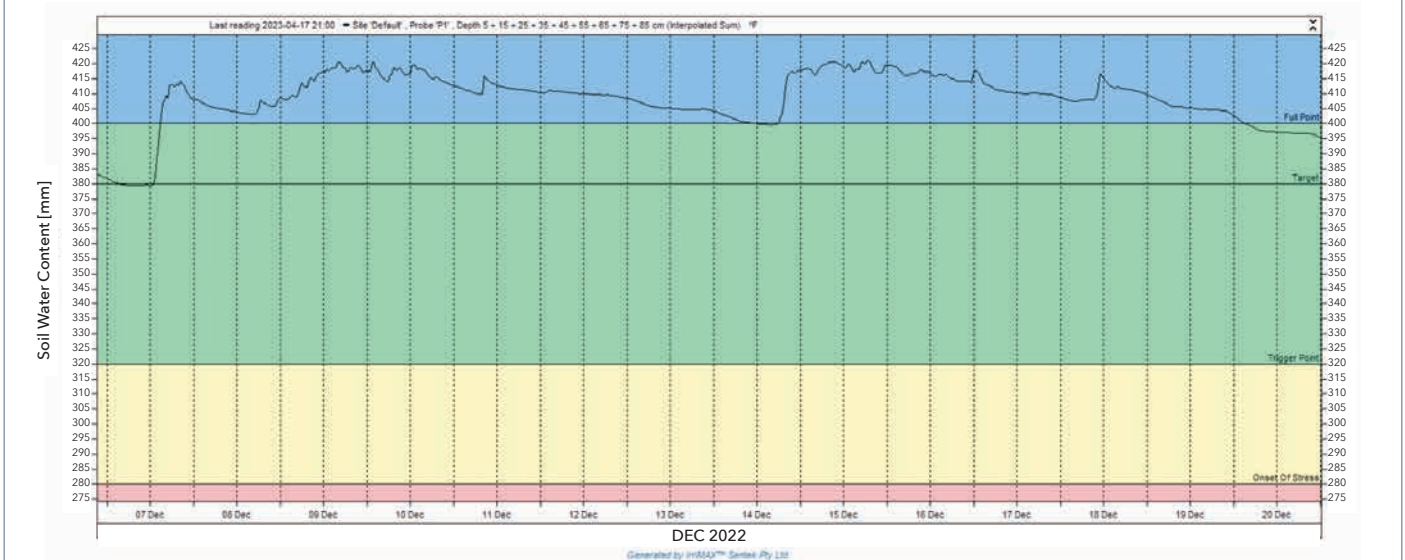


Figure 3 Another example of a summed soil moisture graph from Irri-MAX™. This data tells us that the soil has been saturated for 12.5 days

die back, anaerobic microorganisms will begin to flourish, and pathogenic fungi and bacteria may infect the plants. As many growers in the north are experiencing this year, muddy orchards also pose access challenges to harvesting and maintenance equipment and increase the incidence of compaction and ground surface disturbance.

Soil moisture is a critical component of orchard management and there are a variety of monitoring tools that can give us ‘eyes below ground’ to help inform our management practices. There is also increasing accountability imposed on growers by regulatory bodies to evidence soil moisture management, where these

tools can help. Get in touch with your local horticultural consultancy or irrigation supplier if you would like to further discuss which option would best fit your needs.

Monitoring is undoubtedly an effective tool with regard to irrigation scheduling for a wide range of crops. Orchard manager, Lyn, discovered this when she installed four Sentek® Drill & Drop probes on a 14-hectare kiwifruit orchard a few years ago. In Lyn’s initial year of monitoring soil moisture, she reduced her irrigation by 50 percent of what was typically used, which meant using only one-third the amount of water in the covered areas of the orchard. The results were impressive come harvest, with the kiwifruit

vines producing significantly better quality fruit and the highest dry matter since Lyn began managing the orchard.

While this year irrigation was the furthest thing from growers' minds in the northern parts of the country, saturation stress has been a real concern for many growers, and monitoring root health while taking action to ensure that the root mass will be in optimum condition to support the plants for the coming season. Some growers have already experienced some plant or root die-back due to wet conditions, however, we won't realise the full impact on deciduous crops like pipfruit and kiwifruit until next season, when the reduced root mass is unable to fully support the budburst.

Soil moisture monitoring can also provide insight into other important functions underground that may be overlooked such as root activity, salinity and temperature, if your sensor is capable of detecting these. Comparing the data can help us to:

- Determine if our irrigation applications are reaching the active root zone
- Analyse how effective irrigation applications are across different soil types
- Determine whether the soil may be leaching or accumulating nutrients
- Highlight rooting barriers
- Visualise any increases or decreases in rooting depth or activity
- Detect potential stress events, such as extended periods of saturation or dry conditions
- Know when soil temperatures are optimum for germination.

Once you have decided on a monitoring option and your equipment has been installed, it is a good idea to engage professional support to help interpret and analyse your data in order to optimise your management strategy. Your supplier may provide consultancy services alongside the product. The Sentek products that Fruition offers use Irri-MAX™, a cloud-based platform which allows you to view continuous soil moisture data in real time and create customised graphs. This is the source of the graphs that I will use as an example to show the depth of information that can be gained from soil moisture monitoring. I won't delve into the complexities of developing an irrigation strategy, but rather focus on what the data can tell you is happening below ground.

At an initial glance, some of the graphs may seem straightforward. For example Figure 2, which is a basic summed soil moisture graph. We might simply watch the moisture level and turn on the irrigation when it drops too low, right? Upon closer examination, we can see a pattern of daily changes unrelated to irrigation. We refer to this as 'stepping' and it demonstrates the fluctuation in soil



moisture in the active root zone associated with the plant's daily transpiration cycle. As the soil moisture levels continue to decline, we notice the 'steps' also begin to display less of a change and eventually flatten out. This indicates the plant is having to work harder to uptake moisture and will begin to experience water-deficit stress if it does not receive water, and eventually will reach permanent wilting point. In contrast, the same type of graph in Figure 3 highlights a saturation stress event spanning 12.5 days in a kiwifruit orchard.

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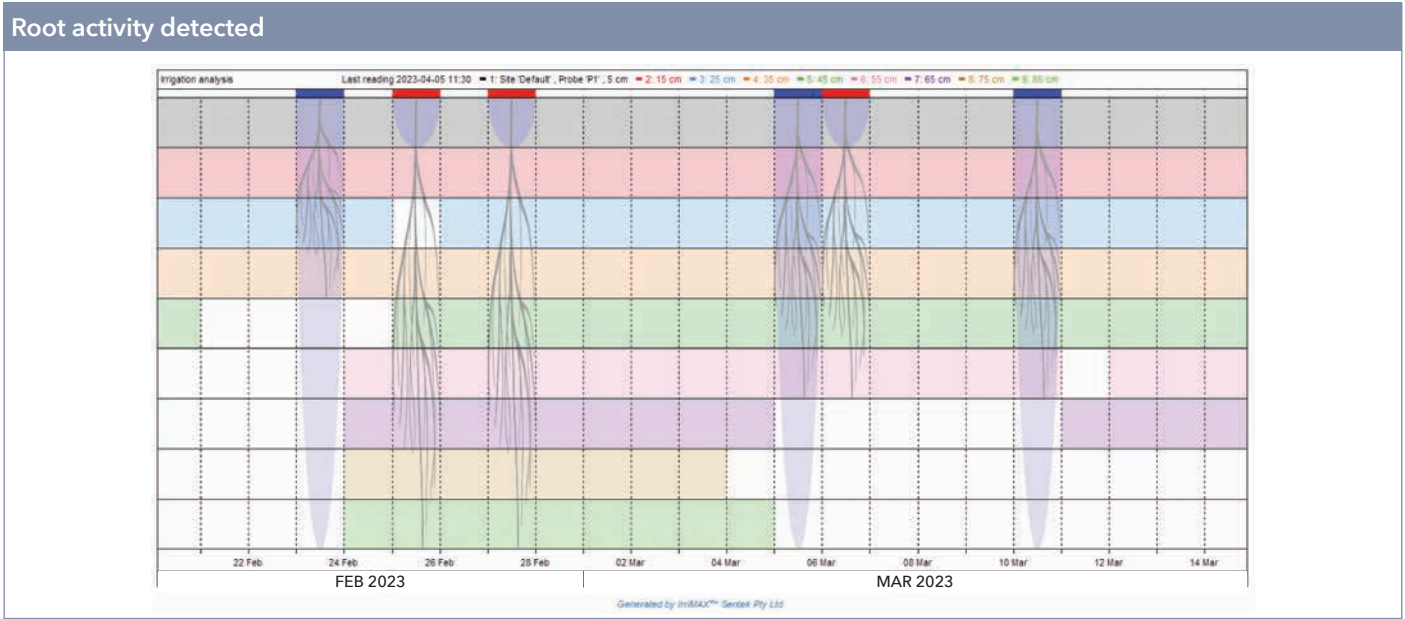


Figure 4 A graph from Irri-MAX™ displaying where root activity has been detected throughout a 90cm measured profile in 10cm slices in a kiwifruit orchard located in the Bay of Plenty. Each shaded bar represents root activity and is colour-coded to each sensor

The ability to monitor root activity during times of stress can help us gauge how our plants are responding. Soil moisture probes using capacitance are able to measure multiple depths simultaneously. The graph in Figure 4 indicates strong root activity throughout the entire measured profile, which is reassuring to see given the concerns around saturation stress and root die-back this season. In this case, the orchard that this data is from is situated on light well-drained and well-managed soils, so the impact of any saturation stress on the roots was minimal.

Both water deficits and extended periods of saturation cause stress to plants, which can have long-lasting impacts on the health of the plant. Actions to avoid both extremes are advised to optimise plant health and production, as suggested in the table.

Actions to Prevent Saturation Stress	Actions to Prevent Water-Deficit Stress
Check the forecast for any significant upcoming rainfall and adjust your irrigation plan accordingly.	Check at the start of the season whether there are any leaks in your irrigation system and ensure you know how much water the system is delivering to your crop.
When irrigating, always keep a buffer between the target level and the soil field capacity in case of rain to reduce the time the soil is saturated. It also helps to mitigate surface runoff and topsoil erosion.	Monitor the weather forecast, including predicted daily ET (evapotranspiration) to know how much water is required by the plants, including understanding the water needs of your crop at specific times in its production cycle (crop factor).

Actions to Prevent Saturation Stress	Actions to Prevent Water-Deficit Stress
Reduce traffic over muddy or saturated soil which will lead to compaction and reduce soil drainage characteristics.	Irrigate before the soil becomes too dry. Otherwise, soil can become hydrophobic, where water is unable to penetrate leading to dust mulch layers or soil erosion.
Encourage healthy soil structure and good earthworm activity.	Increase the water-holding capacity of your soil by adding organic matter such as compost and encouraging a healthy microbiome.
Maintain the appropriate type of ground cover to protect the topsoil, nourish the soil ecology and soak up excess moisture.	Apply mulch where appropriate to help reduce surface evaporation.
Install and maintain drains in areas prone to waterlogging.	Water any young replacement plants separately to target their small root zone.
After prolonged periods of saturation stress, consider reducing the crop load to give the plants a chance to recover.	Decreasing the canopy cover to reduce transpiration area or reducing crop load can help relieve the effects of stress on plants.

Other graphs, such as Figure 5, may seem more complex. Figure 5 is a nutrient movement graph which measures the Volumetric Ion Content (VIC) or in other words, soil salinity. We have added a pane at the top to compare against rainfall events and selected sensors at 15cm, 45cm and 85cm depths to display the levels of nutrients. We can see that there is a significant increase in VIC measured by the 15cm sensor in November following some heavy

Rainfall and the Volumetric Ion Content measured

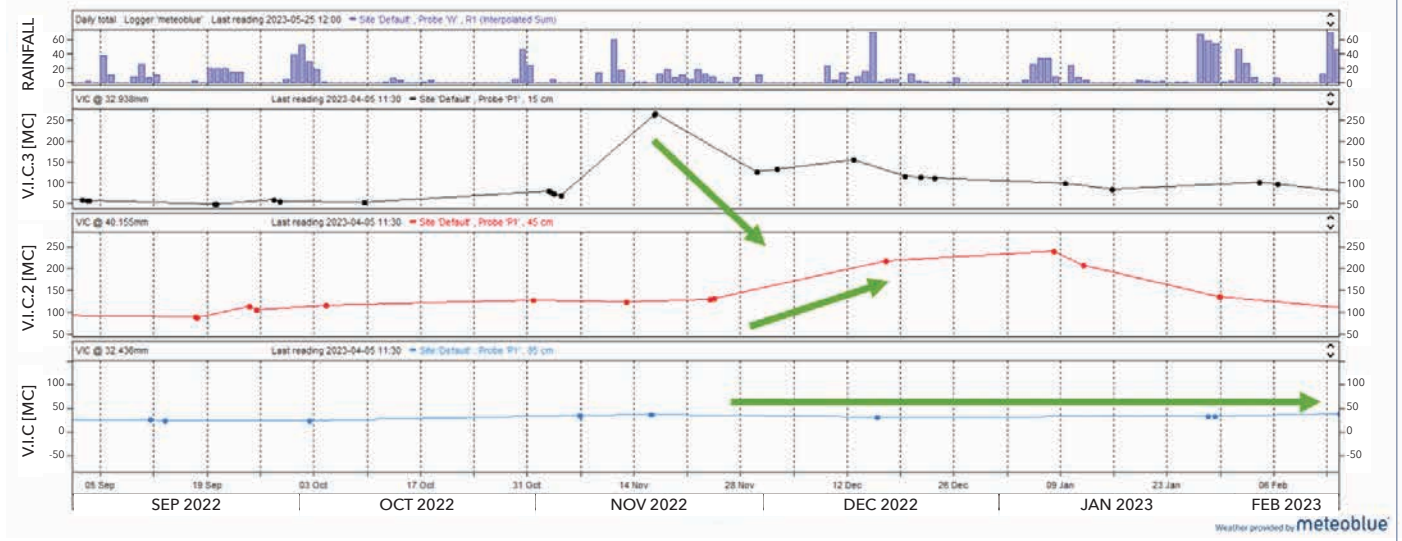


Figure 5 A graph from Irri-MAX™ displaying the rainfall (top pane, provided by Meteoblue) and the Volumetric Ion Content (VIC) measured by the sensors at the 15cm (black), 45cm (red) and 85cm (blue) depths in a Bay of Plenty kiwifruit orchard

rainfall events, which likely dissolved and mobilised an application of fertiliser (typically applied at that time of year) down from the surface. As it continues to decrease in that level at the 15cm sensor, we see a rise measured at 45cm, indicating the nutrients have continued to move down from the upper profile, although as they decrease mid-profile, there is no significant change detected by the 85cm sensor. Despite the frequent and heavy rainfall events that took place over the season, we can gauge that nutrients were not leached from the measured profile and remained within the active root zone of this crop. This is an ideal scenario, and this orchard has followed a similar pattern in previous years. It is great to see that despite the unusually wet and turbulent summer we experienced in the Bay of Plenty, there is still no evidence of leaching.

These are some examples of how soil moisture monitoring can be used to benefit your orchard management strategy.

For seasonal crops such as kiwifruit, apples or grapes, the winter season is a great time to consider installing soil moisture monitoring equipment in your orchard in preparation for the coming season. Remember, you can only understand and manage what you measure and monitor, and soil moisture probes are your 'eyes below ground'. Speak with your local supplier or consultancy advisor today. ●

Fruition Horticulture are New Zealand distributors of Sentek® soil moisture technology, with offices in the Bay of Plenty, Nelson, Marlborough and Hawke's Bay.

- <https://niwa.co.nz/climate/summaries/seasonal/summer-2022-23#:~:text=The%20nationwide%20average%20temperature%20in,series%20which%20begins%20in%201909>.
- <https://nwdistrict.ifas.ufl.edu/hort/2013/09/30/we-had-plenty-of-rain-why-are-my-trees-dying/>

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Saving our soils

Many soils around New Zealand and Australia are becoming depleted by increasingly intensive horticulture practices. According to Allan Dean of Bactivate, an enlightened approach to 'farming the soil' can pay huge dividends in the short term, but even more so in the decades to come.



Wayne Johnston surveying the best crop he has ever grown



The improved soil health that delivered the crop

Allan considers a focus on building a healthy, living soil biology is the key to returning soils to productivity. "Regenerative farming utilising carefully researched soil microbes and a diversity of cover crop components is absolutely capable of returning our soils to optimum health and yields that had been considered impossible. The initial improvements will be detectable in months rather than in years."

The concept of 'farming the soil' brings microbial density and earthworm counts into focus as indicators of healthy soil. Once thought of as 'fringe', significant producers are beginning to research approaches that balance regenerative farming and supplemental nutrients when needed to meet crop demands. "A middle ground approach is entirely feasible and needed to deliver food for a growing world population as well as financial sustainability for the grower," says Allan.

Bactivate's biological inoculants are used to 'help nature on its way'. With the right conditions, microbes will – once introduced – proliferate of their own accord. Biodiversity, cover crops, minimum tillage, and microbe specific probiotics all play a part in optimising soil health and, as a consequence, crop yields.

A demonstration of the power of this approach was achieved in a potato trial over two seasons in the Meander Valley, Tasmania. Supported by McCain Foods, the trial summary can be found at bactivate.nz/research-potatoes/.

Coincidentally, the weather in each of the two seasons was vastly different (2019 was an exceptionally dry season and 2020 very wet, with 50 percent above average rainfall). In both of these very different seasons, the Bactivate trial outperformed the state average yield, and year two showed an increase in yield of 48 percent over year one, which suggests as expected an improving trend in soil health and crop yield performance.

“

Bactivate's biological inoculants are used to 'help nature on its way'

Anecdotally the harvester noticed an unusually large number of earthworms – a sign of soil health.

Further trials are underway lead by independent scientists due to these promising early trial results. ●

To find out more, visit: bactivate.nz
or contact Allan Dean: allan@bactivate.nz
(027) 535-6597

BACTIVATE®

Biological boosts cherry yield and storage

A biological approach for reducing splitting in cherries and improving storage is proving useful to cherry growers.

CentralPac in Central Otago is a long-time user of a long-term Foliacin and Mycorrcin programme in their cherry orchards. They apply Mycorrcin (a soil biostimulant) to improve soil health, promote healthy root growth and increase nutrient uptake, and Foliacin (a foliar biostimulant) for improving fruit set and foliar health, and to reduce fruit splitting.

CentralPac orchard manager Tim Hope applies Mycorrcin at budbreak and Foliacin regularly from petal fall to harvest. He is impressed by the improvements in his fruit quality and the reduction of splitting in his cherries.

"Using the Biostart programme I have reduced cherry splitting to around 10 percent of the crop including in varieties and blocks that are prone to splitting. Even in years of extreme splitting pressure I have been able to harvest a crop when others haven't," explains Tim.

In a further trial at Moondooma Orchard, in Victoria, Australia, two applications of Biostart Foliacin, 28 and 14 days prior to harvest, reduced cherry splitting by 55 percent. The cherries on the untreated trees had 52 percent splitting while the cherries from the Foliacin treated trees had only 23 percent. This meant that 77 percent of the Foliacin-treated crop was marketable, compared to only 48 percent of the untreated crop, giving a significant economic benefit to the grower. Considering the late applications, Foliacin is a handy tool for reducing crop losses late in the season around rain events.

Further improvements were revealed in the Moondooma Orchard trial when quality after storage was measured. The samples of treated and untreated were stored at 4°C for 21 days. After 21 days storage a further 26 percent of the untreated cherries had split compared to only 4 percent more of the Foliacin treated cherries, a big improvement in the treated cherries ability to store well.

Foliacin is applied to plant foliage and can be co-applied with most crop protection and nutritional spray applications.



Foliacin treated cherries on top, untreated on the bottom

Benefits include:

- Plant leaf health, growth and late season leaf retention
- Improved flowering and fruit set
- Better fruit skin integrity (reducing splitting)
- Recovery from environmental and chemical spray stress
- Increased yield
- Improved fruit quality.

Mycorrcin is sprayed directly on to moist soil and can be tank mixed with herbicides, fungicides, fertigation nutrients and suspension fertiliser through fertigation systems and overhead irrigation systems fitted with an appropriate system. For low organic matter and/or low fertility soils, Mycorrcin can be applied in regular smaller amounts through a fertigation or irrigation system. Benefits include:

- Faster orchard establishment in new plantings
- Greater root growth
- Better fruit quality and flavour
- Higher nutrient uptake.

These trials and commercial applications of Mycorrcin and Foliacin confirm that these biological products help improve the quality and quantity of marketable cherries. ●

For more information visit:

www.biostart.co.nz

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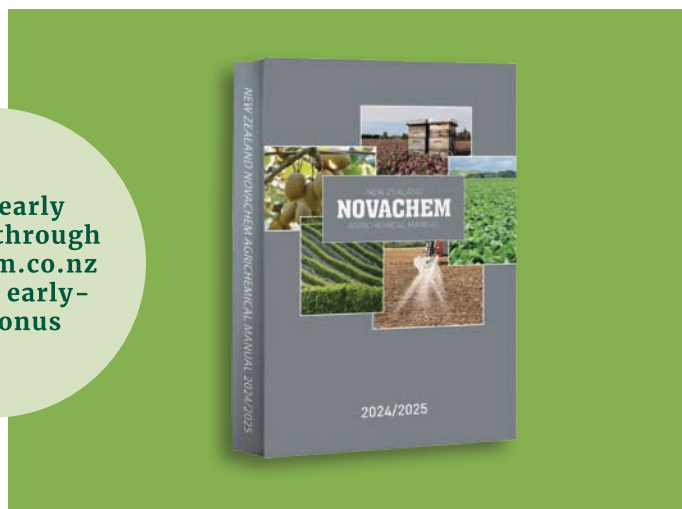
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Don't miss out on the latest agchem info

The latest edition of New Zealand's legendary spray bible, the Novachem NZ Agrichemical Manual, will be available in August this year, so if your copy is looking a bit worse for wear after two years, it's time to order an upgrade.



Order early directly through novachem.co.nz for your early-bird bonus



At about 800 pages, with 140 new listings, and 100 label amendments to existing listings, plus the latest regulatory amendments, the new manual is hardly a light read. But it remains a must for anyone in the industry who relies on gold-standard technical support for all things crop protection.

"Comprising a comprehensive alphabetical listing of products, active ingredients, crop and weed tables, weed and pest identification and much more in one single publication, it really is the definitive agrichemical guide and the only one you'll ever need," says editor Peter Holden.

As always, it's worth ordering early directly through the website (www.novachem.co.nz) as there will be an early-bird bonus offering.

Content wise, Holden says a major change this time around is to do with hazard codes and safety precautions, as our industry transitions from historical, New Zealand-centric Hazardous Substances and New Organisms (HSNO) classifications and wording to internationally standardised language. The Globally Harmonised System (GHS) of classification and labelling of chemicals - is administered by the United Nations Economic Commission for Europe (UNECE) and was first introduced in 2002.

As well as many new product listings, the new edition updates existing products which include active ingredients that have been affected by regulatory review over the past two years, Peter says.

"As in previous editions, the trend continues with regards to withdrawal of older chemistry that presented a high risk to users and the environment being replaced by more target specific products, which are much safer to use and present a low risk of environmental harm."

“

...a major change this time around is to do with hazard codes and safety precautions

While many people still enjoy having a hard copy of the Novachem Agrichemical Manual, subscription to the online version has the additional benefit of providing product updates as they occur as well as being able to directly link to labels, safety information and further technical information from product suppliers. ●

For more information visit:
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NEW ZEALAND
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New on apple blocks, Property® delivers next-gen powdery mildew control

Battle against resistance gets a boost

New Property® fungicide controls powdery mildew and gives under-pressure orchardists an additional resistance resource.

Ryan Pierce, UPL NZ Ltd Regional Sales Manager Lower North Island, says Property is very efficacious chemistry and is being welcomed by the industry. "Property's performance is well proven, and it has excellent preventative activity."

The first of its class to be approved in apples, Ryan says Property is a significant breakthrough.

"Most importantly, there is no known fungicide resistance to Property's active ingredient."

Property's withholding period of 65 days ensures orchardists can cover the key powdery mildew infection period with a potent and flexible tool.

Property has a translaminar action moving through the leaves resulting in outstanding distribution. Another of Property's strengths is its superior vapour activity, which ensures the active reaches all areas which could be infected by powdery mildew and where the tree most needs protection. "All leaf and fruit surfaces get covered."

Ryan says the regularly occurring disease needs to be addressed in every season's spray programme. "You have to keep on top of it."

Powdery mildew (*Podosphaera leucotricha*), a fungal disease, is one of the most serious and widespread diseases of apples in the world, and New Zealand is no exception.

With overwintered infections providing inoculum for the following year, powdery mildew gets off to an early start, affecting the leaves and apple tree flower bud production. It typically presents as a dense white (mycelium), which compromises tree health and production by impacting photosynthesis and leaf vigour and is responsible for water and nutrient loss.

Ryan says, in extreme cases, the pathogen can cause stunted tree growth and russetting of the fruit.

Heavily infected trees can also be vulnerable to secondary pathogens. "Powdery mildew can prove serious, particularly in susceptible apple varieties."

Ryan recommends applying Property as part of a protectant programme at 10-to-14-day intervals when conditions favour disease development. The shorter interval should be used



when conditions are conducive to powdery mildew infection and/or there is rapid plant growth. The total number of Property applications per season must not exceed two.

Property has excellent rainfastness and is compatible with the insecticides and fungicides used most often in orchard spray programmes.

Thorough coverage is important and the addition of Du-Wett® Super-Spreader is recommended in low-to-medium water volumes to ensure optimal foliage deposition. "It gets the best value from your investment in your spray and pays for itself, really," Ryan adds.

Du-Wett, a non-ionic organosilicone surfactant blend, was developed specifically to enhance the spreading and foliage deposition. Ryan says it has the knock-on effect of reducing the amount of time spray trucks need to spend in blocks, cutting fuel and labour costs. ●

For more advice on how to combat powdery mildew with Property, ask your local technical specialist.

Property: Registered pursuant to the ACVM Act 1997, No. P009953. See www.foodsafety.govt.nz for registration conditions. Approved pursuant to the HSNO Act 1996. Approval Code HSR101410. See www.epa.govt.nz for approval controls.

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Getting growers on the air



Andrew Bristol
HortNZ
communications
manager

Nothing makes New Zealand consumers (and voters) appreciate their fruit and vegetable growers better than hearing from growers themselves. Every week national and local news outlets feature grower interviews, articles and news bulletins. Many are orchestrated behind the scenes by the Horticulture New Zealand communications manager, Andrew Bristol, working with other communications people employed throughout horticulture. We asked Andrew how it works.



Left: HortNZ communications manager Andrew Bristol has close contact with media including Stuff journalists. Right: LeaderBrand's Richard Burke answers questions during the launch of the Aotearoa Horticulture Action Plan

? How do New Zealand media outlets find growers to interview?

"I am in close contact with all national and local media, as well as fellow communications people. There's a lot of coordination - indeed, a reporter recently said to me 'that's what another communications manager said. Do you guys talk to each other?' Being in close contact means that we can ensure that as an industry, our messaging is consistent and clear. It also means that we can find the type of grower that the media would like to talk to the most. Then we work with that grower on messaging."

? Why isn't there better understanding of horticulture's climate and economic challenges?

"Good question, but communications colleagues working in other industries and areas ask exactly the

same question! Today's reporters do not have a lot of time. They are under immense pressure to post the first story on the internet, almost before any announcement is made. That's why it is important to build relationships with reporters, and be accessible and responsive. So in the little time they often have, they can write an accurate story."

? We often hear from the same growers. Shouldn't other growers get a chance?

"The media has a habit of wanting to talk to a spokesperson they have used before, because it makes it easier for them. Also, not everyone wants to be interviewed, either because they don't want the profile or the company for which they work doesn't. That's fair enough, particularly on controversial issues or where there could be a conflict of interest involved."

? If growers have a story that should be told, should they contact you?

"Absolutely. My colleagues and I are always on the look out for stories that show just how fantastic our growers and the produce that they grow are. While these stories won't make the 6pm television news, you never know when they might be run, particularly by the smaller newspapers and magazines." ●

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Growers are welcome to send their feedback and suggestions to Andrew at:
andrew.bristol@hortnz.co.nz



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