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HORTICULTURE NEW ZEALAND

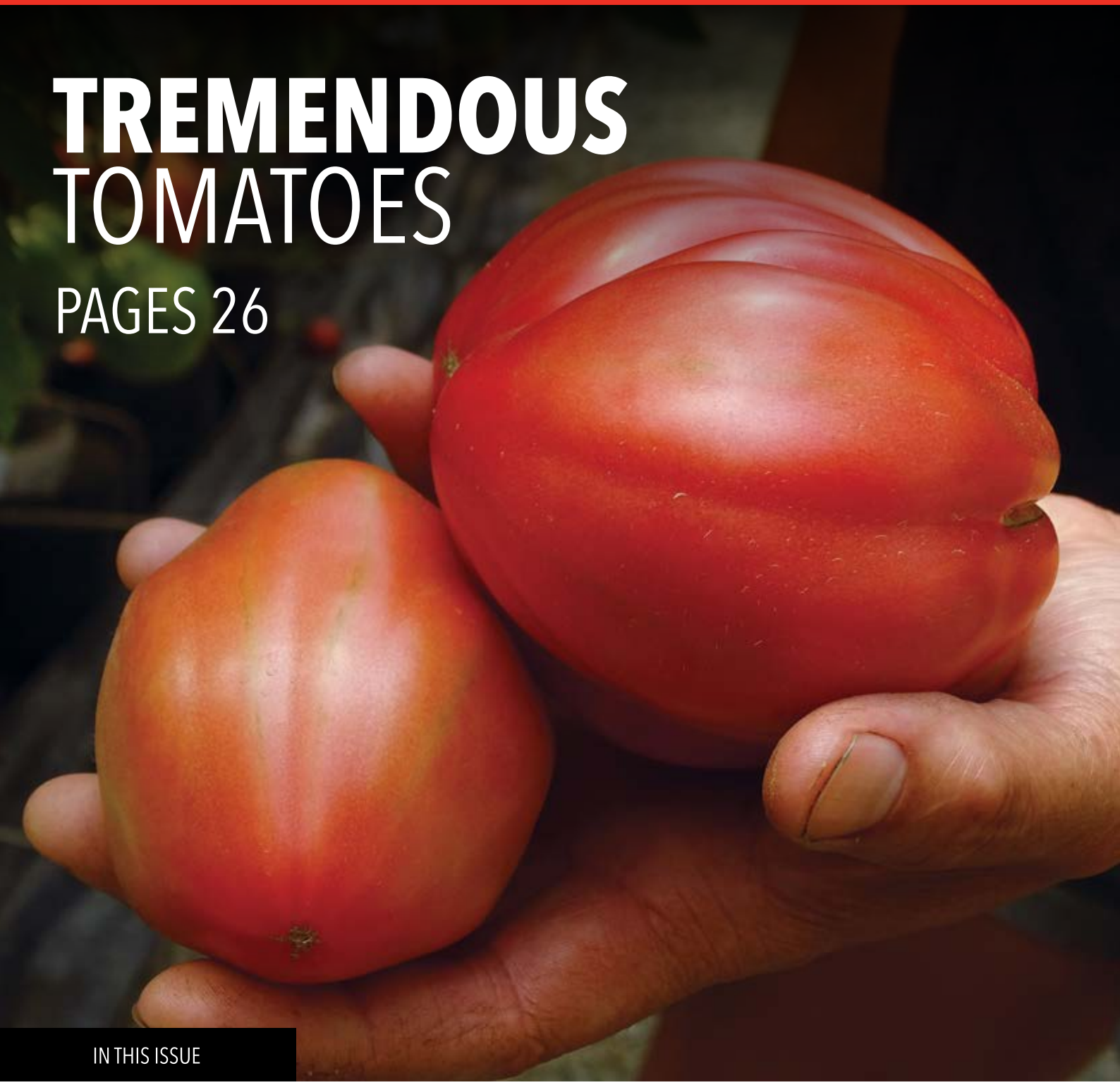

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Photo by Anne Hardie.

WHAT'S NEW

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

2021: A NEW YEAR AND NEW DECADE

Words by Barry O'Neil, President : HortNZ

As we begin another New Year, if we review what eventuated over the last 12 months, we hopefully have plenty of good reflections and not too many bad ones. At the same time, some of us will have thought about taking a different approach to try and avoid what we didn't like or didn't want to happen last year.

If I think about what would be on a grower's New Year's wish list, most of us would have many issues in common, and top of the list would be labour – affordable and reliable labour! And no more hail please, and enough rain (at the right time). Let's also have consistently high demand and high prices for our produce, along with sea and airfreight reliability.

This year 2021 is also the start of a new decade according to the Gregorian calendar, as this calendar started with year 1 BC and not year O BC. We have not only welcomed in a New Year, but also a new decade.

I think it's also useful to muse on what would be on our New Decade's wish list. Things that we would want to see happen in horticulture over the next 10 years. Would our New Decade's list be the same as our New Year's list? I really hope it's not the same, as I believe over the next 10 years we should be setting our sights much higher as a sector that has so much future potential and opportunity.

So what are some of the things that I believe we should be setting our sights on and achieving over the next 10 years?

A Lighter Touch, the research programme with which most of our sector is currently involved, must deliver the tools to enable those currently dependent on hard chemicals to move to biological and softer chemical options. We must refocus our efforts on reducing any reliance we have on hard chemicals, whether that be by plant breeding, changing our growing systems, or replacement with more acceptable alternatives.

I suggest that by the end of the decade 'hard' or just as importantly 'perceived to be hard' chemicals – including glyphosate, paraquat, hydrogen cyanamide and mancozeb – will not be accepted by consumers for use in food production systems in most developed countries. We therefore have 10 years to find acceptable alternatives. So let's not spend all our effort arguing for their retention, and in doing so waste 10 years of the time that's needed to find the necessary alternative options.

Automation needs to be a priority focus to deliver practical and affordable ways to remove the hard physical labour aspects of growing, harvesting and packaging. There are some really smart kiwi businesses working in this space that are focused on delivering solutions for New Zealand growers, so let's get behind them and support them.

But automation will never solve all our labour issues. As a result, we need to ensure we have employment strategies that we can rely on, and not run the risk of the labour tap being turned off at short notice, as has happened due to Covid-19.

We will still need to have in place the very successful (and World Bank acclaimed) Recognised Seasonal Employer (RSE) programme, to give us full confidence that we have the labour we need for growth, and very importantly, to support our Pasifika communities. But in addition, within the food and fibre sector, horticulture should be positioning itself as the employer of choice, because we offer quality permanent roles, respect our workers and treat them well, and welcome diversity.

Water storage systems will have to significantly expand in order to address climate change impacts. At the same time, production areas will need to increase to deliver the economic gains and employment the country needs from our sector. I think new proposals should look closely at the strategy used by the successful Te Tai Tokerau Water Trust model. This initiative is enabling 7,000ha of new horticulture land to be developed in Northland, and provides significantly improved employment opportunities for the local community. We have been arguing about the importance of new water storage schemes for years, but in reality very little has eventuated. In Northland, it only took five years to get approval and to access government funding, so why can't this model work in other regions of New Zealand?

Māori trusts will become an even greater force driving growth in our sector. In this decade, we will need to work in partnership to address and

redress the longstanding issues with nutrient and water allocation, and find ways to resolve the Treaty of Waitangi Wai 262 claims. Sustainability, including Te Taiao, will become a major focus of growers over this decade. We need to ensure we have invested in generating knowledge and understanding of how to grow successfully without negative environmental impacts. Also, how to operate successfully with the full backing of local communities and consumers, both domestic and international.

> **“Horticulture should be positioning itself as the employer of choice, because we offer quality permanent roles, respect our workers and treat them well, and welcome diversity**

International consumers will become even more discerning. Our opportunity is to position our products and production systems so these customers will actively seek out New Zealand products as they are the healthiest, tastiest, safest, most environmentally friendly, and have the wonderful provenance of Aotearoa New Zealand.

Our science system needs to be better aligned to the challenges and needs of the horticulture sector. It needs to be adequately funded to identify and enable future opportunities and solutions. Science needs to support moves to more covered cropping to mitigate the impacts of changing climate and reduce biosecurity risk. Science-driven breeding programmes need to deliver exciting horticulture opportunities, with new varieties that grow, produce and store well, and that taste like a million dollars! And as a result, we will have multiple ‘Zespri’ success stories.

And last but not least, Covid-19 has shown us what we need to do to keep a significant biosecurity risk from affecting our families, communities and businesses. We now have a better appreciation of not only the need to keep such risks out of New Zealand, but also the need for our biosecurity plans to be in place, to keep the next big risk away from our enterprises. Let’s not forget the lessons that Covid-19 has taught us and make sure that over the next decade, we adopt biosecurity practices that will keep our plants and produce safe.

These are some of my thoughts about what we could achieve this decade. I look forward to engaging with you on whether these are the key priorities that collectively we should be putting our efforts into to make sure they happen.

Happy New Year and New Decade. Hopefully 2021 will also become known as the year of the safe and effective Covid-19 vaccine, which enabled the world to live again! ●

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Your Levy AT WORK

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ACTING IN UNITY FOR INDUSTRY GOOD

Words by Mike Chapman, Chief Executive : HortNZ

2020 was a challenging year for all of us and then there were the floods and hail over Christmas. The difficulties of 2020 are being repeated in 2021 and as noted in the President's Word, we continue to face multiple and significant challenges. My reflection is that last year's challenges and those we face currently are forcing us to change how we operate as an industry at all levels.

Many of the changes are coming from both the proposed and new environmental regulations, and from the need to find enough workers. These two areas dominated my attention in 2020 and I can see that there will be no change to my work priorities for 2021. The number one challenge here is how do we get the government to recognise the importance of horticulture; and then how do we get the government to enable growing healthy food into the future? I firmly believe that we can only achieve this outcome by working together as a collective, as one horticultural industry with clear and consistent messaging. My focus is to link the industry together to achieve unity through product groups, district associations and everyone involved in the industry for the benefit of growers. Being based in Wellington, Horticulture New Zealand has the unique ability to work daily at all levels in government to achieve the outcomes that horticulture needs in order to contribute to New Zealand's economic and health well-being.

Unfortunately, the Covid-19 world we now live in does not give any of us – including the government – the options that previously existed. Across all primary and industrial sectors, the same environmental and labour supply challenges are making continued operation very difficult. The government is being forced to make some very difficult decisions, and in making those decisions, there will be winners and losers.

I believe that the only approach to take is one where we would be in partnership with government. I do not believe, based on my previous experience, that taking an adversarial approach will achieve our goals. When you consider the decisions that have been made in recent months by the government, horticulture has been one of the winners. We have not got all that we need but we have got some support. Other sectors have not been so fortunate.

In addition to working with the government, what we are trying to do is create the best possible operating conditions for government support. When is comes to finding, training and retraining the best possible workers, we have our network of career progression managers, which we are working to expand. This network is taking a fresh and innovative approach, as can be seen from the article written by HortNZ's newly appointed people capability manager in this edition on page 13.

The ability to attract people to horticulture starts with our standing with the public and reputation as an industry. Our future workforce is motivated by their belief in what they are doing and the contribution they are making to our country and the environment. To keep attracting people to our sector, we are working on our reputation. Also, how we employ and engage with the new workforce needs to be adapted to fit their expectations.

> **"Our future workforce is motivated by their belief in what they are doing and the contribution they are making to our country and the environment**

The more our sector does to make our employment attractive to our new and future workforce, the better our reputation with the public will be, and government will be more inclined to enable us to continue to adapt and grow. In effect this is a circle. What we do to attract and retain our workforce improves our public and government reputation, and increases what government is prepared to do to support horticulture. That in turn attracts more people to our workforce.

We need to drive our work cycle to spiral upwards. The spiral upwards can only be achieved by us acting in unity. This is one of HortNZ's top priorities for 2021. ●

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YOUR LEVY AT WORK

INDUSTRY WIDE ISSUES FOR INDUSTRY GOOD

NATURAL RESOURCES AND ENVIRONMENT

AIR

Northland Regional Plan – Environment Court Hearing

The provisions within the proposed Northland Regional Plan prevent any spraying within 100m of a spray-sensitive area, when the wind direction is towards that area. Our position is that the wording of the current rule is too blunt and would prevent spraying when in practice the effects can be safely managed using good management practices.

Throughout 2020 Horticulture New Zealand attended mediations in Northland regarding rules to manage potential effects from agrichemical application. Not all matters were able to be resolved in mediation, and so the matter is proceeding to the Environment Court.

The hearing will be in April. The HortNZ team will present planning, spatial and agrichemical expert witness evidence.

> “Our position is that the wording of the current rule is too blunt and would prevent spraying when in practice the effects can be safely managed using good management practices

Ngaruroro Water Conservation Order – Environment Court Hearing

In 2019 a special tribunal granted a Water Conservation Order for the upper Ngaruroro river. The Water Conservation Order required the upper river be managed in its natural state.

HortNZ did not appeal the decision. But the decision was appealed by a number of parties. White Water Rafting NZ and Forest and Bird’s appeal sought that a Water Conservation Order also apply to the lower river.

HortNZ joined the appeal in support of Hawke’s Bay Regional Council. HortNZ’s primary concern is that we do not support a Water Conservation Order being applied to the lower river.

Over the past year HortNZ and experts have been involved in mediation and conferencing. Matters have not been resolved between parties. A hearing is being held in February. The HortNZ team has prepared planning, recreational, water quality, hydrological, ecological and economic expert witness evidence.

Otago Regional Plan Change 7 (Water permits) – Environment Court Hearing

Otago Regional Council has proposed a plan change to the Regional Plan: for the replacement of deemed permits with water permits, and for the replacement of any water permits expiring prior to 2025.

The plan change has immediate legal effect. This is because it deals with water, and under the RMA, any applications for a water permit also have to give consideration to a plan change.

HortNZ lodged an industry submission and is currently preparing planning and hydrological expert witness evidence, which is due in February.

LAND

Waikato District Plan Review – Council Hearing

The Waikato District Plan sets out policy and rules that manage land use (including activities such as earthworks and vegetation clearance) and subdivision in the Waikato District. The Proposed Waikato District Plan was notified on 18 July 2018.

Currently HortNZ is developing planning evidence to oppose the re-zoning of land currently used for vegetable growing in the Tuakau Area. HortNZ's position is that Council has not adequately assessed the full effects of the loss of highly productive land, and has not considered whether vegetable growing lost from this area can be replaced elsewhere.

Expert witness evidence is due March, with the hearing scheduled in May.

> **"HortNZ is developing planning evidence to oppose the re-zoning of land currently used for vegetable growing in the Tuakau Area**

CLIMATE CHANGE

Climate Change Commission

The Climate Change Commission provides independent advice to government on climate issues. HortNZ has participated in a technical reference group for the Climate Change Commission throughout 2020.

The Climate Change Commission is undertaking public consultation in February and March, on a draft of their first package of advice to government.

The consultation will cover:

- The proposed first three emissions budgets and guidance on the first emissions reduction plan, advising the government on how the emissions budgets could be met.
- Whether New Zealand's first Nationally Determined Contribution is compatible with contributing to the global efforts to limit warming above 1.5°C above pre-industrial levels.
- Advice on what potential reductions in biogenic methane might be needed in the future.

HortNZ will participate in the public consultation meetings.

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CAPABILITY ROLE SHIFT TO INFLUENCE POSITIVE CHANGE

Words by Elaine Fisher

Filling in an application for a nursing scholarship caused Emma Boase to question her planned career path and eventually led to her appointment to the new role of people capability manager at Horticulture New Zealand.

"As I was filling in the form, I realised I wanted to help build the fence at the top of the cliff by keeping people healthy, rather than being the ambulance at the bottom of the cliff," says Emma, whose new role also includes that of co-ordinator for Women in Horticulture.

That was in 2015, and although Emma could not have foreseen the appointment to her current role, her thinking was already in line with HortNZ's vision "Oranga kai, oranga tangata, haere ake nei – Healthy food for all, forever".

"I attended a high school which did not offer agricultural or horticultural courses, but I was interested in people, health and nutrition so thought nursing was the career for me. However, when I thought about it more, I realised working in food production offered me a way to apply these interests and passions in a variety of ways.

"Not only does it help maintain and progress rural communities, but it also provides sustainable, nutritional food for people's health and well-being, reducing the impacts of obesity and other illnesses."

> **"I find it incredibly rewarding to empower people to make the connection between the fruit and vegetables on their plate, and where they are grown and the industry they come from**

So Emma attended Lincoln University, completing a Bachelor of Agribusiness and Food Marketing followed by a Masters in Agricultural and Applied Economics at the University of Missouri, USA. Her Master's research

Emma Boase

in food marketing and consumer behaviour received the Outstanding Student Paper Award at the 2019 International Food Marketing Research Symposium. Emma's research explored how claims made on food packaging labels can lead consumers to perceive other attributes in the same product differently, which she called a "halo effect".

Back in New Zealand to consider her future direction, Emma took up the role of horticulture industry engagement coordinator at Massey University. Massey is home to the only Horticulture science degree programme in New Zealand, and ensuring its success is a key goal. "There is an awesome team at Massey who are passionate about horticulture and linked in with industry in everything they do. The aim is to highlight horticulture (to students) as the industry to be in when they graduate. Integrating aspects of industry through guest lectures, workshops, study tours, scholarship support, and extracurricular activities helps students see these opportunities."

One of the programmes Emma helped to support with the leadership of Professor Hamish Gow was IHIP (International Horticulture Immersion Programme) piloted in June 2019 with support from AGMARDT (The Agricultural & Marketing Research & Development Trust), NZAPI (New Zealand Apples & Pears Inc.), and Zespri.

In January 2020 Emma left for Europe to pursue a PhD in Denmark. "However, as Covid-19 lockdowns continued I decided that doing three years of research with that level of uncertainty was not what I wanted, so I returned to New Zealand in June, spending two weeks in isolation."

Delighted to be back in New Zealand and fresh from enjoying camping in Northland during the summer break, Emma is excited about the opportunities and challenges of her new role with HortNZ.

> **"True diversity and inclusion allows organisations to have a myriad of experiences coming to the table**

"Capability is an unbounded space with lots of opportunities and projects on the go already. Covid has magnified the need to focus on encouraging New Zealanders into the horticultural industry and we need to find innovative ways to sustain permanent jobs for New Zealanders in horticulture as well as fill seasonal positions.

"I find it incredibly rewarding to empower people to make the connection between the fruit and vegetables on their plate, and where they are grown and the industry they come from.

"Once people make the link between providing people with fresh, healthy food and a career in horticulture, they start thinking about working in the horticulture industry differently. Being able to relate the food that you interact with every day to a dynamic and innovative industry is really cool."

As the new people capability manager for HortNZ, Emma will be supporting and coordinating the established nationwide network of career progression managers.

"The horticulture industry has already been working on creating innovative ways to meet seasonal labour needs, while making sure that long-term attraction campaigns get people into permanent careers," says Emma.

"A big issue that the industry is working to address is perception. We need young people, their teachers, mentors, influencers and parents to be more aware of the diverse range of careers out there in the industry and show them that they can have a bright future in horticulture."

Retaining people in the industry requires a change in focus from traditional employment perceptions. "Showing people they are valued is important, as is attracting people who share the employer's vision and purpose so they want to show up, even on rough days.

"It's particularly important to pay attention to the newest employees, as someone's first job or experience often sets strong preferences for the rest of their career."

Emma says today's young people (referred to as Generation Z – or the Zoomers) have unlimited access to information through technology. "Today's bright young things can learn what they want, when they want and if they are sceptical about something, they can research it and form an opinon in five minutes. We're looking at new ways to connect with people both digitally and in-person to shape positive opinions and encourage careers in horticulture.

"For them the workplace is a place of connection, certainly where they get paid, but the research says Gen Z want more from their career. They and their employer need to understand the 'why' of working in that business. If they are not feeling it, and feeling valued, they will likely move."

Emma's role includes advocacy and policy work, liaising with the Ministry for Primary Industries, Ministry of Social Development and the Ministry of Business, Innovation and Employment.

In her role with Women In Horticulture, Emma will assist with planning for a session at the 2021 HortNZ conference; building regional support and networks and helping the organisation achieve its vision of "an innovative and collaborative industry that empowers women at all levels", and to "foster an environment that encourages and recognises women's participation from entry level to leadership roles in horticulture".

Further developing inclusion within the horticultural industry is also part of Emma's job description which includes supporting and amplifying Māori and Pasifika programmes. "True diversity and inclusion allows organisations to have a myriad of experiences coming to the table. This in turn allows for decisions to be made with an increased breadth and depth of knowledge allowing for a more resilient, adaptive, and connected operation."

Diverse and challenging as her new role is, Emma is excited about the opportunities to effect positive change within the industry and people's lives.

For more information about Women in Horticulture visit: **https://women-in-hort.co.nz/**

GENDER NO BARRIER TO SUCCESS IN HORTICULTURAL CAREER

Words by Elaine Fisher

Kerri Nakajima – operations manager for CentralPac in Cromwell

When Kerri Nakajima graduated from the University of Canterbury, she expected her BA majoring in Russian language and literature would lead to a role in the New Zealand diplomatic service.

However, today Kerri is operations manager for CentralPac in Cromwell – the Central Otago facility which packs cherries for more than 20 orchards – and she's loving it.

"It's such a varied job with lots of challenges and every day is different," says Kerri who is also a member of Women in Horticulture's governance group.

Kerri, who grew up in Invercargill, doesn't come from a horticultural background. For five years after leaving university she was an executive assistant and interpreter for Japanese-owned company Bridgestone NZ, which involved some international travel.

In 2005, she and her husband Hiroki moved to Central Otago, and Kerri became office manager and then packhouse manager at Central Cherries in Cromwell.

For 10 years she worked for Central Cherries before joining CentralPac as packhouse manager, then production assistant, and now she is operations manager.

She and Hiroki live in the Catlins where they have a business, and during the cherry harvest season Kerri bases herself two-and-a-half hours away in Cromwell. "The rest of the time I can do most of my work from home."

> "The biggest attribute required I think is flexibility and willingness to learn on the job

Cherries are the only fruit CentralPac packs and the high-value, delicate fruit require careful handling from picking to packing. While many primary industries were struggling to find sufficient staff due to New Zealand's border closures in response to the Covid-19 pandemic, Kerri says CentralPac didn't have that problem in late 2020.

"We have been lucky in that we have attracted some very highly qualified staff from other industries, including from tourism companies in Queenstown, affected by Covid-19, who have joined our team this season.

"There are also a number of backpackers who have managed to have their visas extended so they have been able to stay and work in New Zealand."

It's among those foreign workers that Kerri sometimes gets to practice her language skills, Japanese in particular. "Russian not so much."

> **"It's about being confident in your ability and a willingness to work hard and put your ideas forward**

The cherry harvest began in early December with fruit destined first for the national and international Christmas markets, followed by the main harvest in January and February.

"Export fruit goes by air freight to various countries including China, Taiwan, Thailand, Malaysia, Singapore, Canada and North America. Freight costs are more expensive because of Covid."

While she didn't plan a career in horticulture, Kerri says it's an industry with so much diversity that it offers a wide variety of opportunities for people from varied backgrounds and with a variety of skill sets.

"The biggest attribute required I think is flexibility and willingness to learn on the job. There are always new challenges, and no two seasons are the same."

In her role as operations manager Kerri's technical knowledge has increased as she keeps pace with the ever-evolving computer technology required in a modern packhouse.

In her 15 years in the industry Kerri hasn't found any barriers to advancement because she is a woman. "It's not about whether you are male or female, it's about being confident in your ability and a willingness to work hard and put your ideas forward. You also need to be very flexible to be able to react quickly to the different challenges that each season brings."

Kerri enjoys belonging to Women in Horticulture as it is a way to network and share ideas, learnings and experiences with other women in the industry. For more information about Women in Horticulture visit: **https://women-in-hort.co.nz/**

EMERGING THREAT – SERPENTINE LEAF MINER

Words by Anna Rathé : Biosecurity Manager, HortNZ

The situation

The serpentine leaf miner (*Liriomyza huidobrensis*) has recently been detected in Australia for the first time.

A report from a market garden in Western Sydney was confirmed to be serpentine leaf miner in late October 2020. This was followed by a detection in Queensland in November 2020. Australian authorities are responding and have undertaken surveillance and tracing to determine the extent of the infestation. It appears that eradication in New South Wales is unlikely to be technically feasible due to the extent of the infestation, requiring a transition to management.

Originally from South America, this pest has proven itself to be highly invasive, as demonstrated by its spread around the world. It is now present in a number of countries in Europe, Asia, North America (Canada only), Central America and Africa. Its presence in Australia means the pest is one step closer to New Zealand.

The threat

Serpentine leaf miner feeds on over 300 plant species, including vegetables, legumes and ornamentals. Serpentine leaf miner has long been on the radar for both the fresh and processed vegetable industries, with the changing situation offshore closely watched. The insect is also on Biosecurity New Zealand's priority pest and disease list, reinforcing the significant threat that it poses to plant health in New Zealand.

Serpentine leaf miner is considered a horticultural threat as the maggot (the larval stages of the fly) tunnels through the leaves of host plants such as onion, celery, beans, garlic, lettuce, pea, beetroot, spinach, potatoes, tomatoes and marrow as it feeds. This leaf damage reduces the plant's ability to photosynthesise, slowing growth and reducing productivity. Once established, serpentine leaf miner can be difficult to control due to development of pesticide resistance.

The Ministry for Primary Industries (MPI) has strict measures in place to limit the chances of the serpentine leaf miner making it through the border hidden in imported fresh cut flowers, nursery stock or fresh produce from countries that have established populations of the pest.

What can you do?

We encourage all growers to keep an eye out for any tell-tale signs of leaf miner infestation. This includes scouting commercial outdoor vegetable crops, covered crops and inspecting home vegetable patches. While there are other leaf miner species present in New Zealand, serpentine leaf miner damage is relatively distinctive, with snakelike and irregular leaf mines. Larvae may be present on leaves or inside leaf mines. They are colourless to start with and become pale yellow-white-orange with a maximum size of 3.2mm in length. Adult flies are very small – less than 3mm and grey/black in colour with bright yellow patches on their head and at the base of their wings.

If the pest were to arrive in New Zealand, early detection maximises our chance of eradication. Under the Biosecurity Act 1993 New Zealanders are expected to report the presence of what appears to be an organism not normally seen or otherwise detected in New Zealand – this would include suspect serpentine leaf miner.

If you think you've seen the pest do the right thing and catch it (or collect the leaf), snap a photo of the insect (and/or its damage), and report it by calling the MPI Pest and disease hotline on **0800 80 99 66.**

Serpentine leaf miner

Photo courtesy of National Plant Protection Organization, the Netherlands (insectimages.org)

FIVE SECRETS OF THE NEW GEN Z WORKFORCE

Words by Emma Boase : Career Progression Manager, HortNZ

The February issues of *The Orchardist* and *NZGrower* carry several stories about young people making careers in horticulture.

These stories have been written in the context of industry-wide labour shortages that have been exacerbated by Covid-19 and border closures. I say exacerbated because our industry has been challenged by labour and skill shortages for many years.

In my new role as career progression manager, I was asked to reflect on what our industry needs to do to attract more young people, as well as the benefits of having young people in horticulture.

These are the five points to consider when thinking about 'Gen Z' joining the workforce

1. **Young New Zealanders are not hesitant to work in horticulture.** The awesome result that Summerfruit NZ had before Christmas attracting students for picking is proof of this. However, we need to realise that the word 'horticulture' is jargon to most people. It is perhaps more effective to share a story around sustainable food production, regional economies, people and teams, and nutrition for the world.
2. **The new workforce is Gen Z or 'Zoomers' – pragmatic, tech natives, seeking authenticity.** The workplace for Gen Z is a place of connection, where they get paid but also where they find value in non-monetary terms. Gen Z want to find meaningful work – horticulture can most definitely provide this.
3. **True diversity and inclusion – not just of gender or race, but of experience and perspective – is key to Gen Z.** Organisations who take this on will win. Not only will they attract the best talent, but their decision making will be supported by increased breadth and depth of knowledge, allowing for a more resilient, adaptive, and connected operation.
4. **Our Boomers, Gen X, and Millennials all have plenty to offer younger people coming through.** Actively offering mentorship, sharing opportunity, and pulling others up behind you is essential to capability development. You have walked the pathway our young people are still trying to find. The value of sharing that will never be replaced by a flyer or YouTube video. Mentorship is a two-way street: mentors gain fresh perspective, energy and enthusiasm for innovation, and the opportunity to identify and resolve issues that they wouldn't otherwise see. Who are you giving a hand up to in 2021?
5. **New Zealand is already a world leader in healthy food production.** Our skills, technologies and systems are increasingly exportable, and are advertised by our superb produce. When we compete for value on the global stage, we need to have the best skills, knowledge and entrepreneurial ability. The pace of change is increasing and the measure of success will be who can keep up.

GOHORT NORTHLAND EXPO ATTRACTS HUNDREDS

Words by Hugh Chesterman : Communications and Events Assistant, HortNZ

Industry event unites Northland growers to tackle labour issues

A common theme at the GoHort Northland Expo was that people are our most valuable asset. The Expo attracted more than 200 growers, industry leaders, potential employees and government representatives. (See sidebar.)

"We can't grow our business without people," said Mapua Avocados general manager, Ian Broadhurst. "Our business will be harvesting about one million trays of avocados each year when our plants reach maturity. People are our key asset: without them this can't happen.

"We've got to employ locals because we can't rely on labour coming in from outside the area. We've got a great opportunity to hire locals and currently employ more than 40 full-time. On top of that, we're going to need an additional 70 people.

> "When you find good people, you need to hold onto them

"We're offering training incentives and supporting our staff to seek additional qualifications. When they achieve these qualifications, we increase their pay and offer promotions so that our staff can see the career pathway ahead of them. People in our community can see how committed we are to our people, especially when they see their whānau progressing on this pathway," Ian said.

T&G staff presented their Freshworx campaign at the Expo

Mapua is not alone with rolling out training incentives. Orangewood HR manager Ingrid Edmonds said a similar pay incentive scheme rewards their staff when they complete additional training.

"We have five of our younger employees who are currently completing a post-harvest apprenticeship, and a further 13 completing Level 2 qualifications through Primary ITO.

"We identified these five apprentices when they started, as good people with a lot of promise that we want to keep. They're all doing really well and have chosen training modules which suit their interests and career goals.

"When you find good people, you need to hold onto them. At Orangewood, every position in our business is going to double, meaning we need a lot more staff in coming years. Our staff know this, and can see that we are serious about promotions and the career opportunities we talk about.

"We ask our staff 'whose job would you like to be doing?' and then give them a pathway to get to where they want, and give them the training and promotions they need," Ingrid said.

Focusing on providing life skills as well as professional qualifications to their staff, Tokotoko Solutions presented their holistic approach to supporting locals. Their unique approach combines life skills, pre-job training and ongoing seasonal work to provide both full-time work and personal growth opportunities to locals.

Connecting the various seasonal labour demand peaks in the region, Tokotoko Solutions makes use of the downtime between peaks for further training. By filling these employment gaps, they are able to turn seasonal work into sustainable permanent jobs with career growth opportunities.

Tokotoko Solutions director Isopo Samu (Samu) said that by partnering with growers, this format works towards their goal of redefining

seasonal jobs as permanent work, providing greater certainty to both employers and their community.

"There are so many opportunities to link together these seasonal peaks and look after our people in a way that they don't want to leave the industry," Samu said.

"When we map out the labour needs of an orchard, they might say they need five people for a harvest season. Instead, we give them 10, meaning that we're able to create a four-day-on, four-day-off roster which minimises attrition rates and creates time for study and learning.

"We also plan with orchards or farms what roles they are going to need six months down the line. Knowing this, we can train our staff up so when those roles are needed, they already have the qualifications they need to do the job."

Samu said that what is often missing in the process of hiring locals is the preparation before they start work. "One of the problems historically encountered when hiring locals is that people aren't being properly prepared. We're working to change that.

"Not having base skills like having reliable transport, showing up to meetings on time and having daily routines before starting work leads to high attrition rates and people not wanting to return to the industry. We make sure to teach key personal skills like these before we start with job training, so our people know what to expect when they start.

"Hiring locals first, supporting them, and providing career opportunities is a win-win for employers and the community. It creates a better workforce and a community that will support the industry in return.

"There's so much opportunity in hiring locals for seasonal roles, we just need to shift our attitudes and perspectives to seasonal work," Samu said.

Speedmeet sees hundreds through the doors and jobs filled

Taking place in the afternoon of the GoHort Northland Expo, the 'Speedmeet' matched local employers with job seekers in a 'speed-dating' format. More than 200 people attended the session, with many jobs being offered to keen candidates.

At the Speedmeet interested candidates had rapid meetings with employers to find out more about job offerings, and if interested, registered with the employer or 'matched' with each other using the Ministry of Social Development app.

Job seekers found the event invaluable, with some travelling from as far away as Auckland to attend. One of the job seekers, Dylan Holdaway, said the opportunity to have all of the industry together in one room with many jobs available was a big drawcard.

"This event has been so valuable to be able to make heaps of connections with businesses," Dylan said. "Meeting people and making connections with businesses is normally a hard process when you're just one person, but it's been amazing to bring them all together."

Employers were also fans of the new expo and were impressed with the turnout.

T&G Fresh labour and compliance manager, Richard Lenton, said they had a lot of interest from locals wanting to know about their available opportunities.

"We were rapt with the turnout," Richard said. "The afternoon session had a huge number of people through. What was impressive was the diverse demographic of locals who were interested in the industry, with everyone from school leavers to even some retirees. There were people totally new to the industry as well as returning seasonal workers.

The GoHort Northland Expo on Wednesday 9 December 2020 drew a crowd of more than 200 to find out more about careers in the industry.

Organised by GoHort career progression manager Maria Fatholahi, in collaboration with local Ministry of Social Development and Ministry of Education representatives, the Kerikeri event brought together growers, packhouses, product groups, industry bodies and training providers to discuss the labour needs for the region, opportunities of hiring locals and career pathways within industry.

Split in two halves, the morning session of the event catered to industry and focused discussion around how to attract and retain locals in permanent and seasonal roles. The latter half of the expo was centred around job-seekers with a 'speed-dating' recruitment format.

"We were able to register a lot of interest on the day and invite people to our blueberry open day the following day. There were a lot of people that we'd met at the expo who showed up and have helped. We've been able to fill all our blueberry harvest positions.

Having just launched their Freshworx campaign to promote their seasonal roles, Richard said that T&G is investing huge resources into attracting Kiwis into the industry and offering career growth opportunities.

"We want to show the people in our community that the industry is full of vibrant career options that can take you anywhere, which can all start through a seasonal role."

NELSON-TASMAN PHOTO COMPETITION

Words by Anne Hardie

Budding photographers were quick to enter the Grow NZ Women and Go Horticulture inaugural 'Fun Sun Grow' photo competition.

The aim was to showcase the Nelson-Tasman horticulture scene and add a touch of cheer to a year disrupted by Covid-19.

Go Horticulture's careers progression manager for the region, Robyn Patterson, says it did just that, with entries flowing in of bees, flowers, orchard work and even a prickly hedgehog bundle.

"We were acknowledging it had been a tough year for people and we wanted to cheer people up and do something positive in the community. We're horticulture groups, so we had a horticulture theme and we wanted to showcase the industry.

"People got behind the competition and we got some good photos from it," she says. "I think it inspired people to open their eyes."

Entries had to be from amateur photographers and had to include a living thing with a heartbeat. It was split into four categories and sponsors provided substantial prizes for the winner. The category for school students with a prize of $250, was won by Charlie Robinson-Burrell. The community category with a prize of $500 went to Tash Berridge. The category for entrants working in the horticulture industry was won by Monique Murphy, who received $500. And the prize for the overall winning photo was awarded to Erica Henare who received $1,000.

Overall winning photo by Erica Henare

The photos were put on the Grow NZ Women's Facebook page and voting was judged by the most likes.

The competition was advertised via multiple social media networks and Horticulture New Zealand, plus the polytech, schools and even the Nelson Regional Development Agency. Organisers also 'blitzed' the region with posters to entice people to get out their camera or phone and capture an image.

Robyn says the success of the competition has prompted the Nelson-Tasman groups to plan another next year, with Horticulture New Zealand planning to hold a national competition.

The winning industry photo by Monique Murphy

The winning school student photo by Charlie Robinson-Burrell

The winning community photo by Tash Berridge

FOOD ACT 2014 – RENEWALS DUE IN 2021

Words by Damien Farrelly : Food Safety Manager, HortNZ

It has now been two years since the deadline for horticulture businesses to become registered under the Food Act 2014, so grower registrations are now due for renewal. (Registration is due every two years.)

In 2019, more than 4,000 growers were registered under the Food Act 2014 as a result of recognition of our Good Agricultural Practice (GAP) schemes (NZGAP and GLOBALG.A.P.) As growers have taken advantage of an effective batch registration process via industry groups (NZGAP, Zespri, Avoco, Seeka, and New Zealand Apple and Pears), the costs and complexities of Food Act registration have been minimised. Using this same process, the renewal of Food Act registrations will be seamless for growers who are utilising this industry service. Growers wishing to use this service, or unsure whether to do so, should contact their relevant industry group (NZGAP, Zespri, Avoco, Seeka, or New Zealand Apple and Pears). Packhouses, transporters, storage providers, and wholesalers can also register via NZGAP.

> **If a horticulture business (grower, packer, storage provider, transporter or wholesaler) is now commercially operating without registration, they are in breach of the Food Act 2014 and could be subject to enforcement action**

A grower's Food Act renewal date is based on when the grower was first registered with the Ministry for Primary Industries (MPI) rather than the anniversary date of the grower's GAP certificate, therefore most Food Act registrations will expire between February and April this year. Growers should soon expect to receive communications from the respective GAP industry group who originally registered them for the Food Act (see above). Once the renewal has been confirmed by the industry group and subsequently processed by MPI, growers will receive an updated Food Act registration certificate from MPI. This certificate will most likely be received at the beginning of the month that the existing Food Act registration is due to expire.

2019
4,000
GROWERS WERE REGISTERED UNDER THE FOOD ACT 2014

Overall, batch registration has saved the horticulture industry a lot of administration and confusion, plus over $1 million in direct registration costs to date, and savings will almost double this year once renewals have been processed. This is compared to the cost if each business had registered individually via the local council or MPI, and it highlights the value that GAP schemes continue to deliver for growers.

If a horticulture business (grower, packer, storage provider, transporter or wholesaler) is now commercially operating without registration, they are in breach of the Food Act 2014 and could be subject to enforcement action. Although the Ministry for Primary Industries will use a range of interventions, if businesses are found to be unregistered, large fines (up to $200,000 for companies and $50,000 for individuals) could be applied. Markets and customers may also refuse to accept goods or use services of businesses not registered under the Food Act, in addition to considering their compliance with existing requirements for GAP certification.

By recognising the GAP schemes, standards, and audit systems that have been in place for over 20 years, growers are now demonstrating compliance with the Food Act 2014 and can continue to provide safe and suitable fruit and vegetables for New Zealanders and our many export markets.

For more information on the Food Act 2014 please contact your GAP provider, industry body, MPI, or check the MPI **www.mpi.govt.nz/foodact**, NTWG **www.hortnz.co.nz**, or NZGAP websites **www.nzgap.co.nz**

FARM ENVIRONMENT PLANS AND NEW GOVERNMENT REQUIREMENTS

Words by Ailsa Robertson : Sustainability and Extension Manager, HortNZ

The New Zealand government is drafting new freshwater regulations for certified and audited Farm Environment Plans as well as reviewing the Resource Management Act.

These regulations will set the bar for farm plans across the country. To meet the regulations, growers with five hectares or more of horticultural land use will need to have a certified and audited farm plan. In the farm plan, growers will need to show they are managing any adverse environmental effects of their growing operation. The level of ambition in a grower's farm plan will depend on adverse effects identified. It will also need to align with the freshwater vision and values of the catchment(s) that they grow in.

Horticulture New Zealand advocates for industry assurance programmes, like GLOBALG.A.P. and NZGAP, as the primary vehicle to deliver certified and audited farm plans.

Over 90% of growers in New Zealand are certified through GAP (Good Agricultural Practice) programmes for food safety. GAP modules are also available for social practice and environmental management. The GAP programmes provide a streamlined and integrated approach to meeting a range of market access and regulatory requirements. GAP environment modules like NZGAP's Environment Management System (EMS) add-on, benchmarked to regulation, can help growers document their practices to sustainably manage soils, nutrients, irrigation and biodiversity through a farm plan.

We don't know when the new freshwater regulations will come into force, so I urge you to get started now. All GAP certified growers can use the EMS to develop their farm plan to meet the new regulations.

HortNZ is also offering support to growers through workshops. Our first workshops are for vegetable growers in Gisborne and Pukekohe in the first half of 2021. The workshops will step through a Farm Environment Plan using the EMS add-on to GAP. We plan to visit other regions later this year, and next year.

If you would like know about available support in your area, or how to build your farm plan at home, please contact your local District Association, Product Group, or HortNZ.

A new GAP farm plan module is also in the pipeline for agricultural greenhouse gases. This module will help growers meet new legislation requirements[1]. The first milestone is just around the corner. By the end of 2022, all farms need to document their total annual emissions in their farm plan. For most growers, you will only need to know your emissions from fertiliser use, in tonnes of nitrous oxide and carbon dioxide per year. HortNZ will release more guidance for growers on this in the coming months.

1 https://www.mfe.govt.nz/climate-change/he-waka-eke-noa-primary-sector-climate-change-action-partnership

YOUR INDUSTRY

ACROSS THE SECTOR – ACROSS THE COUNTRY

40 ONIONS NZ FIELD DAY

GROWERS AIM FOR GREATER EFFICIENCY THROUGH INNOVATION

Words by Andrew Bristol

Rob Lindsay amongst his crop

Canterbury vegetable growers visited late last year all had one major driver in common – they are striving for greater efficiency through innovation.

Rob Lindsay has been managing Island Horticulture just north of Christchurch for the past two years. The business employs 15 people full-time and the greenhouses in which the cucumbers grow cover 20,000 square metres.

"Covered crop growing is already very efficient use of land and resources but I'm keen to explore alternative energy sources," says Rob.

"Growing covered crops requires a heat input. The technology we currently have requires the combustion of a fuel but due to increasing costs, and signals from the government that burning fossil fuels is not a future option, we are closely watching some current industry projects.

"For example, could large-scale heat pumps be viable for greenhouse growing? Should we be investing in a large-scale solar array, and using this energy to heat our crop? As the technology is already out there, how can we transfer it to greenhouse growing in New Zealand?"

Rob says he feels the horticulture industry needs to find ways to become as energy efficient and sustainable as possible.

"Look at the wine industry, which tends to look at energy as a system, with many larger wineries using scavenged heat from their chillers for other uses. We are now starting to look at our heating and chilling requirements, and attempting to realise efficiencies.

"I see the phasing out of fossil fuels as both a challenge and an opportunity: a challenge in that we need to find a cost-effective solution but also an opportunity to future-proof New Zealand's covered cropping sector."

Rob says change to an alternative heat source will involve a large cost. "So as an industry, we need to work out how we're going to finance these changes, so we can continue to supply fresh healthy vegetables to future generations of New Zealanders."

All Island Horticulture cucumbers are sold in the South Island. "It would be crazy to generate extra cost by sending them to the North Island," says Rob. "Besides, the less distance they have to travel, the better the condition they are in for the customer."

Geoff Ewan, Nova Fresh Manager

Speaking of the customer, Rob has been experimenting with wrapping cucumbers with a compostable wrap developed in Australia.

"We got it working but, in the end, the product wasn't acceptable to the market because during the heat shrinking process it became translucent, and customers – who buy with their eyes – could not see the quality of the product.

"We would be happy to send unwrapped cucumbers to stores, but the short shelf life (about a day and a half) of an unwrapped cucumber would result in massive food waste."

Rob says his business has a good relationship with the markets, however, their major costs have increased in the past few years but this hasn't been matched by any rise in the price received.

"The only way to maintain returns is to be more efficient, but the easy efficiency gains through upscaling have been realised. Like most horticulture businesses, wages are a major component of our costs, so any increase in wages needs to be countered by either an increase in production, an equivalent decrease in another cost, or an increase in sale price per unit, but retail cucumber prices seem to have reached a limit."

Rob says he likes the diversity of his role and nothing beats being out in the crop.

"Many people assume that growing a crop is pretty simple, but being a successful grower involves combining many disciplines: agronomy, biology, chemistry, plant physiology, thermodynamics, psychology and engineering. In fact, I currently have some Canterbury University engineering students here on practical work experience."

Geoff Ewan has been with the Nova Trust near Templeton for three years. He runs the trust's horticulture unit, which is integrated with the trust's major role as a drug and alcohol rehabilitation centre.

"The trust has been operating for 40 years, offering life and employment skills programmes," says Geoff. "In the mornings, residents are encouraged to participate in what we grow but are not forced to work."

Most people think the Nova Trust is a small grower. However, Geoff is in charge of 3ha of beetroot, 1,400 square metres of capsicums, 5,500 sqm of cucumbers and 360 sqm of chillies.

"I've been involved with horticulture for 32 years. I love getting involved with people and really enjoy this role with the trust. It's great to see the residents build up drive and stamina as part of their recovery programme."

Geoff employs six people full-time for more challenging roles such as harvest and grading.

Like the other covered crop growers visited, Geoff is very conscious of the need to find more sustainable energy sources.

> **"I see the phasing out of fossil fuels as both a challenge and an opportunity: a challenge in that we need to find a cost-effective solution but also an opportunity to future-proof New Zealand's covered cropping sector**

"When you are growing cucumber for 12 months of the year at 16 degrees Celsius, a reliable, sustainable and cost-effective source of heat is imperative."

Indeed, on the day of the visit, the Nova Trust was experiencing problems with its boiler.

MONEY AVAILABLE FOR ALTERNATIVE ENERGY PROJECTS

Covered crop growers that use gas and coal boilers will be able to access government funding as they look at ways to decarbonise their operations.

Money through two contestable funds is available:

1/ The Government Investment in Decarbonising Industry (GIDI) Fund

This $70 million fund, administered by EECA (Energy Efficiency & Conservation Authority), will allow business and industries to access financial support to switch away from boilers run on coal and gas, to cleaner electricity and biomass options.

2/ The Food & Fibres Aotearoa New Zealand Challenge

The Food & Fibres Aotearoa New Zealand Challenge – administered by Agmardt (Agricultural & Marketing Research & Development Trust) – is a contestable fund for money ranging from $50,000 up to $500,000 (inclusive of GST).

It is open to projects led by New Zealand agribusiness organisations and individuals looking to solve issues in the following priority areas:

- Designing catchment and/or regional solutions to solve the challenges of carbon, waste management, environmental and biodiversity issues that will benefit New Zealand as a whole.
- Emissions – opportunities for farmers and growers to decarbonise their farming systems.
- Sustainable food packaging.
- Waste – minimising waste from the food and fibre sectors through leveraging the circular economy.

Vegetables New Zealand and Tomatoes New Zealand are in discussions with EECA and Agmardt on how to best to access the funds for growers. These contestable funds will also require co-investment by the industry.

5+ A DAY STRAWBERRY PROMOTION A SUCCESS

The 5+ A Day Charitable Trust celebrated the New Zealand strawberry season with a promotional campaign that inspired Kiwis with new ways to enjoy strawberries. Fresh, vibrant strawberry salad recipes were shared through bus advertising, magazine and radio ads, and social media activity.

Working with Strawberry Growers New Zealand Inc. (SGNZ), 5+ A Day urged consumers to take advantage of the huge volume of top-quality strawberries available this season, and to try new 5+ A Day strawberry salad recipes available on their website and social media. Consumers were also encouraged to include strawberries in salads regularly to support local growers.

These messages were included in a media release which resulted in United Fresh president, Jerry Prendergast, appearing on the AM Show. Jerry was interviewed live from the market floor and promoted the NZ strawberry season and the importance of supporting local growers.

SGNZ executive manager Mick Ahern says this is the second year SGNZ has partnered with 5+ A Day to cost-effectively promote awareness of new season strawberry availability.

"A basic plan was agreed some months in advance but it become clear from early October that there might be additional and exceptional pressure on sales and prices for a variety of reasons. The SGNZ board therefore agreed to provide 'booster' funding to an expanded campaign in November/December. The team at 5+ A Day responded brilliantly and their report reflects these efforts."

The 5+ A Day social media activity was launched with a strawberry giveaway on @5adaynz Facebook and Instagram pages. Product was kindly supplied by Zaknich Farms and United Fresh member, Strawberry Fields.

The giveaway was followed by a 'Sensational Strawberry Salad' influencer campaign which reached over 140,000 people. Strawberries also featured in the 5+ A Day Christmas promotion, contributing to an overall reach for the campaign of 2,711,724.

The 5+ A Day Charitable Trust was formed in 2007 by United Fresh New Zealand Incorporated. The Trust was set up for the benefit of all Kiwis, especially children, and is committed to increasing the consumption of fresh fruit and vegetables for better health of all New Zealanders. The Trust encourages Kiwis to eat five or more servings of colourful, fresh fruit and vegetables every day for good health.

5+ A Day's vision is to have all Kiwis understanding and enjoying the benefits of eating a daily diet rich in New Zealand grown fresh fruit and vegetables.

To find out more about 5+ A Day visit **www.5aday.co.nz** and follow us on social media **@5adaynz**. For more about United Fresh join us on LinkedIn – **United Fresh New Zealand Incorporated** – and visit our website **www.unitedfresh.co.nz**

RURAL LEADERS: SHAPING THE FUTURE OF AGRIBUSINESS

Words by Heather Woods

The most recent Kellogg cohort who graduated in November 2020 at Lincoln University

Bright minds seek knowledge and we're lucky that here in New Zealand those bright young minds are popping up in all corners of the country.

But paving the future of the agribusiness sector is no easy task. You can't simply train someone in a job and expect stellar results. And it's certainly not a one-person job. Training is a great place to start, but to really drive change and see genuine benefits from the innovations of those bright minds, the best thing you can do – as an employer or an employee – is consider the mentoring, networking and development opportunities of a Rural Leaders programme.

The Kellogg Rural Leadership Programme and the Nuffield NZ Farming Scholarships activate, develop and accelerate leadership qualities. Both programmes are innovative, dynamic, and consistently refined in line with the current climate in the sector – like when a global pandemic strikes. They're flexible and fluid programmes that are always open to new ways of planning and delivering content that benefits the entire agri-business sector.

Growing leadership talent and the entrepreneurial edge

A course is only as good as its leaders. Programme director Scott Champion and academic director Patrick Aldwell are at the controls and that means just one thing – a strong delivery. Scott brings exceptional leadership, strategy and solid facilitation, while Patrick (who has worked with the Kellogg Programme for the last 20 years) works side-by-side with Nuffield Scholarship students helping them develop and refine their research projects. It also makes sense that high calibre speakers from the industry support the programme. People like Ian Proudfoot (global head of business, KPMG), David Nottage (professional trainer and speaker, TORQUE) and Rob Hoult from Team Leader, who is a driving force when it comes to leadership training and generates ringing endorsements for his guidance and teaching style.

Alumni of these programmes graduate with a concentrated accumulation of learnings. Then once they start to pick strategies apart and digest the load, they acquire a growth mindset that allows them to step up and lead more effectively in their day job. And it is this that gives them the edge over their peers.

Collaboration for innovation

Those in the food and fibre sector will benefit most from the Kellogg Programme, where they will learn to understand themselves and identify their leadership

style, including their strengths and weaknesses. Chris Parsons, chief executive for Rural Leaders says "the great thing about Kellogg is becoming part of a 1,000-strong, nationwide alumni of leaders. And as alumni, many go on to have significant influence in their community or sector." But what also makes the Kellogg Programme a standout is the opportunity to collaborate in-person; a key part of the course is multiple intense residential sessions that foster connection. Covid-19 created obstacles in 2020 with travel and event restrictions but at the end of the day everyone, regardless of which side of the farm gate they're on, had the opportunity to develop themselves and learn ways to support their communities and businesses.

The same can be said for the Nuffield Scholarship students. The Nuffield Scholarship is a prestigious programme that runs over 12 months and the experience helps students gain new, valuable insights and ideas to bring back to the New Zealand market, where they're shared and implemented. And many of those insights positively influence the decisions that affect the entire agri-food sector and our rural communities, driving the industry forward and creating new opportunities, new jobs, utilising more advanced technology and using more sustainable methods to ease the impact on our environment.

Usually 16 weeks of international travel enables complete immersion in global agricultural practices and the context in which they operate, but in 2020 Nuffield Scholarship students worked through a lessons collection activity; a role-defining knowledge quest to capture the insights of innovative and entrepreneurial businesses. And in true Kiwi-style, resilience shone through with students delivering a substantial, insightful report at the November 2020 awards ceremony. They didn't let Covid-19 win.

A game-changer for personal development

Personal growth is something for which most people naturally strive, so it's no surprise that testimonials from both programmes are complementary of the learnings. And most realise when they have assimilated the rich accumulation of knowledge and experience, just how much work is involved to really contribute to an evolving industry. But when the programmes come bundled with expert mentoring and the creation of solid life-long friendships, you're then positioned to leverage an industry-wide network, all the while increasing your confidence to truly lead – and create change.

The team at Rural Leaders have their own mission to be the best at finding, developing, activating and supporting leaders in the primary sector. And they have plans to do it as an internationally benchmarked leadership accelerator and a leading scholar-based think tank. With in-demand alumni and a focus on moving policy and practice forwards, keep an eye out for their centre of excellence for leadership development – it's guaranteed to be a game-changer.

Horticulture™ New Zealand
Ahumāra Kai Aotearoa

Horticulture New Zealand **Scholarships 2021**

$500 Industry Training Scholarships

These scholarships are available to industry trainees studying towards a certificate or diploma. They provide assistance and acknowledge the achievements of those studying and working at the same time.

$4500 Undergraduate Scholarships

HortNZ is again offering undergraduate scholarships in 2021. These are to support people undertaking undergraduate study in horticulture or related fields.

These scholarships also include complimentary attendance at the Horticulture Conference 2021 at Mystery Creek, Hamilton, between 4 – 6 August (costs covered include registration fees, conference dinners, accommodation and travel).

$10,000 Postgraduate Scholarships x 2

Horticulture New Zealand (HortNZ) is offering a $10,000 scholarship in 2021. The scholarship is available to people undertaking postgraduate study in horticulture or related fields.

The New Zealand Fruitgrowers' Charitable Trust is offering a $10,000 scholarship (new) in 2021. The scholarship is available to people undertaking postgraduate study specifically related to the fruit industry.

Please note that all scholarships are for one year.

Completed application and reference forms must be submitted to HortNZ by 5pm, 20 March 2021. They are available on the HortNZ website: **www.hortnz.co.nz/scholarships.**

Please email your completed forms to **schols@hortnz.co.nz**. For more information, you can phone Jacqui Stalknecht on (04) 494 9978.

Please note that the Selection Team will be looking for:

- Commitment
- Potential contribution to the industry
- Past achievements
- Individual approach, qualities and skills
- Referees' comments.

ITALIAN HERITAGE TOMATO LOVED BY NELSON LOCALS

Words by Anne Hardie

The creases and comical shapes of Bettina Romano's Isle of Capri tomatoes are all part of their appeal to her loyal Nelson customers.

Tucked away at the base of a hill near Cable Bay in Nelson, Bettina produces 10 tonnes of the heritage variety each year, continuing a Romano family business that spans three generations.

The Italian tomato was brought to the Nelson region with the early Italian settlers and the Romanos were one of the families to establish market gardens in an area known as The Wood. Back then, the tomatoes sat on the edge of the town centre and by the 1940s much of The Wood was covered in glasshouses until Nelson's growing population slowly replaced them with houses.

When Bettina married Nick Romano, her father-in-law Tony was still growing tomatoes in his glasshouses in The Wood and she used to help pick the fruit and take them to market. Then the couple bought a 4ha lifestyle block where they could raise their two kids in a rural setting and Tony saw an opportunity to continue the family business. He offered Bettina the glasshouses and he would teach her all he knew about growing his Capri tomatoes.

It entailed shifting three glasshouses that ranged from 25m in length down to the smallest at 16m. The structure of the latter was shifted in one piece, while the others were dismantled and resurrected on the lifestyle block by Nick.

Shifting the glass panels was another story and Bettina would pick up several panels every time she picked the kids up from kindergarten in The Wood. Plastic replaced the former glass roofs and once they were set up, Tony set about teaching her how to grow the meaty red tomato.

"He would show up in his car at 6am and get into it and be there until lunchtime."

> "The Italian tomato was brought to the Nelson region with the early Italian settlers and the Romanos were one of the families to establish market gardens in an area known as The Wood

That was 20 years ago and today Bettina has two glasshouses growing the Capri tomatoes while the third grows a mix of aubergines, Lebanese cucumbers and Flavorino cocktail tomatoes.

Back in Italy, Bettina says the low-acid Capri variety was often used for making tomato purée – passata – to pour over pasta or use on pizzas. Or the fresh tomatoes were used in a salad with mozzarella, basil and olive oil.

"My customers like their natural form and the fact they are all different. People think of a tomato as being smooth, round and red, but these have creases and a lot more character.

"They also say they are more gentle on their stomachs and they don't get mouth ulcers."

> **"I'm one of those few people who love my job," she says. "I'll do this until I die and I'd like to live to eighty at least."**

Every two days she harvests about 200kg of the Capri that are then sold to customers at the Saturday Nelson Market, the Wednesday Farmer's Market, to restaurants or in the van at the gate which does a good trade through its honesty box.

"They're mostly locals buying from the van and I've had people write notes with their cellphone number because they haven't had the money at the time.

"I've been doing it so long now that I have a good client base and at the Saturday market people know the Romano name, so it's a little niche market. I'm not competing with the big growers because it is a specialty tomato, which makes me a little fish in a big sea which is doable for me."

Even through the Covid-19 lockdown last year, she was still able to supply a couple of shops that were still open and some restaurants that were making up food for customers. Plus, the van was still at the gate for locals to buy tomatoes and the other vegetables, so she was able to sell all her produce through those weeks.

Being a specialty tomato that is sought after by her customers means she achieves $7/kg throughout the season.

Bettina's Capris

Nick sadly passed away eight years ago and these days Bettina gets some help from her partner when he isn't working, plus her daughter helps bag and grade tomatoes. Otherwise, it's largely a one-woman business that runs from the beginning of September when the tomatoes are planted, through to May. Then it's clean-up time through winter and preparation for the next season.

Until three years ago, she grew the tomatoes from seed; selecting the best trusses, covering them with newspaper as Tony had shown her and taking the seeds through to planting. Now she gets Zealandia to graft 1,000 Capri onto Maxifort rootstock, and that means she no longer has to clean a glasshouse in preparation for the seeds or heat it through winter. Buying the plants costs more than growing her own, at $6 a plant, but it's easier and the plants yield better.

"They deliver them on the first of September and all I have to do is plant them."

Outside the glasshouses, Bettina grows fennel and has just started experimenting with globe artichokes to add to the Mediterranean assortment she offers her customers. She also grows Christmas trees on her block of land, which was a sideline business she began with Nick back in 1997. This past Christmas her son managed the Christmas tree rush, selling just over 300 trees.

From a block of bare land, the 4ha is now covered with a mix of trees surrounding garden and glasshouses, which enables the family to be semi self-sufficient. It's a lifestyle Bettina loves.

"I'm one of those few people who love my job," she says. "I'll do this until I die and I'd like to live to eighty at least."

PASSION FOR HORTICULTURE IN THE GENES

Words by Andrew Bristol

Massey University Horticulture Science Master's student, Jack Hosking, says he inherited his passion for growing from his grandfather.

Although Jack was brought up in Auckland rather distant from the crop growing areas of the country, he says, "I have always been interested in nature, the outdoors and food production, and the lifestyle seems a lot better than working in town and living a big city life."

"My grandfather kicked off my passion. He had a quarter-acre section and grew heaps of fruit trees, vegetables and roses. My grandfather was passionate about his land, garden and soil, and his passion has been passed onto me."

At Macleans College in Howick, Jack was the only person in his year to go on to study horticulture, and perhaps the only person ever to take horticulture after college.

He adds that the subjects he took in Year 13 for University Entrance (Statistics, English, Geography, Chemistry and Biology) "gave me a good background for the horticulture degree that I have just finished." And this year, he is starting a two-year Master of Horticulture Science.

A career in horticulture attracts him because as he puts it, "There's a lot of great stuff going on as the industry develops ways to meet challenges."

> **"My grandfather kicked off my passion. He had a quarter-acre section and grew heaps of fruit trees, vegetables and roses. My grandfather was passionate about his land, garden and soil, and his passion has been passed onto me**

"In terms of challenges, labour has to be the biggest one in the short term and it will be interesting to see how that turns out this year. There's also a lot of corporatisation going on in the supply chain, with a move away from family-focused businesses to more corporate, even global companies.

Jack's grandfather kicked off his passion

"I feel plant variety rights are going to be big as they seem to be the way to build a profitable business, like Zespri. With climate change and warmer winters, we could see crops like kiwifruit moving southward or inland to Taranaki, Central Hawke's Bay or North Canterbury. Otherwise, we will have to put up with lower yields."

Jack is also attracted to the lifestyle and the people in the horticulture industry. "You get to live in nice places and the people are down-to-earth, great to be around and good role models." Horticulture is a viable career for the future because we will always need to feed the people of New Zealand – and the world.

"Last year, I heard the Minister of Agriculture say that New Zealand needs to be the 'Swiss watch of the global food market', producing the best fruit, vegetables and other food, to export and for ourselves. That's really worth being part of," Jack says.

He finds Massey a really good place to study horticulture. "It's got a lot of resources, for example, the plant growth unit and post-harvest laboratory. And the teaching staff are a good team."

Bridging the gap

One of Jack's supervisors and mentors is Andrew East, Professor of Postharvest Engineering and Director of the Massey AgriFood (MAF) Digital Laboratory.

Andrew sees his role as bridging the gap between traditional horticulture production in New Zealand and new technology.

> **"Andrew talks of the Massey AgriFood (MAF) Digital Laboratory in practical terms as a "group of people getting stuff done"**

"Just about everything is possible at the moment and there's often a proliferation of potential solutions for any one problem. However, the horticulture industry has very small margins so it is no use coming up with a solution that will cost more than the financial gain it could generate."

One of the other issues is data. How to generate and label it, which is the hardest thing. Who owns the data – the grower? And then there are problems around data interoperability.

Andrew talks of the Massey AgriFood (MAF) Digital Laboratory in practical terms as a "group of people getting stuff done".

"We're bringing together – in the same building – people with backgrounds in agricultural science, robotics and mechanical engineering to develop cost effective solutions to the challenges facing horticulture, farming and forestry in New Zealand." ●

To find out more about Andrew and the MAF Digital Laboratory, visit their website: **www.mafdigitallab.co.nz**

HORTICULTURE HUGELY REWARDING

Words by Helena O'Neill

Molly Green

Working in horticulture is hugely rewarding for Waikato woman Molly Green.

The 23-year-old recently began her second horticultural role at Sutherland Produce in Bombay, south of Auckland.

"I'm helping with planting, groundwork, and then will follow the crop all the way through.

"I enjoy vegetables. I enjoy the fact that you can see your hard work over quite a short period of time. If anything does go wrong then you learn from it pretty fast. And then you get to do it again, you get to have another shot."

Molly graduated from Massey University in 2019 with a Bachelor of Science in Plant Science and Horticulture. She initially began studying veterinary science but found she enjoyed plants a lot more.

"I did a paper called biology of cells. We cut up plants and it was super interesting looking at them under the microscope."

After graduating she secured a role in Pukekohe with A S Wilcox & Sons as carrot crop technical support. There she got to learn about and make vital decisions on how best to grow the crop and ran her own trials throughout the country.

"I was doing all sorts. Lots of digging carrots, crop estimates and trials, and a bit of admin. A range of things, but within one crop. I enjoyed it and it taught me how business worked. Something that our degree didn't really teach as it was more science-focused."

She stayed in that role until December when she took up a position in operations and projects with Sutherland Produce in Bombay in Waikato.

"Being with growers like Wilcox and Sutherland, they have different crops so you get to dabble in more than just one crop. I'd rather be a general person than a one-crop specialised person."

Horticulture skills are very transferable which gives plenty of job options, she says.

"Having that base understanding of plants from my degree I can 'guesstimate' reasonably well what is going to happen when I do something.

"If you've been in horticulture for a little bit, it's not retraining, it's getting more advanced in something. Because those skills are so transferrable, you can go into something and after a month you have picked it up because you already have that base understanding.

"That's the awesome thing about horticulture – you can switch and change."

Working in horticulture is very rewarding, Molly says.

> **If anything does go wrong then you learn from it pretty fast. And then you get to do it again, you get to have another shot**

"Once you've planted a full paddock of broccoli, lettuce, or potatoes, it's quite nice to know that you are helping feed people. I can help plant a crop and then I can go into the supermarket and go 'I helped plant that'. I'm now helping to feed people who need the food.

"It's really cool to see it from the very start to the very end."

Molly also took part in New Zealand's first International Horticulture Immersion Programme (IHIP) in 2019. The study tour is designed to help develop future industry leaders.

"When I went on the IHIP trip, we saw the planting of kiwifruit around New Zealand and then we went overseas and saw them on the ships, the packhouses, the coolstores, and then into the supermarkets. We got to see New Zealand kiwifruit in South Korea.

"It was really cool to go into the supermarkets and see our produce there."

Molly made about 40 visits across the Netherlands, Belgium and South Korea in just two and-a-half weeks.

"We got to see so many amazing things and so many different business models."

"One thing that I found in the horticultural industry here is that people in other countries are very similar. They're just as friendly, they are just as interested in you, and they want to know about you. It's really cool to experience that.

"If you go overseas, you've got opportunities just waiting for you."

Molly's love of plants doesn't stop at work, as the 23-year-old is a houseplant enthusiast.

"I have 80-odd houseplants. I love taking cuttings and propagating. I just love having plants around – it's relaxing I think."

And commercial growing remains satisfying.

"It's so rewarding planting a little seed and then throughout the 120 days crop walking every week watching them grow. Then being able to pick them out at every stage and to see the growth is pretty cool."

IT WOULD BE STINK IF THESE GOT INTO NEW ZEALAND

The **brown marmorated stink bug** is a pest that infests homes, ruins gardens, stinks when crushed, and is almost impossible to get rid of. It could also destroy our fruit and vegetable industries. It's not in New Zealand yet, and we want to keep it that way. So if you see one, don't kill it. Catch it, take a photo, and call us on 0800 80 99 66.

For more information (including how to identify the bug) visit biosecurity.govt.nz/stinkbug

Stink Bugs not shown actual size. (Actual size approx. 1.7cm long)

Seed + Grain Readiness & Response · Horticulture New Zealand · Summerfruit New Zealand · KVH · New Zealand Wine · New Zealand Avocado · New Zealand Apples & Pears · Vegetables New Zealand · TomatoesNZ · GIA

Biosecurity New Zealand
Ministry for Primary Industries
Manatū Ahu Matua

Ko Tātou This Is Us
BIOSECURITY 2025

FAMILY HAS ROOTS IN THE POTATO BUSINESS

Words by Helena O'Neill

Carrying on the family potato-growing business offers plenty of challenges and variety for South Otago's Sarah Mosley.

The 27-year-old swapped her hospitality career for horticulture over a year ago and is now the operations manager for Kowhai Bush Farms.

The business grows potatoes on 300ha across four blocks including three in South Otago – Stirling/Inch Clutha, Milton, Lovells Flat – and a new block at Edendale in Southland.

"We have two dairy farms as well so we rotate the crops and spuds."

Agria is their biggest crop, but they also grow Red Rascal, Red King, Nadine, Maris Anchor, Van Rosa, and Désirée potatoes.

Huge demand before the nationwide lockdown had staff working up to 70-hour weeks to keep up orders.

"We were doing shifts with people starting at midnight and then the next shift would come on, just to keep up with demand. They were going out the door as fast as we could get them in, it was just ridiculous. It meant that we ran out of stock at the end of the year.

"It was a very full-on lockdown period for us."

On top of the challenges provided by Covid-19, the weather also created issues for potato crops.

"We ran out of Agria in the first week of December. We had flooding in November 2019 and again in February 2020 which really hit Agria hard."

Kowhai Bush Farms builds on the work begun by ancestor William Alfred Mosley, who started potato farming five generations back in 1852.

"There's 17 of us plus Dad, and we have our base crew of full-timers. During digging we go up to about 25 and get casual staff to come in. We have the standard staffing issues, but it's not like we can't ever find people, we're quite lucky."

Sarah's dad Russell is stepping back and easing into retirement, while Sarah and her older brother Hamish plan to continue running the family operation into the future.

Sarah Mosley

Christchurch-based pilot Hamish is slowly integrating into the farm, taking on harvest management, while Sarah rejoined Kowhai Bush Farms in October 2019 after spending a decade working in hospitality.

Sarah studied hospitality management at the Queenstown Resort College. She then attended a hospitality school in Switzerland, with a placement working for the charitable trust United Through Sports in St Lucia in the Caribbean, where she spent four seasons.

She later finished her degree in business management at the International School of Business in Sydney before returning to New Zealand to take up the role of operations manager at the Bay Plaza Hotel in Wellington.

Moving back to South Otago and taking up a full-time role in horticulture was more daunting than expected.

"I was probably a bit naive about what I knew about farming. I sort of always just assumed that because I grew up around it that you just kind of knew things, but I didn't. There was so much more to it than I had thought.

"I did a few months of getting back into the swing of things and then in the New Year started taking on more of a management role."

> **It's quite different, each day there's always something going on. I don't think there's a day when I don't learn something new as well**

She is also studying for a Primary ITO level 4 qualification in level 4 post-harvest production.

"Over the past five years we've expanded quite a lot with the amount we're putting out. We got our Foodstuffs contract five or six years ago which meant we had to up our production and supply them every day."

They supply 10kg bags, 5kg bags, 2kg boxes, and 3kg value bags of potatoes for Foodstuffs.

"It's quite a big operation but it's quite a small operation. Sometimes you get the orders and you just can't put them out. There's no rhyme or reason to the order, one day this week it was 30 pallets and then nothing the next."

Sarah enjoys the variety the farm offers.

"It's quite different, each day there's always something going on. I don't think there's a day when I don't learn something new as well."

Working outside and not being stuck in an office is another bonus, she says.

"I like it when we do new season, because the packaging process and the digging process is different. So that's probably my favourite time of year, going out in the sunny weather and getting to dig as opposed to digging in the middle of winter.

"When it's winter and you're having to do it it's pretty miserable, but when you're out in the sun and they're nice potatoes to pick and the soil is nice, it's much better."

TWICE THE VALUE

Words by Glenys Christian

Pukekohe Vegetables Growers' Association (PVGA) president, Kylie Faulkner, is flanked by its inaugural centennial scholarship winners Keegan Neate and Kirianna Matthews

The Pukekohe Vegetables Growers' Association's (PVGA) Centennial Scholarship has got off to a great start with not one but two recipients in its inaugural year.

"Both candidates were amazing and we decided to give them both something," says PVGA president, Kylie Faulkner.

"It wasn't the best timing with a global pandemic, however we had a very high calibre of applicants and we were pleased to be able to split the scholarship."

So Keegan Neate and Kirianna Matthews will both receive $2,500 towards their horticulture studies at Massey University this year.

> "I've enjoyed everything. I haven't had a dull day

Keegan, 18, took part in a Pukekohe High School Horticulture Pathways programme last year organised by its head of agriculture and horticulture, Dave Matthews, under which a number of pupils spent three days each on work experience at three local businesses, Punchbowl, A S Wilcox and T & G Global then a follow-up day at each. Keegan says he particularly appreciated the way in which kiwifruit and blueberry grower, Punchbowl, showed the breadth of careers that horticulture could offer. And he made such an impression he was offered work over the summer then returned to do afternoon shifts through the packing season.

This Christmas break he's been working at a number of Punchbowl properties all within 30 minutes drive of Pukekohe and is based at Port Waikato at present.

"It's cool to see the different set-ups," he says.

"I've enjoyed everything. I haven't had a dull day."

He's now looking forward to heading to Massey to start on the three-year Bachelor of Horticulture Science with help from a Punchbowl scholarship. The PVGA scholarship will make a big difference as well, as he'll be able to concentrate on his studies rather than needing to look for a part-time job in Palmerston North.

Kirianna Matthews,19, the second PVGA scholarship recipient, has already completed her first year of the degree and has been back working on the planting

team at Sutherland Produce over the summer break. She had worked there for several two-week stints through 2019 after working at local restaurant, Bracu, and PGG Wrightson in her school holidays.

"Until Year 11 I wanted to be an agricultural vet," she says.

"But then I saw how many jobs there were available in horticulture. And I live in the right place to be in the horticulture industry."

Massey was only offering agricultural science degrees until 2020, so she was quick to enrol, although the year had its obvious challenges, and she spent three months back at home during lockdown.

"But it's everything I wanted to do," she says.

"It hit the nail on the head when it came to relevance to the industry, and you can be more specific depending on what you want to do."

She's particularly enjoyed soil science and would maybe like to work as a rep for a horticultural supply company in the future.

She already has good contacts with local Pukekohe growers, but sees a big benefit of receiving the PVGA scholarship as getting her name and face better known through networks in the area where she wants to work in the future.

"It also means so much less stress, as I was working 45 to 50 hours a week while studying."

Kylie says both of them can be proud of their applications for the scholarship, which showed their appreciation of horticulture's role.

"They both brought different things to the table," she says.

> **"Until Year 11 I wanted to be an agricultural vet, but then I saw how many jobs there were available in horticulture**

As well as completing their applications and providing references, they were interviewed by a small scholarship team made up of PVGA committee members who then made the final decision.

The scholarship was the brainchild of a few PVGA members who recognised that growers need to encourage young people into their industry.

"And we wanted to support some of our local people in our own backyard."

So the scholarship was kicked off at its centennial dinner in 2018, where a painting by local artist, Logan Moffatt, of a Pukekohe vegetable growing scene was auctioned. All the proceeds went to jump-starting the scholarship fund, with the PVGA matching a very generous bid by Gerry and Yvonne Aarts, long-time growers in the area.

"It was a learning curve for the association as we then had to look into all the legal aspects, and become a charity to be able to go forward with the scholarship," Kylie explains.

The long process was completed last year and so PVGA was able to offer the scholarship for the first time.

Future funding will depend on how active the association is in coming up with more events.

"There are some pretty cool things in the pipeline."

GETTING FOOD WHERE THE NEED IS GREATEST

Words by Glenys Christian

At the Fairgrow launch are (from left) Andrew Keaney, the managing director of T&G Fresh, Peter Aarts from Sundale Farms, and Gavin Findlay, the chief executive of the New Zealand Food Network

Bringing food to the tables of New Zealanders in need is the aim of Fairgrow, launched by T&G Fresh in Auckland at the end of last year, which so far has seen almost 290,000 kilograms of fruit and vegetables donated.

Managing director, Andrew Keaney, told guests at the launch at its Mt Wellington base that the company's purpose is to grow healthier futures through fresh fruit and vegetables.

"We knew well before Covid-19 that there were many New Zealanders not getting enough food," he said.

With estimates of around 500,000 Kiwis affected by food insecurity, the problem extends beyond local communities. So a system had to be developed to get produce distributed right across the country, making fresh fruit and vegetables go a lot further. And with the level of need skyrocketing with Covid-19 as demand outstripped supply, the company saw it could add real value, becoming a foundation member of the New Zealand Food Network in July last year.

This group operates as a central hub, collecting and storing bulk donated food from producers and suppliers, then distributing it out to food rescue organisations, iwi and charities. Gavin Findlay, the chief executive of the New Zealand Food Network, said its philosophy is closely aligned with that of T&G Fresh in supporting those in need with a commitment to do the right thing.

"You could say it's a marriage made in heaven."

Fairgrow is now collecting and aggregating surplus and donated fruit and vegetables from T&G's 1,200 growers as well as from its own business. Andrew Keaney said that as well as rising demand due to Covid-19 it is estimated that $872 million worth of food is wasted annually in New Zealand, representing 122,500 tonnes sent to landfill.

"We know addressing food insecurity will require everyone, including business, government and community groups, to work together and take collaborative action," he said.

Fairgrow are helping here too by raising funds to buy produce when it isn't plentiful or readily available, so those in need have greater access throughout the year. Sometimes produce might be left in the ground or on trees as there aren't buyers, so Fairgrow will help out financially, making contributions towards the cost of harvesting and donating some of these crops.

Using its grower network and national fresh produce supply chain, it can match fresh produce supplies with demand from around the country using New Zealand

500,000
Kiwis affected by food insecurity

290,000kg
of fruit and vegetables donated by growers to date

$872m
worth of food is wasted annually in New Zealand

Food Network's connections. Then through its existing infrastructure such as trucks, distribution network and coolstores it will be collected together and distributed to the communities who need it the most.

Peter Aarts from Sundale Farms in Pukekawa, South Auckland, is supporting Fairgrow through regular donations of broccoli, to address what he sees as a critical issue.

"As third generation growers, we take immense pride in growing healthy vegetables," he said.

"The last thing we want to see is any of this food go to waste."

To date the 290,000 kilograms of fruit and vegetables donated by growers and orchardists have been made up of a variety of fruit and vegetables including apples, potatoes, carrots, bananas, beetroot, broccoli, lettuce, tomatoes and cucumbers.

Dargaville's Delta Produce Cooperative which had been donating one tonne of kumara a week split between The Village Community Services Trust in west Auckland, the Auckland City Mission and the Whangarei branch of the Salvation Army, was quick to get on board when approached. They had been providing the vegetables in bags, which was labour intensive, but Fairgrow was able to supply 250kg bins to be filled to go to the City Mission. Delta Produce saw big advantages in its donations being able to be distributed further afield than Auckland by Fairgrow to where food was most required, particularly where the female workforce had been hard hit by Covid-19 closures.

Meanwhile Pukekohe grower Hira Bhana is continuing its donations to The Village Community Services Trust which began in the middle of last year. Woodsy Bhana said more than 20 pallets of vegetables had been collected by the trust or else trucked up to Auckland in its vehicles, with more to come this year.

"We're still donating and we'll continue to help needy people who can't make ends meet," he said.

Trust chairperson, former All Black Sir Michael Jones, had contacted the company who he knew well through its sponsorship of the Auckland Blues, asking if it could help out as the Covid lockdown took its toll. That demand eased as people got back to work, but then there was another surge with the second lockdown in Auckland, and the trust was well placed to get food discreetly to those who most needed it.

CHANGE OF FOCUS FOLLOWING EU FUNGICIDE DECISION

Words by Geoff Lewis. Photographs by Trefor Ward

The European Union's decision to ban Mancozeb – one of the most common fungicides used in arable farming – has focused attention on other means of controlling powdery mildew in New Zealand's onion crop according to agronomist and consultant Rob Cox.

An Onions NZ field walk held on the Desloe Produce property of Dennis Fong attracted about 80 growers, scientists, consultants and industry workers in early December. The aim of the event was to demonstrate progress in two key areas – the biological control of thrips, a key insect scourge of onions, and a reduced Mancozeb residue trial undertaken by Plant & Food Research.

However, the reason for the reduced residue trial was called into question in October (2020) when the European Union standing committee on Plants, Animals, Food and Feed, voted not to renew approval for Mancozeb, which has been in use for nearly 60 years, due to concerns around its effect on human reproduction.

"Next year is the last year we will be able to use Mancozeb as a multi-site protective product. Mancozeb is cheap and effective. We are looking for replacements, looking at the level of disease suppression and fungal resistance. When we lose Mancozeb there will be a lot of pressure on other systemic fungicides. But fungals mutate quickly and resistance is often prevalent," Rob Cox said.

Onions NZ chief executive James Kuperus said there had been rumours of a change in policy towards Mancozeb for several years as the use of these treatments are periodically reviewed. While the EU has banned Mancozeb, just when the ban will come into force is ultimately up to the supermarket chains in Europe and European growers and could be in 12 months' time. In the meantime, the New Zealand industry is still legally able to use the fungicide.

"There is a long-term trend among consumers for produce grown with less chemicals. It's not going to stop. The option for New Zealand growers is that we can rise to the challenge by being a global producer of premium onions. This is not organic growing, but growing with reduced application of agricultural chemicals.

"Onions are a $US3.9 billion annual international trade. It's all about how we build a bigger slice of the pie for New Zealand," he said.

$US3.9 billion

ONIONS ARE A $US3.9 BILLION ANNUAL INTERNATIONAL TRADE

Alongside second-guessing EU consumer fashions is the IPM (integrated Pest Management) research led by Fruit Fed vegetables technical advisor Daniel Sutton.

The aim of this work is to find ways of reducing the use of chemical pesticides (bee-damaging neonicotinoids) in onions and how to use biological control in the form of beneficial predator insects to help control thrips. This approach is used in other crops including potatoes and brassicas.

The 'beneficials' include rove beetles, centipedes, earwigs and predatory mites and requires creating a welcoming environment for these creatures in and around the onion crop. The challenge being, as Sutton put it, "onions are not a very hospitable environment for anything except thrips"

Encouraging other insects to do the dirty work is a balancing act and a matter of laying mulch between the onion rows. The researchers had done this by laying silage mulch in one trial patch and wood chips in another. Silage mulch turned out to be better as it breaks down more easily.

> **"The aim of this work is to find ways of reducing the use of chemical pesticides (bee-damaging neonicotinoids) in onions and how to use biological control in the form of beneficial predator insects to help control thrips**

In the first year they had a few people putting mulch out with wheelbarrows. "This year the question is, can we do this on a commercial scale?

"We managed to get to the end of November with thrip numbers under control – then it took off, a spike in thrip numbers was found in early December. We reached a point where the other insects couldn't control thrips. Then we had to come in with sprays"

One December field walk attendee was former Bayer-Monsanto testing and operations manager Julian Anthony, who has spent most of the past decade breeding onion seed.

Julian said there is nothing new in the conduct of the field trials, and similar things had been seen 20 years ago. He was concerned that no effort had been made to try companion crops as a strategy to help reduce the spread of disease and pests.

"There are so many factors involved – for instance, are the onions we are growing adapted to New Zealand conditions – because if they are not they will be under stress, which weakens their resistance to mildew and attracts pests like thrips. For this to really work it needs to start at the breeding end to get varieties that are adapted to the environment. We are trying to cure the symptoms rather than the problems."

Rob Cox responded by saying that there is no point in creating another growing system. "These days we need a concept people can adopt tomorrow."

The field walk was the second in the three-year Onion Pathways project funded by the Ministry for Primary Industries through its Sustainable Farming Fund, which is designed to deliver new grower-validated crop management approaches aimed at reducing agricultural chemical residues and boosting industry market potential.

Meanwhile the industry is about to contend with a tight market for international shipping as the export season for New Zealand onions begins in January, James Kuperus said.

Individual exporters organise their own shipping, with the busy period being between mid-January and May. During this period New Zealand exports around 500 container-loads or about 10,000 tonnes of onions a week.

TECHNICAL

THE LATEST INNOVATIONS AND IMPROVEMENTS

IMPORTANT REMINDER FOR GROWERS AROUND OFF-LABEL USE OF PRODUCTS

Words by Rebecca Fisher : Crop Protection Manager, Market Access Solutionz

Off-label use of crop protection products is needed to manage pests, diseases and weeds in a number of minor fruit and vegetable crops.

While the practice is legal, growers are responsible for ensuring that off-label use is necessary, safe and compliant. There are several important management steps that growers need to follow to ensure that the correct products are used and that residue levels on the harvested crop are within regulatory and customer limits.

Off-label use occurs when growers need to use a product to control a pest, disease or weed – but the label does not carry a claim for that crop or target organism. While the flexibility of being able to use crop protection products off-label is critical to New Zealand growers, they are unable to rely on label directions to ensure regulatory controls are complied with. Without label guidance, there is a risk that off-label use may result in exceedance of maximum residue limits (MRLs) or other compliance breaches. Results from residue testing programmes over several years show that where residue levels exceeded MRLs, these incidents were sometimes as a result of products being used off-label.

The Ministry for Primary Industries (MPI) conducts a Food Residue Surveillance Programme (FRSP) which monitors residues on a variety of foods. Residue non-compliance in this project can be as a result of off-label use where no MRL is set and the New Zealand default (of 0.1mg/kg) applies. Or where off-label use of the product is not allowed and consequently any detection of the active is a non-compliance. MRL non-compliances can have serious and negative financial implications for growers, so ensuring that all growers understand the rules and requirements for each crop protection product used, and how to comply with all controls is important.

New Zealand Good Agricultural Practice (NZGAP) has developed a *Guideline for Off Label use of Agrichemicals in Horticulture* to provide growers with practical information which supports them to meet GAP and regulatory requirements.

The NZGAP off-label guideline has recently been updated (December 2020) and is very helpful for growers, particularly of minor crops. All growers who use products off-label should use this guideline. It provides practical information to help growers meet regulatory requirements under the Agricultural compounds and veterinary medicines Act 1997 (ACVM), Hazardous Substances and New Organisms Act 1996 (HSNO), Health and Safety at Work Act 2015 (HSWA), and Food Act 2014.

When designing or updating spray plans, growers should carefully consider what products may need to be used off-label. The guidance document provides a simple decision tree for determining if a product can be used off-label as well as a checklist for ensuring compliance. It is recommended that growers' considerations and decision making around off-label use of a product are documented and lodged in that spray diary entry.

WorkSafe and regional plan requirements must also be met. This includes tasks such as complying with neighbour notification, buffer zones, re-entry intervals and signage requirements.

These off-label use guidelines are not an exhaustive list of all steps which growers must take to ensure regulatory compliance, particularly with regard to WorkSafe and regional council requirements, where requirements can differ from region to region and because what is a "reasonably practicable" step to take to ensure the safety of your workers and bystanders, will vary between growing operations. Whilst some WorkSafe requirements are specific such as thresholds over which signage is required, others are based around the principle of eliminating and minimising risks to health and safety so far as is reasonably practicable.

The latest version of the NZGAP Off-label Guideline can be accessed here:

www.nzgap.co.nz/NZGAP_Public/Growers/Guidelines/

If you have queries, please contact NZGAP at nzgap@hortnz.co.nz or your Product Group Manager.

PLANT EMPOWERMENT (GPE), A NEW WAY OF GROWING

Words by Elly Nederhoff, Elly@crophouse.co.nz

It is time to introduce a new approach named 'Growing by Plant Empowerment' (GPE), which aims to grow in an energy efficient way, while achieving optimum production.

It started in the Netherlands around 2010, when the Dutch greenhouse industry was compelled to save more energy to comply with European climate change agreements. Energy efficiency had improved over several decades, but the energy consumption had not declined sufficiently. It was decided that drastic measures were needed, because *if you keep doing what you are doing, you keep getting the same result.*

Several research teams developed new ways of climate control, including semi-closed greenhouses, HNT ('the New Way of Growing'), GPE ('Growing by Plant Empowerment') and more, with overlaps between each approach. Growers who adopted the new concepts obtained markedly better energy efficiency, yield and fruit quality.

All these approaches are very comprehensive, for instance, GPE is described in a 300-page book.* In this article we can only scratch the surface. Three elements of GPE are briefly outlined: screens, plant temperature and humidity control.

'Growing by plant empowerment' (GPE) in a nutshell

GPE is based on maintaining the balances for water, energy and CO2 in the plant and in the greenhouse. Key elements of GPE are: (1) uniform climate, (2) smart humidity control, (3) using energy screen(s), (4) reduced heat emission, (5) air movement.

GPE requires some serious investment, namely in an energy screen, air fans and some extra sensors, including a leaf temperature sensor, thermo-camera, and an extra temperature and humidity sensor above the screen. This comes on top of the normal sensors for temperature, humidity and CO_2 near the plants, and the normal weather sensors. Another requirement is the grower's commitment and time for understanding the underlying physics and plant physiology.

Energy screen creates warmer plants

The most important tool in GPE would be the energy screen. A screen reduces the amount of energy needed for maintaining the required temperature, and more importantly, a screen keeps the plant heads warm. This is because a screen largely blocks the emission of long-wave radiation (heat radiation) from the plants to the cold greenhouse roof. It may seem a trivial detail, but it makes a significant difference.

On cold nights, in a greenhouse without a screen, plant heads get very cold, and therefore do not transpire any water. Hence the heads miss out on water supply from the roots which contains essential nutrients such as calcium. This in turn, causes calcium deficiency in growing points, leading to brown tips in young leaves and possibly blossom-end rot later in the fruit. Also, cold plant heads can get damp from condensation, and are thus prone to fungal diseases. In addition, non-transpiring plant heads get wet from guttation (caused by root pressure), leading to diseases. Proper use of an energy screen avoids all this, which is good for plant health and fruit quality, including reduced blossom-end rot.

Screening at daytime

The type of screen material used is very important. A (semi-)transparent screen can be used night and day. In GPE, a transparent screen is closed in the morning until the sun is powerful enough to maintain the required temperature. This is at about 250 Watt/m^2 solar radiation, measured outside with a pyranometer. This screen can be closed again some time before sunset.

In the traditional way, even transparent screens were opened before sunrise. This created a substantial spike in energy use early in the morning, because the heating system had to warm up the air in the growing space as well as in the cold top compartment above the screen. Also, it had to lift the temperature from the night level to the daytime level. Skipping this heating boost every morning can save an enormous amount of energy. The screen should not be closed the whole day though, as that makes plants soft and roots lazy.

Screen materials

A good screen lets a certain amount of moisture pass through to the compartment above the screen. This reduces the need for gapping and venting for humidity control, and thus saves energy. A good screen also has an 'anti-condense' attribute. This does not prevent condensation, but it makes that condensation form a thin film of water on the screen instead of large droplets that fall from the screen onto the plants.

One more thing: greenhouses located in cold winter climates overseas are fitted with two separate screens: one transparent and the other a heavy-duty energy saving screen. We won't elaborate on double screens here.

Humidity control as it was done

Energy consumption depends a lot on how the humidity is controlled. After all, reducing humidity requires a lot more energy than maintaining the temperature, especially in milder climates. Humidity control in GPE differs from the traditional way. Traditionally, humidity is reduced by concurrent heating and venting, and opening a small gap in a screen. Unfortunately, concurrent heating and venting increases the transpiration (which increases humidity!) and gapping creates cold spots. Some growers opt not to use the screen at all when the humidity gets too high, so they give up on potential energy saving on those nights.

Humidity control in GPE

GPE aims to use the screen as much as possible (in cold winter conditions). If a transparent screen is used, it can stay closed several hours of the day (see above). Non-transparent screens should be used at night only and opened shortly after sunrise (not before sunrise, for reasons described above).

In GPE, the humidity problem is avoided by using screen material that lets moisture through, and by using ventilation above the screen. Then the moisture travels to the upper compartment, where it condenses against the cold glass or goes out. (GPE uses ventilation on wind side and then leeside, which is different from traditional thinking.) In addition, the screen can be opened 10 or 20% (not just a crack) when it is not too cold outside. Of course, some energy is lost, but the advantage of the warmer plant heads outweighs the disadvantages.

More details and further actions such as the use of air movement and vertical fans will be discussed in a following article.

*Geelen, Peter A M, Voogt, Jan O, van Weel, Peter A, Plant Empowerment: The Basic Principles, 2018, www.plantempowerment.com

PE requires some extra measurements: at least an extra box for temperature and humidity above the screen, and a plant temperature sensor

CRITIQUING REGENERATIVE AGRICULTURE

opinion

By Robin Boom : CPAg, Member of the Institute of Professional Soil Scientists

'Regenerative Agriculture' has been promoted in the public domain by the Green Party and other environmental advocacy groups as a means of saving the planet and a method of sustainable food production.

Last year the government gave nearly two million dollars to the advocacy group Quorum Sense, much to the ire of many farming leaders and scientists who question its merit. Last year lobby group Greenpeace also called on the government to spend $1 billion on a transition to organic and regenerative farming. The latest issue of The New Zealand Institute of Agricultural and Horticultural Science (NZIAHS) magazine, *AgScience*, is solely dedicated to the subject of Regenerative Agriculture, with a number of leading scientists critiquing regenerative agriculture from their various fields of expertise.

In an article discussing the history of Regenerative Agriculture in New Zealand, Dr Warwick Scott, senior lecturer in agronomy at Lincoln, and Dr Derek Wilson, general manager of science at the NZ Institute for Plant & Food Research Ltd, write:

"Regenerative Agriculture is a philosophy that has the improvement of 'soil health' as its central focus. Regenerative agriculture originated in the United States in response to soils becoming damaged by inappropriate land uses, notably exhaustive cropping in unsuitable conditions with little or no livestock farming. The consequences included the creation of the dust bowl of the 1930s where huge quantities of degraded soils were lost by wind blow. Another indicator was sediment loss via the Mississippi River, which in the early 1900s was 760 metric tonnes per minute, but is now reduced through better land and river management. Regenerative agriculture then spread to Australia where poor soils with low fertility were also cropped exhaustively, resulting in degradation."

They go on to say:

"Recent advocacy of regenerative agriculture in this country is based on the presumption that our agricultural systems are degenerated. They are not and the current claims that regenerative agriculture is needed to rescue them are misplaced."

Drs Scott and Wilson conclude:

"…regenerative agriculture is an ideology, and history shows that most ideologies have self-serving extremists. Their ideas should be subjected to scrutiny and, if appropriate, debunked."

The principle objective of regenerative agriculture is striving to optimise the production of nutritious food while restoring and protecting the environment. Although in New Zealand its advocates have largely been focussed on pastoral farming, internationally the spotlight has been on crop growing techniques, reducing cultivation, reducing synthetic fertiliser usage, using compost type materials and biochar to improve water use efficiency and to help build soil carbon levels, and reducing chemical spray inputs. For local vegetable growers there is likely to be increased public pressure to employ some of these techniques to reduce environmental degradation.

Professor Leo Condron of the Department of Soil Science at Lincoln University, in his article discussing soil organic matter and soil health writes:

"Continuous long term cultivation and cropping with limited crop rotation inevitably leads to the depletion of organic matter. In these degraded or 'degenerated' systems, there is an acknowledged need to change land use and land management practices by reducing cultivation, increasing crop rotation, and including cover crops/green manure crops… The extent and degree of significant soil degradation in New Zealand is limited to some small areas that have been subject to long-term intensive crops such as potatoes, onions and seasonal vegetables (or market gardening). Cultivation is an essential component of these systems, and while there may be some opportunity to reduce cultivation, increasing inputs and retention of organic matter is the most effective means of increasing soil organic matter and restoring soil quality health."

Professor Condron goes on to state:

"Advocates of regenerative and other alternative land management systems actively promote the use of various

'bio-stimulants' that are designed to improve plant growth and sustainability by altering the composition and activity of soil micro-organisms (achaea, bacteria and fungi, which account for 95% of soil biota, with the remaining 5% being mites, nematodes and earthworms). These (bio-stimulants) include 'plant growth promoting microbes', 'effective micro-organisms', 'phosphate solubilising micro-organisms', 'compost teas', and 'humates'. These bio-stimulants have been subject to extensive investigation around the world and in the vast majority of cases have been shown to have no significant impact on plant growth and soil biology under field conditions."

In other words these bio-stimulants can generally be lumped into the 'snake oil' category that farmers and growers may be hoodwinked into purchasing.

The current president of the NZIAHS, Professor Jon Hickford from Lincoln University, writes:

"'The cycle of life creates its own fertiliser' is one such statement creating confusion. It sounds attractive, but it is biological, chemical and physical nonsense."

He rightly asks for the peer-reviewed science behind all of the claims and advocacy of regenerative agriculture and goes on to state:

"Science demands these things because science is driven by the quest for knowledge and understanding… It (science) relies on repetition and critical analysis, and scrutiny via peer review and assessment. Science is not something you can choose to believe in, because it is something that is true whether or not you believe in it."

He concludes that:

"There is probably a place for regenerative agriculture in New Zealand, if interpreted at the level of trying to improve some aspects of our current conventional systems. It is perhaps more of a conceptual or aspirational goal than a specified production system. If it is accepted as a defined system, then that system must be fully auditable, with clear evidence provided of benefit, be it in food quality, environmental impact or profitability. Wishing your system to be better is not enough, because it must be demonstrably and reliably better."

The above are excerpts from the December 2020 issue of *AgScience*, comprised of 28 pages of articles by 14 scientists concerned about the in vogue promotion of Regenerative Agriculture. For those interested in reading the full magazine, it can be viewed online at **https://indd.adobe.com/view/693a575a-5482-4df0-bc4d-f986d3bce648**

BIOSECURITY
A TWO-EDGED SWORD

final word

By Mike Nichols

Visitors to Nelson should pay a brief visit to the old wharf, where the names of the ships which brought the early European settlers are listed, along with the names of the passengers and of the plants and animals that they brought with them. Not surprisingly there is no mention of biosecurity!

The first settlers of Aotearoa nearly 800 years ago also brought plants and animals with them – kumara, taro, yams, seeds of hue (bottle gourd), tī (such as tī kōuka, the cabbage tree) and aute (paper mulberry) – and dogs and rats. Unfortunately, many of the plants they brought did not survive the sea voyage or succumbed to the harsher New Zealand climate compared with tropical Hawaiki.

In 1958 when I first arrived in New Zealand by air from Sydney, I cannot recall any biosecurity, which in retrospect should have been present as on the same plane were the Wallaby Rugby team, whose boots I am sure would have soil on them! Things have changed over the years and biosecurity has now become an important part of entering New Zealand.

It is, however, a two-edged sword, because if we make it too difficult to import plants (or animals), we may well be reducing the potential for enhanced economic activity by restricting the importation of potentially valuable genetics. Genetics which could enable us to produce crops with enhanced productivity, and thus increase our ability to export fresh horticultural products to other countries.

For example, currently it is virtually impossible to import new varieties of fruit because of the limited biosecurity facilities available to ensure that the material is free from any potential pathogens, and then (of course) there is the cost.

New Zealand owes its ability to export fresh fruit and vegetables with minimal paperwork to many countries because of our freedom from a range of pathogens which are present in many countries with whom we compete. The classic examples are fruit fly (specifically Mediterranean fruit fly (Ceratitis capitata), Queensland fruit fly (Bactrocera tryoni) and spotted wing drosophila (Drosophila suzukii), but there are many others.

Dwarf mangoes are easy to harvest

No one would suggest that we should reduce our vigilance at the border, but there is a need to make more biosecurity space available if we are to remain competitive with our horticultural exports. This summer provides a good example. The unseasonable heavy rains in Central Otago by all reports, decimated the export cherry crop. Global warming is predicted to result in extreme weather conditions, so perhaps this was not entirely unexpected. Few growers however, have established rain shelter greenhouses, and in any case the range of dwarfing cherry rootstocks in New Zealand is (I understand) limited to two of the Gisella lines, even though there are many others in Europe.

I can recall that up to the 1950s almost all of the apples grown in New Zealand used Northern Spy as the rootstock. We now use a range of specifically developed rootstocks which were imported (mainly by the Department of Scientific & Industrial Research) at about that time and became commercial after several years of field trials.

Clearly if the cherry industry is to develop, then we need to examine the productivity that other dwarfing rootstocks can achieve. In any case we know that harvesting from ladders is nearly three times as expensive as from the ground, so not even considering the global warming risk, it makes good economic sense to grow dwarf trees.

I recently visited Northland to look at tropical fruit production and was very impressed with the potential, assuming that global warming raises average temperatures by two or three degrees, and that suitable production systems can be developed within high plastic tunnels.

We import a range of tropical fruit, but these are a potential source of numerous pathogens (particularly pests) which could spread onto other crops, and could have major implications for our two major export fruits, apples and kiwifruit.

Growing tropical fruits in New Zealand would most probably involve higher retail prices, because it is difficult to compare $US2 a day wages with New Zealand's equivalent $US14/hour labour costs, but better quality fruit and a local component should be helpful.

Mango is one fruit which comes to mind, but this is difficult to grow under tunnels because the trees grow too large. However dwarfing rootstocks might be the solution, and these already exist in Australia (see photo). It is just a question of importing the dwarfing rootstock.

There is already considerable interest in producing bananas in Northland, Gisborne, and more recently in Hawke's Bay. Of course, there may well be difficulties in developing a more inclusive New Zealand horticultural industry, but this is really no different from Australia's policy, where banana imports are forbidden and quarantine measures limit the importation of apples from New Zealand.

New Zealand has a tremendous worldwide reputation for its apple and kiwifruit breeding programmes. But we will always have to rely on the breeding programmes of other countries for improved genetics of other crops. It is therefore important to have adequate resources to enable these to be imported safely (from a biosecurity viewpoint) but easily into the country.

Equally important is the correct selection of which genetics to import, as there is a significant cost involved in biosecurity. Strawberries are a good example of this. Almost all of the varieties grown in New Zealand are from the United States, mainly bred in California. There is no argument that the University of California are excellent breeders of strawberries, but they are developed for Californian conditions, which can best be described as having a Mediterranean climate. They have also been selected for outdoor production. New Zealand does not have a Mediterranean climate and is trending towards greenhouse production of strawberries. There are excellent strawberry varieties developed in Europe for greenhouse production, and yet these are virtually untested in New Zealand.

In the end it is a two-edged sword because for total biosecurity safety we should never import any produce, but then other countries would respond in a similar manner, and we would be unable to export anything.

Dwarf mangoes Atherton Tableland, North Queensland

DECIPHERING RECENT AMENDMENTS TO THE EMISSIONS TRADING SCHEME

Words by Jordyn Landers : Environmental Policy Advisor, HortNZ

Most growers of fresh tomatoes, capsicums and cucumbers – especially those that heat with coal or gas – will be familiar with the Emissions Trading Scheme (ETS) and the dramatic increases in price over the past year (from $25 in December 2019 to almost $38 by the end of December 2020, per New Zealand Unit paid on gas, coal and other fossil fuels).

Although growers currently have few alternative options to efficiently heat their greenhouses, changes to the ETS provide a strong signal that the carbon price will continue to trend upwards – to encourage transition to other fuel sources, in alignment with emissions targets. TomatoesNZ is working with the Energy Efficiency & Conservation Authority (EECA) and others to try and assist growers to find alternative heating options.

The recent Climate Change Response (Emissions Trading Reform) Amendment Act 2020 made some changes to how the ETS operates.

Why has the ETS been amended? The changes are intended to help New Zealand reach its greenhouse gas emission targets, and in part stem from a 2015 review of the ETS that found it has not significantly incentivised businesses to reduce emissions.

Overview of the key changes made to the ETS

- The gradual **phasing out of industrial allocations** will begin from 2021 – we explain more about what this means in practice below. Industrial allocation is the 'free allocation' of New Zealand Units (NZUs) that growers of tomatoes, capsicums and cucumbers receive in recognition of being 'moderately emissions intensive' and trade exposed.
- **Auctioning and new price controls** – including a 'cost containment reserve' and 'price floor' – are being introduced, and the Fixed Price Option is being amended (and removed once auctioning is established). These mechanisms, along with others, align the supply of units with emissions targets and ensure that the ETS price does not drop below a pre-determined level (or rise too fast beyond $50 per NZU).
- The changes introduce a **cap on emissions under the ETS** based on national emissions budgets and establish the volume of NZUs that will be made available for auctioning each year. The detailed settings will be in regulations made under the Act.
- Meanwhile, the government has also 'upped the ante' on ensuring compliance by introducing **new penalties**, including for submitting an incorrect industrial allocation application.

Phasing out of industrial allocation from 2021

'Industrial allocation' is when the government gives New Zealand Units (**NZUs**) to some businesses to recognise that the ETS could impact their international competitiveness. The allocation of NZUs is calculated on production levels. For horticulture, eligible activities include the production of fresh capsicums, fresh cucumbers, and fresh tomatoes, with an Initial Level of Assistance (LA) of 60% as 'moderately emissions intensive activities[1].

The government will begin to phase out industrial allocation from 2021. The default phase-out rate starts at an annual reduction of one percentage point (0.01) from 2021, for every year until 2030. After 2030 the phase-out rate will become 0.02, and after 2040 the phase-out rate will be 0.03.

The new general phase-out rates will show up in provisional allocation applications from 2021, and in the closing and final allocation applications from 2022.

Horticulture New Zealand made a submission on the Bill seeking that there be an ability for different phase-out rates to apply to different sectors – alongside the default phase-out rate, the Act also introduced a legislated process whereby decreased or increased phase-out rates can be set for one or more activities. If recommended by the Climate Change Commission (and the Minister of Climate Change), a decreased phase-out rate can only apply after 1 January 2031 and must still require phase-out at rates no less than 0.01 (for 2031 to 2041) and no less than 0.02 (for 2041 to 2050). At this stage though, the default phase-out rate applies to growers.

1 Agricultural emissions are currently excluded from the ETS, however the Amendment Act enables these to be priced from 2025 – 'He Waka Eke Noa' is the work programme between the primary sector and government to price agricultural emissions to determine an alternative system to the ETS for agriculture.

Table 1: Rates of industrial allocation phase-out

	'Default' phase-out rate (per year)	A decreased phase-out rate must be **no lesser than** (per year)
2021 - 2030	0.01	N/A
2031 - 2040	0.02	0.01
2041 - 2050	0.03	0.02

For example, for moderately emissions-intensive activities with a current Level of Assistance of 60% (or 0.60):

- In 2021, the level of assistance reduces from 0.6 to 0.59.
- By 2030, the level of assistance will have reduced to 0.50.
- From 2031:
  - If a decreased phase-out regulation has been made, then the rate of phase-out could continue at a rate no lesser than 0.01 (e.g. reduce to 0.49 in 2031).
  - Otherwise, the 'default' phase-out rate increases to 0.2 and the level of assistance will be reduced to 0.48 in 2031, 0.46 in 2032 etc.
- From 2041, the annual phase-out rate will be a minimum of 0.02 (if a decreased phase-out rate applies), otherwise will increase to 0.03.

What does this mean on-the-ground?

Over time the amount of industrial allocation will decrease. The following is a worked example for fresh tomatoes, based on an annual production total of 1,000 tonnes. The formula for final allocation = LA x SUM (PDCT x AB).

Activity: Production of Fresh Tomatoes

Level of Assistance (LA): Refer to table below

Allocative Baseline (AB): 2.6005

Production Total for year (PDCT): 1,000 tonnes

YEAR	LA	PDCT x AB	Final Allocation (Units)
2020	0.60	2600.5	1560
2021	0.59	2600.5	1534
2022	0.58	2600.5	1508
...			
2030	0.50	2600.5	1300

For the same amount of tomatoes (1,000 tonnes in this example), the industrial allocation units decrease by 26 from 2020 to 2021 – this represents a 1.67% decrease.

INTRODUCTION OF AUCTIONING AND REPLACEMENT OF THE FIXED PRICE OPTION

Auctioning will be introduced and occur quarterly, with an auction notice published at least 30 days prior to the auction date. The first auction is scheduled for 17th March 2021, followed by 23 June, 1 September, and 1 December 2021. Auction schedules will be published every September for the upcoming year.

Alongside this, there are new price controls designed to prevent unacceptably high or low auction prices:

- A 'cost containment reserve' will start at a price of $50 per unit and gradually increase over time. The 'trigger price' for the cost containment reserve will increase by 2% each year (e.g., by 2025, it will be $54.12). *For example: The cost containment reserve would be triggered if the unit price were to reach $50 in 2021, releasing more NZUs so that prices do not rise unacceptably high.*
- A 'price floor' can also be implemented, this ensures the price of NZUs does not drop below a certain level; for 2021 the minimum acceptable price to bid at auction will be $20; as above, this will increase by 2% each year.

The existing 'Fixed Price Option' which currently acts like a price ceiling, is being replaced by the cost containment reserve once auctions start (March 2021).

The Ministry for the Environment (MfE) website has more information about price controls (https://www.mfe.govt.nz/reforming-nzets-price-controls).

We also understand that a technical reserve price will be implemented for the auctions, with amendments to the legislation aimed to be in place in time for the first auction on 17 March 2021. A technical reserve is distinct from the hard auction price floor of $20, with Carbon Match reporting in December that the technical reserve is expected to go further, referencing some window of prices observed in the secondary market. The aim is to provide an additional safeguard against auction clearing prices that could see the government selling units "too low" relative to where the secondary market has been trading.

NEW PENALTIES AND INFORMATION PUBLICATION

Penalties under the Act have been strengthened – these changes took effect from 1 January 2021. There are two categories of penalty:

- Failing to surrender or repay NZUs by the due date – this will result in a penalty of 3x the price of carbon for each unit.
- Reporting penalties – apply if an emissions return is not submitted by the required date, or an incorrect emissions return, incorrect industrial allocation application or adjustment is submitted. The penalty amount is calculated based on the process set out in the Act.

Growers do not have an obligation to report or surrender NZUs, therefore most of these penalties are not applicable – however fresh tomato, capsicum and cucumber growers are eligible to apply for an industrial allocation of NZUs, so the second bullet point above applies.

The amendments also introduced new reporting requirements for the Environmental Protection Authority (EPA) – information on the emissions and removals of individual businesses and certain penalties will be made publicly available online.

What does it mean on-the-ground?

- Submitting incorrect information on applications for an industrial allocation will be subject to penalties – it is important to keep on top of accurate record keeping.
- Emissions and removals data will be published annually at the level of individual participants in the NZ ETS, on the EPA and Emissions Trading Register websites, following 10 days' notice.
- The EPA will publish the names of people issued a penalty in any given year, and for any penalty issued in the previous year that still has an amount owing.

KEY TAKEAWAYS

- The ETS is a tool for sending price signals to reduce carbon emissions – changes to the ETS strengthen the system and aim to further incentivise reduced emissions, through a 'sinking lid' approach. It is expected that prices will rise.
- Industrial allocation will reduce over time (even if a decreased phase-out rate is successfully obtained).
- Keep on top of your ETS obligations (submitting the correct information by the required date) and let EPA know promptly if you have made a mistake.

NEED MORE INFORMATION? Check the EPA or MfE's websites or contact the EPA on **emissionstrading@epa.govt.nz** or phone **0800 254 628**, or **contact tomatoes@hortnz.co.nz**

Recent data collection for cucumber producers

The Ministry for the Environment (MfE) recently called for data about greenhouse gas emissions, revenue and production statistics for the production of fresh cucumbers (as well as cartonboard, cementitious products and burnt lime). The data submitted will be treated in confidence subject to the Official Information Act 1982.

The Act allows the Minister (for Climate Change) to collect this data to determine whether a review is required. The current industry allocation data is based on 2006–2009 figures; the information provided will be used in the decision-making process as to whether a review of industrial allocation policy is required.

What happens next? MfE will analyse the data and report back to the Minister for Climate Change on decisions regarding a review of industrial allocation policy.

It is important for growers who completed the Industrial Allocations cucumber survey to understand that the Gazette notice has legal bearing – there is a legal requirement to provide the data required under the Gazette Notice within fifty working days (which was 3 November 2020 in this case). While the timing of the request was not the best, as growers approached peak harvest, there was no means for deferral of the survey. MfE did give some tolerance to late data.

Vegetables New Zealand Inc would like to thank all cucumber growers for the tolerance they showed in completing the survey. Any information derived from the survey, and notified to Vegetables NZ Inc., will be communicated back to cucumber growers.

STRAWBERRY GROWERS TAKE STRIDES TOWARDS INTEGRATED PEST MANAGEMENT, WITH NEW RESEARCH SHOWING PROMISE

Words by Hugh Chesterman : Communications and Events Assistant, HortNZ

Early findings from a three-year research project into thrips management are already yielding promising results, and sparking conversations about how Integrated Pest Management, or IPM, can be adopted by the industry.

More than 50 strawberry growers, consultants, and industry specialists attended a field day on 14 January to see field trials at Anthony Rakich's Danube Orchards. The field day marked a key milestone of the Sustainable Farming Fund research project which seeks to find new ways to treat thrips using an IPM based approach.

At Anthony's family property, Plant & Food Research are testing, in consultation with Dr Paul Horne (IPM Technologies Pty Ltd, Australia) and Chris Thomson (Bioforce Ltd), a range of IPM strategies as part of the "Future-proofing thrips management in strawberries" research project.

> "If we're able to have less pests and use less spray, we'll have a better product. That would be a win-win for everyone

"The results have been really exciting," said Anthony. "Thrips numbers are already starting to come down, and I've been finding predators that have been released spreading to other blocks. It's really cool to see.

"We've learnt a lot from the trials already. We missed an opportunity to spray early on which could have helped the establishment of predators, but it's all part of building information that growers can use about what to do and when to do it.

"I'm really optimistic about what IPM can offer. I want to be able to have a programme that doesn't rely on sprays, especially with resistance increasing. I think it would be great for the industry if we're able to embrace it early while we still have an arsenal of working soft chemistries.

"As an industry, we want people to buy strawberries. If we're able to have less pests and use less spray, we'll have a better product. That would be a win-win for everyone."

To understand what species of thrips, other pests, and their natural enemies are present on strawberry crops, the first year of the project sought to identify bugs present in crops and review what has worked overseas in treating pests.

"A cornerstone of the trials, and any IPM strategy, has been monitoring the numbers of pest species and their naturally occurring predators," said Dr Mette Nielsen, Entomologist at Plant & Food Research. "By monitoring levels in our test block against Anthony's control block, we're able to test the effectiveness of various IPM interventions.

Blue sticky traps and the release of commercially available predatory mite controls such as Cucumeris, Hypoaspis and Persimilis have already been successfully deployed in Danube Orchards this season.

"Cucumeris mite has proved to be a promising beneficial (predatory insect) that is already on the market. It feeds on the early larval stages of thrips, disrupting their lifecycle. They also can feed on other pests such as the 'two spotted spider mites'.

"We're also looking at what pesticide products most accurately target pests. By combining field monitoring with spray diaries, we're able to get a good picture of which sprays are most effective and don't disrupt beneficials."

Mette Nielsen (standing) presented findings from the SFF project and Paul Horn answered questions via Zoom

Plant & Food Research has been trialling blue sticky traps and releasing Cucumeris mites

Integrated Pest Management, as Mette Nielsen explains it, "is all about identifying what pests or issues you are noticing, seeing what's causing it, and then looking at all the options available to react to it. It's not all about not spraying because sometimes you do need to step in and give the beneficials some help."

Industry adoption of Integrated Pest Management is an alluring prize that could come from this project.

Australian IPM specialist Dr Paul Horn said that the New Zealand industry has a unique opportunity to proactively adopt IPM. "New Zealand growers can adopt IPM before pests become resistant to chemicals," Paul said via Zoom.

> **"Neither biologicals nor spray will do it all. It's about using all tools available to you and trying to prevent issues before they happen. IPM has been very successful here in Australia, and there's no reason it can't work in New Zealand**

"When the Victoria strawberry industry moved to IPM, it was because they had to – chemicals alone were not working.

"Here, the New Zealand industry has the advantage of moving towards IPM before you use all the tools in the toolkit. You can keep targeted chemicals working for a long time when you're not using them frequently.

"Neither biologicals nor spray will do it all. It's about using all tools available to you and trying to prevent issues before they happen. IPM has been very successful here in Australia, and there's no reason it can't work in New Zealand.

"When strawberry growers in Australia started with IPM, they had the same beneficials as what's currently available on the market in New Zealand. It is important to start thinking about incorporating IPM while the chemistry options still work."

The "Future-proofing thrips management in strawberries" research project is co-funded by Ministry for Primary Industries and Strawberries Growers New Zealand Inc, with research led by Plant & Food Research and Berryworld Ltd. The three-year project is also a collaboration with industry providers Adria Crop Protection, Orion AgriScience, Agpro NZ Ltd, Bioforce, and Zonda. Dr Paul Horne's involvement is supported via an AGMARDT Visiting Fellowship.

WHY IPM?

The strawberry industry started this project to tackle the challenge of managing thrips through the use of Integrated Pest Management, which can earn a premium when adopted overseas.

New Zealand growers saw that, in Europe, IPM grown produce attracts a higher price by minimising the use of sprays. For example, in European markets there are three levels of 'premium' based on how strawberries are grown: Traditional (no premium); IPM (normal premium); Organic (very high premium).

A key principle of IPM is less reliance on insecticide sprays by preventing pests where possible. Fewer pests mean that less fruit gets damaged, leading to a higher quality product. Less spray can mean a healthy ecosystem, lower costs and potentially greater market access.

PRODUCT GROUPS

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onions NEW ZEALAND INC

EARLY, POSITIVE START TO NEW ZEALAND EXPORT ONION SEASON

By James Kuperus : Chief Executive, Onions NZ Inc.

The 2021 New Zealand export onion season is off to an early and positive start.

Amongst all the turmoil created by Covid-19 and the weather, it's great to be able to report that exports of New Zealand onions to Indonesia are underway, two months earlier than last year.

This is thanks to New Zealand government trade officials' efforts to keep trade open and a decision by Indonesian officials to release quota early.

Seventy-eight tonnes of onions left for Indonesia in the second week of January. While this is small, it signals the season is underway, and prices reflect the additional costs of growing and exporting during a pandemic.

The growing season has been favourable for onion growers. There's been adequate rainfall and the quality is very good. The drought in Auckland did not materialise. While water was short, there was frequent rain during the growing season.

New Zealand growers have planted approximately 6% less onions than last year. This was due to the uncertainty created by Covid-19. However, yield is up so perhaps this season will be only about 3% down on last season.

Internationally New Zealand onions are renowned for their long keeping qualities, and the industry for its food safety practices.

170-175,000
TONNES IS TOTAL ONION EXPORTS EXPECTED FOR 2021.

$145m
VALUE OF NEW ZEALAND'S ONION INDUSTRY LAST YEAR.

45
NUMBER OF COUNTRIES NEW ZEALAND EXPORTS ONIONS TO.

BEING RESILIENT

Words by Antony Heywood : General Manager, Vegetables New Zealand Inc.

The new year can bring many things. A fresh start and a new beginning, or at least a time to stop and take stock of your achievements.

It can also bring a hail storm or weather event, which will put you back several years. The hail event in Motueka on Boxing Day was such event. It has put growers back by at least two years, while they rebuild their equity and plant health. This will test their resilience.

Resilience is a topic Vegetables NZ is embedding into its strategy and workplan for the next five years. The emphasis will be on grower resilience in the face of environmental, social, financial and cultural challenges.

VNZI has a number of themes it will champion in 2021:

1. NZGAP–EMS add-on and the delivery of Farm Environment Plans. Workshops are planned for Northland, Pukekohe, Gisborne and Nelson in 2021.
2. Agrichemical registrations and reassessments. The grower agrichemical toolbox is limited and shrinking. The Environmental Protection Authority (EPA) will be reassessing a lot of old chemistry this year with the potential that it will be withdrawn from use in three years' time. VNZI will attend the reassessment hearings to ensure the EPA understands growers' position and chemical use under best practice.
3. Freshwater use and management, clean waterways and leaching of nitrogen into waterways. Under the National Policy Statement for Freshwater Management (NPS-FM), the Ministry for the Environment will dictate that all farms greater than 5ha will need a Farm Environment Plan by 2025. These plans will need to reflect limits on nitrogen use in particular catchments. Regional and district councils will enforce this policy under various plan changes. It is likely that no two councils will have the same plan or limits on nitrogen. VNZI has research and evidence to support growers to meet their nitrogen limits, as well as to support growers to develop a Farm Environment Plan.
4. How data can benefit growers and the industry. Data can validate actions and tell a story about what good practice looks like. VNZI realises this is a resource it needs to build so that the public and government of New Zealand can say with certainty that vegetable growing is good and needs to thrive.
5. What is happening in your region? VNZI is keen to listen to what you have to say. This year, the VNZI Board will get to the regions to meet with growers.

2021's squash harvest is underway in the Hawke's Bay

The above themes are not the only champions but are the key pillars in our strategy for the next five years. If you would like to comment on any of the above points, or find out more, please contact me on 021 998 038 or email antony.heywood@hortnz.co.nz.

FARM ENVIRONMENT PLANNING IN THE GISBORNE DISTRICT

Words by Leanne Stewart : General Manager, Process Vegetables New Zealand

Horticulture New Zealand, together with Process Vegetables New Zealand and Vegetables New Zealand, held a grower meeting in Gisborne on 18 January 2021 to discuss the upcoming requirements for all commercial vegetable growers (including process vegetable growers) to have prepared and submitted a farm environment plan to Gisborne District Council, under the Tairāwhiti Resource Management Plan, by 1 May 2021.

The Tairāwhiti Resource Management Plan came into effect in 2017 and was last updated in December 2018. Section C sets out the region-wide issues, objectives, policies and rules for environmental risk, freshwater and land management. Section 6.2.9 specifically sets out the rules for diffuse discharge, which will be managed by farm environment plans for vegetable crops and cropping activities, but also includes intensive grazing of stock. Within the Plan growers are asked to become familiar with Appendix H20 that sets out what will need to be incorporated into their farm environment plan, which includes these details:

- Property details and consents held
- Maps of owned and leased blocks
- Nutrient budget and management
- Irrigation and soil management
- Environmental effects and risks
- Measurable targets for actions
- Good management practices
- Recording and measuring performance of targets
- Annual reviews and adjustments.

Fruit crops are not required to have a farm environment plan under the Tairāwhiti Resource Management Plan, but will be under the national requirements.

We will know more about what central government is requiring of all growers later in the year once regulations have been developed.

There are several options for how you develop a farm environment plan, with different organisations providing resources and assistance. Among these there are the Gisborne District Council, the New Zealand Good Agriculture Practices (NZGAP) Environment Management System (EMS), the Foundation for Arable Research (FAR) and independent consultants that provide services in planning. The table below provides a useful comparison of how the different systems and templates are recognised under regional and central government requirements.

	Meets minimum appendix H20	Advisor input at development stage (workshops)	Independently audited, and certified	Aligned with RMA Part 9A
GDC Template	YES	Possible	No	No
EMS Template	YES	YES	YES	YES
FAR & other Template	YES	Possible	No	No

To assist Gisborne vegetable growers to meet the 1 May 2021 deadline for submitting a farm environment plan, HortNZ intends to run a series of support workshops for growers who wish to use the NZGAP EMS template to produce their plan.

If you are interested in attending these workshops please contact Scott Mahupuku, HortNZ environmental policy advisor (Scott.Mahupuku@hortnz.co.nz), or Calvin Gedye, Gisborne Produce Growers Association (Calvin.gedye@xtra.co.nz).

SUMMER SPUD REPORT 2020-2021

Words by Gemma Carroll : Communication & Engagement Officer, Potatoes NZ Inc.

It has been a mixed bag of weather across the country this spring and summer, with increased occurrences of extreme weather events.

NZ agronomists and growers in our main growing regions had the following to say about the 2020–21 potato season.

In Pukekohe, the report in from agronomist Shane Smith indicates a most challenging season on so many fronts. "I'm not sure were to begin this year, but firstly I am thankful to be involved in Horticulture with a secure occupation during these difficult times, unlike so many other people in New Zealand and the world. Our industry provides one of the key elements of life for millions of people".

The Pukekohe region saw a different year in growing terms with a very mild dry winter in 2020 and then as we headed for spring there was still limited rain with a very dry September and October. This was a cause for concern, but in the end the dry spell with cool nights set up the early potato crops for record yields.

Rain came in November and lasted until early December. Overall, the weather has been great for growing potatoes, however it is now starting to heat up with 30 degrees Celsius expected in mid-January.

There are more psyllid infected crops than usual this year, which will need to be monitored closely. However, potato tuber moth damage so far is not too bad, possibly due to the cooler nights up until recently and regular rain. *Alternaria* (Early Blight) is starting to be a problem and it is not just here in New Zealand, with the United Kingdom also finding it an issue, where before it was hardly seen from one year to the next.

All in all, some pleasing results with potato crops in Pukekohe so far, but still a few high-risk months to come.

In Manawatu, Mike Moleta, Opiki grower and PNZ board member says their region saw a late start to planting due to a wetter than usual September, which had followed a genuinely nice winter. Tubers were in the ground a couple of weeks later than normal and then endured a very wet November through until Christmas.

The wet spring made it a challenge to get the usual crop work done. Despite this, the growing has been good. Manawatu yields are not yet apparent, with no main crop harvested until March, April, and May.

The good news is no pests or disease have caused issues and even psyllid numbers are down a bit.

The spring winds were not too bad at the end of 2020, but as mentioned, the wet weather made December soil too wet to get onto the ground for spray programmes, which meant approaching crops from the air instead.

In Canterbury, agronomist Duncan Mcleod and PNZ technical manager Dr Iain Kirkwood say the 2020–21 season is generally progressing well. There has been reasonable soil moisture spread throughout the season so far, except for a dry period late November, early December, and significantly less wind than last season. General feeling is tuber set in most crops is high and tuber development is strong, with the prospect of good yields looking promising. Processors are reporting lower solids at this stage.

Growing degrees days this season are ahead of previous seasons, which has resulted in high psyllid pressures throughout the region – particularly in North Canterbury. Adult psyllids are easily found now and some in-season spread of *Liberibacter* can be observed. There have been several reports of *Rhizoctonia* in both commercial and seed crops this season.

Again, there have been no reports of Mop Top Virus in any of the commercial crops – however, it is still showing sporadic occurrence in the processing lines at the factories. The survey of seed lines last season showed no increase in the occurrence of this disease in seed crops.

Although weather conditions over Christmas and New Year have generally been conducive to the development of late blight, there have been no reports of any outbreaks, however this period has resulted in increased levels of

both *Sclerotinia* and *Botrytis* being reported. Early blight is now starting to make an appearance on older crops, and there have been some concerns over the change in speciation of *Alternaria* (Early blight) with the efficacy of certain chemicals coming under scrutiny. There have been few reports so far of powdery scab, but this is early days, with the disease often appearing later in the season.

The latest *United Fresh Food Trends Report* has useful findings for our industry.

Here are the key takeaways, extracted from the full report.

Consumers want the Ultimate Health Kick

Good news for spuds as we have just completed our three-month campaign championing the nutritional benefits of potatoes. This has reached over 500,000 social media users.

Bulk buying is in, as Covid-19 has changed the way shoppers plan their trips to retailers

Something potato growers may want to consider when sending to market – small boxes may be an easy quick meal, but can you also offer bulk options?

Online is ongoing

Thirty percent of shoppers now buy food online, that's three-fold what it was a year ago. Ordering a sack of potatoes direct from the farm enables shoppers to connect directly with the grower.

Love Local

The resurgence of a 'Buy NZ Made' ethos has been one of the pandemic opportunities. Transparency of supply is a growing trend worldwide with as many as 60% of shoppers seeking more information about where their food is sourced from. Due to Potatoes NZ partnering with Trust Alliance New Zealand and participating in blockchain technology, traceability will become as easy as consumers scanning a QR code. PNZ continues to promote #buylocal on all our social media platforms.

Comfort food

As is often the case in troubling times, shoppers are turning to small indulgences with their weekly shop. The qualitative data we gathered in our 2020 market research and the retail scan data earlier in 2020 during lockdown, backs this up and showed an increase in sales of crisps in New Zealand.

Home Sweet Home

Kiwis are staying in, cooking from scratch, and ordering takeaways rather than dining out. Potatoes and processed potato meals are sure to be a staple in this department.

Good Guts

Alongside the drive for immunity, the health trend for 2021 is the focus on the gut microbiome. Again, potatoes are a hero here, with resistant starch in potatoes a source of nutrition for beneficial gut bacteria.

The Brand Connection

Consumers in 2021 will be increasingly critical of the brands that they support. In the supermarket aisle, home brands are growing rapidly – as much as three times faster than other brands in some categories. This has meant the loss of identity for some of our growers, as supermarkets package growers' produce under the retailer home brand.

Hunger Hurts Us All

The United Nations has sounded the alarm that 2021 will be far worse for vulnerable whānau than 2020. Food insecurity is a growing problem for Kiwis, made worse by scarcity and supply chain issues due to Covid-19.

Despite our local growers producing some of the world's best produce, getting much needed quality fruit and vegetables to those struggling financially has been an issue. Potatoes NZ are keen to find ways to enable growers to support charitable pathways, as we work to feed every one of our team of five million. This will also support our zero emissions target by reducing waste. Let us know if you donate surplus to food banks or would like to find an easier way to do so.

The Planet

Farmers know better than anyone that climate change action and environmental management has not gone away, and the need to address issues of sustainability are primary.

Millennials and Gen Z are driving the move to sustainable practices with over 80% of all shoppers changing their purchase preferences based on the social responsibility, inclusiveness or environmental impact shown by a brand.

Sustainable Vegetable Systems is a major project for our industry alongside our partners as we work towards an approach to food producing which embraces soil health, biodiversity, effective water use and enhancing the natural ecosystem.

We have added a *Sustainability* page to our website and welcome your input and feedback https://potatoesnz.co.nz/growing-certifying/growing-potatoes/sustainability/.

The full United Fresh Report can be read here https://www.unitedfresh.co.nz/news-events/newsletters/united-fresh-news/trend-report-2021-adapting-to-the-new-normal

PNZ Field Walks 2021 are underway this month, with events in Pukekohe, Opiki and Canterbury. Topics include:

R&D: Sustainable Vegetable Systems project.

Biosecurity: Potato Tuber Moth, Tomato Red Spider Mite, Early blight, Bacterial wilt & Potato Mop Top Virus.

Industry Sustainability: Plan Changes, Collective Consents, Government Regulation, PNZ Strategy, PNZ marketing initiatives & strategy and Dumping update.

Check the events page on our website for details **https://potatoesnz.co.nz/news-info/events/**

POTASSIUM NITRATE BENEFITS ON TOP DRESSING APPLICATION IN POTATO

Prilled potassium nitrate (12% N – 38.2% K) is a potassium source that provides rapidly absorbed nitrate-nitrogen, plant's preferred nitrogen source, with 2-4 mm prill size.

Prilled potassium nitrate (12% N - 38.2% K)

Prilled potassium nitrate provides the ideal N:K ratio for potato

After tuberization, potatoes start to accumulate starch in tubers, this process requires large amounts of potassium and nitrogen in comparison with the other nutrients:

Nutrient	Removal of nutrients in kg/mt of fresh tubers		
N	3.0	-	5.3
P	0.6	-	1.1
K	7.4	-	9.8
Ca	0.10	-	1.5
Mg	0.25	-	0.45
Zn	0.002	-	0.003

CHARACTERISTICS	N	P	K	Ca	Mg	S	Mn	B	Zn
SIZE OF TUBERS	+	+	+		+		+	+	
NUMBER OF TUBERS		+	+						
STARCH			+		+			+	
SKIN QUALITY				+	+	+	+	+	+
STORAGE			+	+				+	

Prilled potassium nitrate contains exclusively nitrate nitrogen

- Fast acting and readily soluble source of nitrogen, directly available for uptake by the roots, independent of the activity of nitrifying bacteria, resulting in faster uptake and greater efficiency for the plant.
- Promotes the uptake of potassium (K), calcium (Ca), magnesium (Mg), copper (Cu), iron (Fe), manganese (Mn) and zinc (Zn).

Prilled potassium nitrate is virtually free of chloride

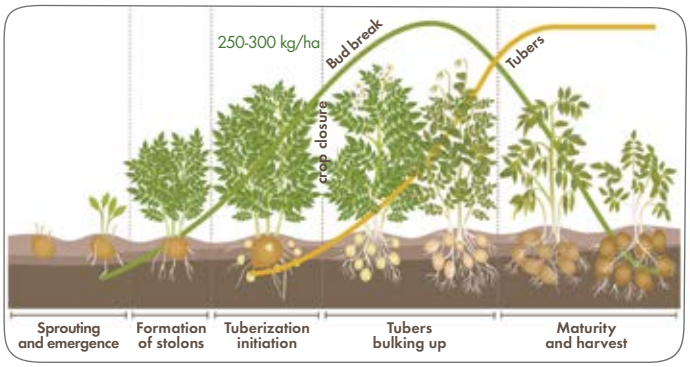
- Increases dry matter and starch content, specific gravity of tubers and improve quality in processing and chipping potatoes.
- Yield and quality are negatively affected by chloride. Nitrate nitrogen (NO_3^-) acts antagonistically to chlorides (Cl^-) present in the soil or water.

Proven benefits of prilled potassium nitrate in potato:

- Total yield increase (tuber size and weight)
- Uniform % of commercial tubers (desirable size)
- Decrease darkening, hollow heart, scabies, blight and bruising
- Less reductive sugars in tubers = less coloration during frying
- Higher dry matter content
- Reduced weight loss during storage

Recommendation of use:

Apply prilled potassium nitrate at **250 to 300 kg / ha**, as top dressing, at the beginning of tuberization period:



For additional information, please visit:
https://sqmnutrition.com/en/essays/get-to-know-potassium-nitrate-in-potato-nutrient-management/
www.sqmnutrition.com

EARLY DETECTION KEY TO ERADICATION

Words by Helen Barnes : General Manager, TomatoesNZ Inc.

Early detection of an unwanted virus – the Tomato brown rugose fruit virus (ToBRFV) – in a small tomato seed lot has allowed quick action to be taken to contain and prevent it taking hold in New Zealand. All the seeds and resulting plants and plant material have been destroyed.

The virus has had a huge impact on tomato growing in countries where it is present. It is easily transmitted on people, plants and equipment and is very difficult to get rid of. It also affects capsicum.

ToBRFV is a virus that we have been talking to the Ministry for Primary Industries (MPI) about for the past 12 months. TomatoesNZ pointed out the need to strengthen seed import requirements, and new certification and testing measures were put in place early last year to try and minimise the risk of it arriving here.

In early December, industry alerted Biosecurity New Zealand to the presence of ToBRFV in seeds imported from Israel. Although these seeds were imported with a phytosanitary certificate declaring them to be free of ToBRFV based on testing completed offshore, further testing identified a very low level of infection.

ToBRFV on green fruit

ToBRFV on red fruit

This virus is something that we don't want our growers here to have to face. The industry needs to acknowledge the quick reporting of the seed company, and cooperation of the affected parties, as well as MPI's quick action to eliminate any risk in this case. We worked closely with MPI during this process, as a GIA (Government Industry Agreement) partner, along with Vegetables New Zealand (for capsicums) and Process Vegetables New Zealand (for process tomato growers) and NZ Plant Producers Incorporated (for the nurseries).

Biosecurity New Zealand has been able to account for all of the imported seeds and the plants grown from them. There have been no symptoms or positive tests for ToBRFV from the plants grown from the seeds, which have been restricted to three greenhouse sites in Auckland. While there is no reason to suspect there has been any spread of the disease, all the plants grown from the contaminated seed have been destroyed to manage any residual risk. The three greenhouse sites have also been thoroughly cleaned and disinfected.

As a further precaution, Biosecurity New Zealand destroyed some tomato plants grown from different, uncontaminated seeds that were grown in close proximity to the affected plants at one of the sites.

TomatoesNZ and the GIA partners mentioned above will be contributing a 'cost share' towards the biosecurity response costs, which will include any compensation claims from the affected parties. MPI pays 50% of the cost of the response, and the GIA partners split the other 50%. The total response cost is not yet known; however, it will be a lot less than what an outbreak of this virus would have cost the industry.

Tomatoes NZ's share of the response costs will be paid from funds that are already being collected under the Fresh Tomato Biosecurity Levy. These levy funds are already also going towards response costs for Fruit Fly (2019) and Tomato Red Spider Mite (2020).

We have had an intense couple of years of working with MPI on biosecurity responses where tomatoes are an impacted crop. Although we would prefer not to find ourselves in a situation of having to respond to new pests, because of the GIA partnership we have been able to ensure that decisions relating to these new pests are the best ones for the industry, balancing the costs of responses with the potential impact of the new pest.

Even though we are confident that the ToBRFV risk has been contained, I recommend that growers review their biosecurity practices and familiarise themselves with the signs and symptoms, and report anything suspicious immediately to the MPI hotline 0800 80 99 66.

TomatoesNZ has resources available for growers on good biosecurity practices and on the signs and symptoms of this virus. These can be found under the "biosecurity" tab of the TomatoesNZ.co.nz website, or posted to growers on request.

There are also some excellent international resources available online:

- The European and Mediterranean Plant Protection Organisation (EPPO) website **https://gd.eppo.int/taxon/TOBRFV/photos**
- The Agriculture and Horticulture Development Board, UK **https://ahdb.org.uk/knowledge-library/the-symptoms-of-tomato-brown-rugose-fruit-virus-tobrfv**

Changes to the ETS

This year there are changes to the Emissions Trading Scheme (ETS) with the introduction of auctions, with the first auction scheduled for 17th March 2021. Information about these changes, including the phasing down of industrial allocations, is provided on pages 50-52.

Energy efficiency

We hope you have been finding the monthly series of articles by Elly Nederhoff on glasshouse energy efficiency informative. The latest article is on pages 44-45 and describes the techniques that Dutch growers have been integrating in the past 10 years to significantly reduce energy use and improve production. We would welcome any comments or feedback you have on the articles and the suggestions they present.

Exports

Exporting fresh tomatoes has been made more difficult this season with the decrease in the number of flights due to Covid-19, and subsequent high cost of the limited available freight space to our export destinations. We have been liaising with MPI on air freight requirements. MPI is coordinating with NZ Transport for support on airfreight through an International Air Freight Capacity Scheme which is in place until the end of March 2021. An objective of this is to maintain connectivity with key trading partners for exports.

Fresh tomatoes are also exported by sea especially to the Pacific Islands. Sea freight has been problematic over recent months due to heavy congestion at Auckland port and strikes at Australian docks, with some vessels opting not to stop at all scheduled ports due to delays and a shortage of suitable containers for export.

While Australia normally receives over 100 tonnes of fresh New Zealand tomatoes in November, last year they only received two tonnes in that month. Demand from the Pacific Islands has been lower than usual because there are no tourists in the Pacific Islands to eat the high-quality tomatoes in their hotels and restaurants; and there has also been little demand for our tomatoes from Australia.

There have been no exports to Vanuatu, Wallis & Futuna, Taiwan and the United States since Covid, and exports to Thailand are well down.

On the other hand, exports to Japan continued well, with only a relatively small drop from 573 tonnes during September to November 2019 to 554 tonnes during the same months in 2020.

Tomato greenhouse crop maintenance automation project update

In December, Auckland based board members attended the first update on a labour-saving automation project that TomatoesNZ is investing in with greenhouse engineering specialists FTEK Limited. The team at FTEK updated attendees on the progress of a three-stage automation project. Stage One began in mid-2020 with the team evaluating key greenhouse tasks and looking at how technology can be used and adapted over time.

James Currie of FTEK says that to develop something that will work for growers "the key is using technology they already know and customers they already work with."

Stage One of the project runs through to the end of 2021, with plans to start early pilot trials in early to mid-2022. The next project update is scheduled for May and we will share information on this exciting innovation for the industry as the project develops.

USE BIOAVAILABLE MAGNESIUM TO IMPROVE PRODUCE QUALITY

Magnesium (Mg) is the powerhouse behind photosynthesis in plants. Without adequate Magnesium, chlorophyll cannot capture sun energy needed to photosynthesise. It aids in plants' ability to form sugars and starches and is needed to give the plants their green colour. Mg is involved in many aspects of plant metabolism, encouraging healthier crops with improved quality produce and nutrient value that is passed to our food.

Early symptoms of Mg deficiency impairs the development of sink organs such as roots relative to shoots, which is particularly critical for those crops storing substantial carbohydrates or oils in tubers, bulbs, and grains. Particularly for these crops, high quality produce strongly depends on sufficient Mg availability (Grzebisz 2013).

The key to having optimum uptake of your applied Magnesium is to choose a formulation that is highly bioavailable, such as BIOMIN amino acid chelated Magnesium. Bioavailability ensures high absorption, little runoff or wasted product and less biochemical energy utilised by plants.

BIOMIN minerals utilise advanced technology whereby the molecules are chelated in amino acid Glycine. Plants readily absorb Glycine, and systemically transport it to

areas of the plant where it is needed most. This higher uptake means less product is needed, and therefore less tractor runs to apply it.

A study investigated the effect of $MgSO_4$, Amino-acid chelated Mg (Mg-AA), and Mg-EDTA on quality parameters of Chinese cabbage (Han et al. 2010). Concentrations of chlorophyll, soluble sugar, soluble protein and vitamin C were increased only by Mg-AA chelate, whereas the other Mg sources increased yield only.

In addition to choosing a bioavailable Magnesium for more precise nutrient application, a Fulvic acid plant electrolyte for overall health and performance of crops should be considered.

Dubbed as mother nature's 'battery', a concentrated fulvic acid product applied to any crop will have noticeable positive improvements. Fulvic acid, like Magnesium, increases plant chlorophyll and helps to improve crop health by increasing the uptake and effect of all nutrients both soil or foliar applied.

For example, a capsicum grower adding fulvic acid to their nutrient mix appeared to have lifted mineral levels in the plants in just seven days. The leaf tissue analysis showed levels of Calcium, Magnesium, Zinc and Boron increased in the seven day period, even though the nutrient mix remained the same. The addition of Mobilizer (a fulvic acid product) enabled higher utilisation of the nutrients being applied, while also reducing sodium levels supporting numerous other findings around fulvic acid.

Growers should ensure adequate Mg supply required for maximum yield, which at the same time will ensure optimal crop quality. However it is also important to look at more available formulations and improve the utilisation of applied minerals. The significance of Magnesium and Fulvic acid and their impact on Nitrogen and Phosphorus metabolism and assimilation should not be dismissed.

For more information contact Roots, Shoots & Fruits on **rsf@rd2.co.nz** or on **09 372 9155**

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FOR SALE (POA)

MICRON VARIDOME INTER-ROW SPRAYER

Horticulture sprayers from Micron Group can help growers improve weed control, reduce their dependence on the use of selective products and cut herbicide cost by offering a highly targeted and accurate spraying solution.

Employing innovative application technology, Varidome incorporates a fully shielded design for vegetables which can safely erradicate weeds growing in between rows of crops and in wheelings. With proven 95% drift reduction, Varidome awards users improved chemical placement and enables the use of a wider range of herbicides, including non-selective products, allowing for effective removal of persistent weeds such as black grass.

Spray width can be adjusted on each individual shield enabling users to treat the desired bands in different crops and varying growth stages. Varidome Shields are mounted on individual carriages with ground following wheels for independent operation. This enables Varidome to follow the contours of the terrain keeping each shield in close contact with the ground to further minimise spray drift.

- Suitable for a wide range of crops
- Over 95% drift reduction
- Significantly reduced chemical and water usage
- Adjustable spray width to suit the crop
- Improved chemical targeting

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Lettuce grow green with Enza Zaden.

ENZA ZADEN

Enza Zaden New Zealand celebrates a year of helping growers 'Go Green' via direct sales during 2020, over 100 years of vegetable breeding, and over 30 years of indirect sales in New Zealand. Developing a new, direct and positive way of doing business is rewarding and we develop closer relationships between growers and breeders. The reaction by growers, to shorten the supply chain and to be able to give direct feedback, is positive. We have all had our challenges in the past year but the amazing character, generous spirit and tenacity of vegetable growers has been a massive inspiration to us. We continue to shorten the distance between growers and our breeders.

As a company and individuals we are very open, with high transparency, some people say we overshare our breeding and product development. Enza Zaden only uses global names to make global communication easier. In the last year oversharing gave insights to solve problems. That helps us to make the world a greener, profitable and more caring place for growers.

The lettuce market is one of constant change, where experience and strong breeding are needed to produce the standard varieties of today and in the future. Lettuce is a product full of diversity (shape, colour, texture, taste), specific market and climatic requirements, plus evolving resistance to fungal disease. After many years of supplying the New Zealand lettuce market (sometimes under different names) we are excited to offer a new range of lettuce by the same great breeding team, while continuing to supply the existing range of varieties. Enza Zaden NZ has all of the varieties you know and love that were available in previous years with very few exceptions. Ask us for the latest trial varieties.

Please call us direct on 09 963 0122 to request seed or know the availability of any of our varieties. Contact Beverley Vahai 021 193 1008 or sales@enzazaden.co.nz for customer support.

For technical advice on open field crops, contact Aneil Hari 021 367 242, or sales manager Herman van der Gulik, 021 858 939

For glasshouse crops: Louise Millar 021 711 709.
www.enzazaden.co.nz

"Lettuce help you grow your business. We love finding new and established varieties that work for growers. We can supply many varieties recently unavailable or discontinued at other outlets." says Herman van der Gulik, Sales Manager, Enza Zaden New Zealand.

INTRODUCING ENZA ZADEN LETTUCE

AUTUMN ICEBERG:
Nolaf NEW! autumn to late autumn, medium size, dark green colour, sure heading and fast maturing, adaptable.

Kravitz NEW! autumn harvest, faster maturing, medium sized, fast filling, sure heading, good tolerance to pinking.

Witiza NEW! autumn harvest, medium to large-sized heads, highly uniform, dark green, sure heading smooth leaf.

AUTUMN – WINTER ICEBERG:
Pedrola, autumn standard, reliable, adaptable, produces medium sized heads with high pack out in changeable weather.

Diegola, robust, adaptable winter variety, large frame and good wrap for head protection, uniform round heads.

Botiola (Icebreaker), winter standard, reliable, large size heads, firm heads with good volume, even under adverse conditions.

SPRING ICEBERG:
Pedrola, spring standard, reliable, adaptable, produces medium sized heads with high pack out in changeable weather.

Nolaf NEW! spring and autumn, medium size, dark green colour, sure heading and fast maturing, adaptable.

Berruguete NEW! true spring variety, med-large head and frame, cold tolerant, versatile, uniform and high cut out, strong against big vein.

EAZYLEAF - YEAR ROUND:
Wildebeast, standard high yielding mid-dark green incised coral, serrated spiky leaves, fine leaf attachment with crisp texture, pair with Rhone.

Rhone, high yielding deep red incised coral type, spiky serrated leaves, fresh green highlights, fine attachment, pair with Wildebeast.

Budgee, compact green multi cos type, great taste, many leaves of the same size, perfect for salad mix leaf.

GREEN OAKLEAF:
Alvier NEW! mid green fresh shiny oakleaf, with smaller lobes, very uniform, high yield of well filled heads, open field and NFT, year round production.