NZGROWER®

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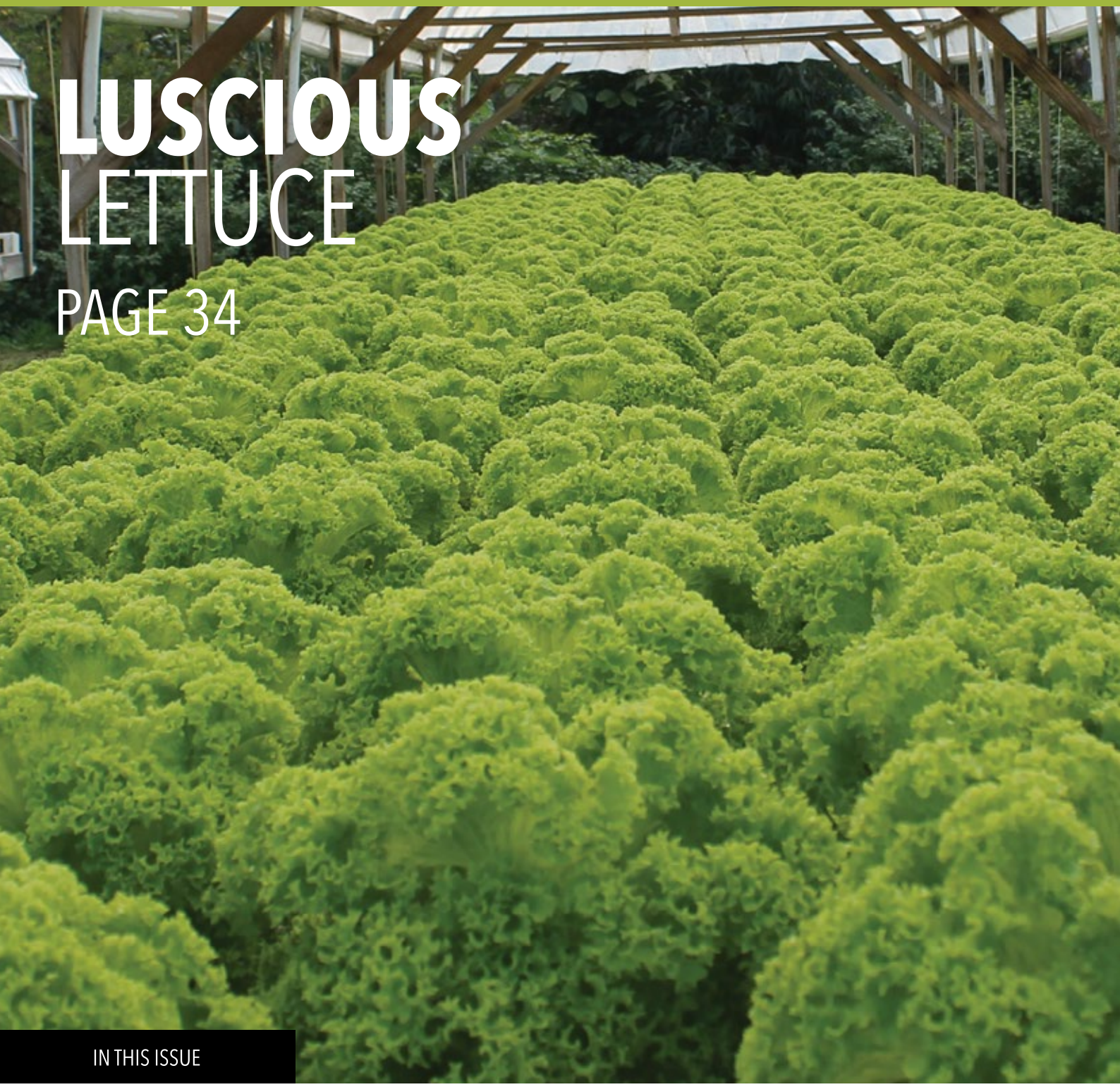
HORTICULTURE NEW ZEALAND



LUSCIOUS LETTUCE

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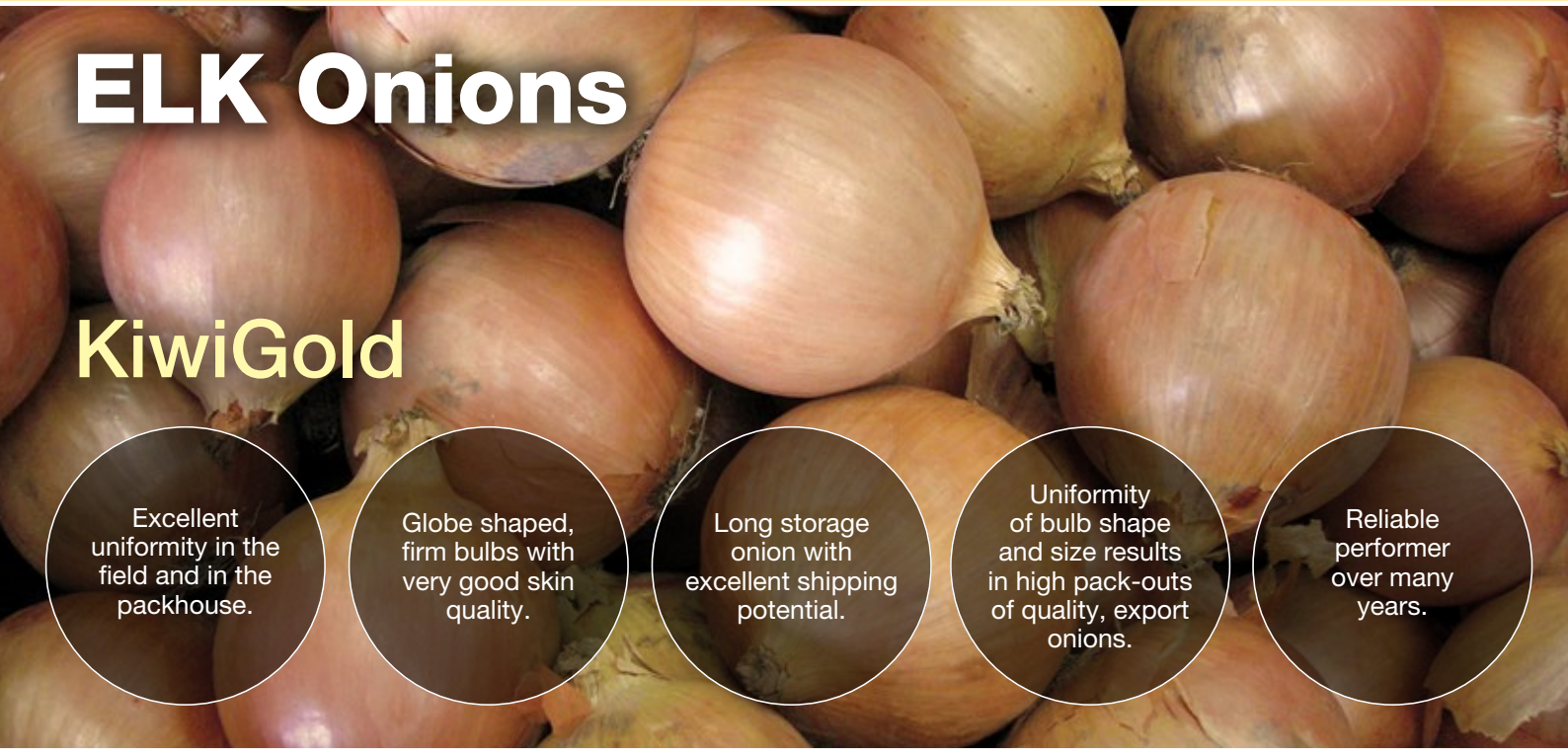
Thinking vegetable seeds? Think **Terranova.**



ELK Onions

KiwiGold

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- Long storage onion with excellent shipping potential.
- Uniformity of bulb shape and size results in high pack-outs of quality, export onions.
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- Vigorous ELK type with strong plant growth.
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Kiwi consumers keep salad business going, see page 34
Photo by Elaine Fisher

WHAT'S NEW

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

BACK TO THE FUTURE

Words by Barry O'Neil, President : HortNZ

New Zealand is famous (infamous maybe!) for the radical reform period it went through from the mid-1980s when – due to the country being bankrupt – numerous government support systems were removed basically overnight, and the country became one of the most liberal in the world when it came to trade policy.

Unfortunately, the speed of these reforms was brutal for many and rural communities took years to recover.

Thinking back, it's amazing how interventionist New Zealand was leading up to these reforms. Trade in manufactured goods was restricted, exchange and interest rates were fixed, businesses were heavily regulated, and the state sector was large, very large.

In 1984, the public service employed more than 66,000 people. By the end of the 1990s, that number had fallen to 30,000. But it has grown again, and last year was just over 57,000.

In the case of agriculture, government subsidies made up an average of 32% of farm income in the early 1980s, which equates to about 4% of the then total Gross Domestic Product (GDP).

I've always been amused by one piece of legislation, The Margarine Act of 1908, which showed how powerful the agriculture sector was even back then, as the act prohibited the manufacture of margarine in New Zealand due to it being seen as a direct threat to our dairy industry. Motor vehicles were another area that government heavily controlled via import licences and foreign exchange controls. In 1984, before controls were lifted, New Zealand had 14 car assembly plants, and even its own, albeit very inferior, version of a Land Rover called the Trekka!

In 1950, New Zealand ranked eleventh in GDP per capita among Organisation for Economic Co-operation and Development (OECD) countries. Growth was strong through to the 1960s and things seemed to be going well. And yet, although the economy was growing, it was growing much faster in other countries. By 1969, New Zealand had slipped to twentieth place, and we are now fifty-second.

There were also significant events that led to the reforms in the 1980s, including in 1973 when Britain, which was then taking 30% of our exports, entered the Common Market. Around the same time, the first Organisation of the Petroleum Exporting Countries (OPEC) oil shock hit, tripling the price of oil.

Collectively, this resulted in annual inflation of up to 17%, rising unemployment, and to make things even worse, a very large debt, servicing of which took 15% of the government's total expenditure.

Agricultural subsidies accounted for nearly 40% of the budget deficit in 1985. Between 1982 and 1985 the government, through the Ministry of Agriculture and Fisheries (MAF), paid out $1.7 billion in Supplementary Minimum Payments (SMPs), mainly to sheep farmers.

Something had to change. New Zealand just couldn't afford to continue down the slippery slope that it was on as there was nothing left in the piggy bank. Also, due to delays in embracing necessary reforms over the previous decades, change had to happen fast if the country was to survive economically.

David Lange's Labour Party swept National from power in the 1984 election, and despite its socialist roots, the new government introduced radical free-market reforms. These reforms became known as 'Rogernomics', after controversial Finance Minister, Roger Douglas.

New Zealand's agricultural reforms were part of a larger wave of reforms that totally changed the country between 1984 and 1993. I have read that a way to describe these reforms is to say that they ended the 'informal welfare state' – the excessive and complex web of interventions that had shielded firms and workers from the market for the previous 40 years. Shielded farmers and growers from the market, a great descriptor!

The reality was these were really tough times for New Zealand and New Zealand farming, not helped by the stock market crash in 1987. When Lange's government decided to cut agriculture assistance, they estimated that 20% of farmers would lose their farms.

Land use change and the growth of horticulture

One of the biggest changes in the reforms was land use change from sheep to dairy, and the growth of the deer, forestry, horticulture and wine industries. Total pastoral land declined from 14 million hectares in 1983 – when subsidies allowed farmers to develop marginal land into pasture – to 12 million in 2004.

Without subsidies, and to survive, New Zealand needed to produce what consumers were prepared to pay for. This situation resulted in significant change to what we farmed and grew, which also and not surprisingly, resulted in economic prosperity greater than had been available under subsidies.

New Zealand's 20th century history has taught us many things. That changes in farming and growing are constant. That when governments intervene they often get it wrong, and that if reforms are needed, the longer we delay implementing them the more painful it is going to be.

Fast forward to 2021. We have entered a period of reforms in New Zealand agriculture that are as significant as what happened during the 1980s. They will ultimately result in major land use change, and cause significant changes to the way we farm and grow. But if we get the reforms right, they will also result in the country being even more successful, as was the case after the 1980s' reforms.

The reforms I am talking about are manyfold. Climate change, and how we can continue to farm and grow in a very different climate.

The need to become carbon neutral to stop global warming. Freshwater reforms and the need to return our environment to a healthier state. Labour reforms and moving to a more highly skilled and permanent workforce. Resource Management Act (RMA) reforms to allow growth without major negative impacts. And an honest partnership with Māori to address major inequities and resolve long-standing Treaty issues.

Farmers and growers are resilient, adaptable, innovative and responsive to consumer signals. The more affluent consumers we sell to – and need to keep selling to – are signalling very clearly what they want and expect from us.

Let's act

The longer we delay embracing and changing how we grow and farm to address the current reform imperative, the harder it will become and the more sticks government will use to try and get us to change to what they believe are the needed results.

We know from history that using sticks to make change rarely works, and that governments when they do use them, often get it wrong. So as an industry, let's not hold off and wait until we are being forced to do something. Let's as growers and farmers get on and do the right thing to make the needed changes.

Today's reforms don't need to be as brutal as those of the 1980s. But they will, if we get it right, put New Zealand on the best path for the future well-being of our children, and our children's children. ●

Total pastoral land declined from

14 MILLION
HECTARES IN 1983

→

12 MILLION
HECTARES IN 2004

NZGROWER

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Your Levy AT WORK

MPA Associate Member (NZ)

Horticulture™ New Zealand Ahumāra Kai Aotearoa

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CREATING VALUE

Words by Mike Chapman, Chief Executive : HortNZ

As New Zealand and the world recovers and moves on from Covid-19, anyone in the business of selling anything will need to re-evaluate their business model.

They will also need to assess how they can create premium returns so that they can stay in business. What worked before Covid-19 struck will not necessarily work in the post-Covid world. It will be necessary to reassess what is being offered and how it is being offered to the purchasers of the product.

This reassessment applies equally to horticulture. Fruit and vegetables have four significant advantages over other products:

1. Healthy food. Covid-19 has taught the world the importance of healthy food. Consumers will need to be reminded of the importance of healthy food, but this is a head start over other products.
2. Tiny environmental footprint. In New Zealand we grow all our fruit and vegetables on less than 100,000 hectares. Fruit is climate and water quality positive, and where this is not the case this situation is being progressively reversed. Balancing the small footprint against the rapid environmental improvements and the need for healthy food, the outcome is on the plus side of the ledger.
3. Sustaining rural communities. The fruit and vegetable industry employs a large number of people and although there is increasing mechanisation, we will always employ many people. There are many skilled jobs in our sector and as mechanisation increases, the number of skilled jobs is increasing. Across the country around 60,000 people are employed in horticulture. This helps sustain our rural communities.
4. Provenance. Being grown in New Zealand with the combination of the first three factors above is an enormous marketing advantage. New Zealand has stood out in the world through our Covid-19 response and New Zealand has the reputation as one of the best places to grow high quality healthy food.

These four factors, and they are not the only ones, drive a value equation for consumers. The challenge is how do we get consumers worldwide to recognise this value and in turn pay for it? This is the question that Horticulture New Zealand is grappling with at present. How to create that value proposition that empowers the status of our product in the eyes of consumers?

There is one other issue and that is how do we ensure that the grower of the produce gets a fair return? Everyone involved in the supply chain needs to be fairly remunerated and that includes the grower. This is in part because the issue of equity is equally important for consumers. As all of New Zealand makes changes to mitigate climate change and improve the quality of freshwater, the prices we pay for everything will increase. The Climate Change Commission's recently released draft report notes that climate adaptation will result in a 1% reduction in GDP (Gross Domestic Product) over the next 15 years, costing New Zealand $4 billion a year. Added to that are the costs of changes to the minimum wage rate, increases to sick leave entitlement and a new public holiday, estimated to cost $2 billion a year. And then there are freshwater changes estimated conservatively at $6 billion. Consumers and ratepayers are going to have to pay all these costs. Some of the costs may be taken up by suppliers, but even if they are, the majority of the costs will fall to the public of New Zealand and the world.

Consumers are increasingly wanting food that meets the four significant advantages set out above. As the price rises, consumers will also want to know what they are paying for, and will want to know how much everyone in the supply chain is making. This is where transparency comes in. It is possible in this digital age to have complete transparency and fully inform the consumer about everything they are buying – how healthy it is, its environmental footprint, its support for rural communities, its provenance, and how much everyone in the supply chain is making off the product. The question HortNZ is working on is creating the value that both the consumer and the grower are looking for, and transparency is one of the key value creation drivers. ●

Horticulture™
New Zealand
Ahumāra Kai Aotearoa

Send us your nominations for the

2021 Horticulture Industry Awards

HortNZ is calling for nominations for its 2021 Awards to be presented at the Horticulture Conference Gala Dinner.

HortNZ will present up to one award in each of the following categories each year.

BLEDISLOE CUP
Awarded for an outstanding and meritorious contribution to the New Zealand horticulture industry.

PRESIDENT'S TROPHY
To celebrate and develop inspiring leadership within the horticulture industry.

INDUSTRY SERVICE AWARD
To recognise people with long and dedicated service in a supplier or service role (not a grower) that have worked beyond the call of duty for the betterment of the horticulture industry.

ENVIRONMENTAL AWARD
To recognise a person, or organisation, that has developed and implemented a sustainable environmental project, with identifiable benefits.

HORTNZ LIFE MEMBER
To recognise growers with long and dedicated service as office holders of HortNZ and/or an affiliated Product Group or affiliated Grower Association.

Full criteria for the above awards are available on the Horticulture New Zealand website or can be requested from the Board Secretary.

Who can make nominations?
- Any grower member of HortNZ, an affiliated Product Group or an affiliated Grower Association can make nominations.

How do I nominate someone?
- Complete a nomination form. These are available on our website **www.hortnz.co.nz** or by contacting HortNZ by calling 04 494 9983 or emailing Board Secretary, Kerry Norman (**Kerry.Norman@hortnz.co.nz**)

When will the awards be presented?
- At the 2021 Horticulture Conference Gala Dinner on Thursday 5 August at Mystery Creek, Hamilton.

When do nominations close?
- Nominations must be sent to the HortNZ Board Secretary, Kerry Norman (**Kerry.Norman@hortnz.co.nz**) or PO Box 10232, The Terrace, Wellington 6143 and must be received by **5.00pm on Tuesday, 8 June 2021.**

Send us your nominations now!

YOUR LEVY AT WORK

INDUSTRY WIDE ISSUES FOR INDUSTRY GOOD

NATURAL RESOURCES AND ENVIRONMENT

WATER

Otago Plan Change 7

Otago PC7 is an interim plan change to roll over expiring water consents and deemed permits. The short-term plan change is required to give Otago Regional Council the time to undertake scientific research and work with iwi and the community on the vision, values and freshwater outcomes for the Otago catchments, required by the National Policy Statement for Freshwater Management (NPSFM).

Horticulture New Zealand appeared at the Environment Court Hearing in Cromwell in April. HortNZ presented legal, planning and economics expert evidence and were supported by two growers. The growers provided detailed evidence on their growing systems, water use and the history and application of the deemed water permits, some of which date back to the gold mining era, and are due to expire this year.

HortNZ understands the transitional nature of the plan. We are weary of the Council continuing to over-allocate water in catchments, where users will be faced with claw-backs in the future. With this in mind, for most people a short-term rollover will be acceptable, on the understanding that a robust and comprehensive Freshwater Plan is developed by 2024. In our view, it is critical that a pathway exists within PC7 for growers to seek longer consents or larger irrigated areas, provided they can demonstrate they can use water in a manner that has minor environmental effects and aligns with achieving the objective of PC7, which is to transition towards the long-term sustainable management of water resources.

Horizons Plan Change 2 Decision

Horizons Regional Council have adopted the PC2 decision. HortNZ presented legal, planning, economic and water quality evidence at the hearing, and a number of growers explained their operations. Through our submission and evidence, we were able to explain the importance of crop rotation, the importance of vegetables grown in the Horizons region within New Zealand's food system, and the commitment most growers have made to implementing freshwater farm plans.

> **"The provisions for existing growers within target catchments will require significant reductions in leaching for some growers**

The provisions will be tough for many growers, but the plan change is a significant improvement on the One Plan and the notified PC2. The decision version of PC2 includes a definition of crop rotation, updates the controlled activity leaching maximums, and provides a consenting pathway for existing growers who cannot meet the controlled activity leaching maximums. The opportunity to expand vegetable growing is limited to those rotations that can meet the updated leaching maximums.

The provisions for existing growers within target catchments will require significant reductions in leaching for some growers. Existing growers who cannot achieve the reductions have a discretionary consenting pathway where an argument about domestic food supply can be made. Consent duration is a matter that the Council will consider on all consent applications.

PC2 is designed to be interim. Horizons need to develop another plan change before 2024. PC2 may be appealed to the Environment Court.

CLIMATE CHANGE

He Waka Eke Noa

He Waka Eke Noa is a partnership between iwi, government and the primary sector to manage agricultural emissions. Agricultural greenhouse gas emissions include emissions from animals and those from fertiliser.

He Waka Eke Noa milestones require that all farms larger than 80ha know the amount of agricultural greenhouse emissions they produce by the end of 2022, and all farms larger than 80ha have a plan to manage and measure emissions by the end of 2025.

FARMS LARGER THAN 80HA MUST:

KNOW THE AMOUNT OF AGRICULTURAL GREENHOUSE EMISSIONS THEY PRODUCE BY THE **END OF 2022**

HAVE A PLAN TO MANAGE AND MEASURE EMISSIONS BY THE **END OF 2025**

Horticulture™ New Zealand
Ahumāra Kai Aotearoa

CONTACT US
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BIOSECURITY BUSINESS PLEDGE GATHERS MOMENTUM

Words by Anna Rathé : Biosecurity Manager, HortNZ

Signatories to the pledge

Will you commit to playing your part?

The Biosecurity Business Pledge is a partnership that aims to help all New Zealand businesses take a proactive approach to their biosecurity practices. The pledge was launched in October 2019 and has continued to gain momentum – there are now more than 80 businesses who have signed up and publicly demonstrate their commitment to biosecurity. Companies taking part range from ports and airports to primary producers, distributors, freight companies, research organisations and more. It's great to see so many diverse businesses taking biosecurity seriously and implementing steps that ultimately protect growers and farmers from biosecurity risks.

> **"There are now more than 80 businesses who have signed up and publicly demonstrate their commitment to biosecurity**

The pledge was developed by industry organisations in partnership with Biosecurity New Zealand to provide a framework for managing the risk of unwanted pests and diseases (plant or animal) disrupting individual businesses or even whole sectors.

> **"Taking a proactive approach to biosecurity is not only good for an individual business or sector but helps protect our economy, unique natural environment and our way of life**

This framework for action makes biosecurity a core part of operational activity and assists businesses to meet their corporate and social responsibilities. Businesses commit to being an active part of New Zealand's biosecurity team of all New Zealanders by integrating proactive biosecurity practices into their operations and supply chains. Taking a proactive approach to biosecurity is not only good for an individual business or sector but helps protect our economy, unique natural environment and our way of life.

When a business signs up to the pledge they are committing to:

- actively seek to understand and manage the biosecurity considerations associated with their business activities;
- promote a culture of proactive biosecurity management within their operations, across their business, around their board tables, and across their teams;
- incorporate biosecurity into their procurement policies that guide the selection of goods, travel, logistics, and service providers;
- take opportunities to support their customers, staff, suppliers and stakeholders to understand the importance of biosecurity and what good biosecurity practice looks like;
- approach biosecurity with the view that it is everyone's responsibility, that risk is best managed offshore, and that it will actively engage with Biosecurity New Zealand to support better biosecurity outcomes for New Zealand.

Companies taking part range from:

Ports

Research Orginisations

Primary Producers

Any business can sign up to the pledge, including horticultural operations. Joining the pledge demonstrates that your business is committed to protecting our industry from biosecurity threats. Becoming a participating business also provides you with access to members forums and online seminars where senior members of the Biosecurity New Zealand team share the latest insights in the pre-border, border and post-border working environment. Sign up to the pledge and play a part in protecting your assets, your industry, and New Zealand's natural environment, lifestyle and livelihoods.

GROWER'S LIFESTYLE 'LANE CHANGE'

Words by Elaine Fisher

Robyn Wickenden at work on the Mya Enterprises tamarillo orchard in Northland

Each of the 2,200 trees on the Mya Enterprises tamarillo orchard are identified by a number and letter code, and during weekly checks their health and productivity is recorded on an app.

Those details are transferred to a spreadsheet enabling owners Robyn Wickenden and Aaron Davies to quickly identify pests and disease or other issues occurring on the orchard.

The methodical and IT approach to orchard management is unsurprising given that Robyn has 29 years of experience in corporate accounting and Aaron 32 years in IT.

"We bring a different approach to traditional horticultural management, but I think skills from the business world are really helpful in the horticultural industry," says Robyn, who is chair of the New Zealand Tamarillo Growers Association and a member of Women in Horticulture.

The couple made what Robyn calls "a lane change rather than a sea change" in 2016 when they decided to leave corporate life and Auckland's North Shore with its sea views, for a rural location inland from Whangarei.

"We both wanted something different that we could do together. We had always had a well producing vegetable garden so decided to look at horticulture."

The couple investigated avocados, olives, growing grapes for wine, and market gardening. "We looked at a market gardening property which had a few spindly tamarillo trees and decided to find out more about growing them."

That research revealed that tamarillos are a tricky crop to grow, and that not a lot of information about their management is available. However, undaunted, Robyn and Aaron decided they were up for the challenge. "In November 2016 we bought a four-year-old tamarillo orchard."

> **"…tamarillos are easy to grow and hard to keep alive…**

The catch phrase the couple have posted on the NZ Tamarillo Growers Association webpage, "tamarillos are easy to grow and hard to keep alive" sums up what has become a truism for the industry since the tomato potato psyllid and the disease liberibacter which it carries, began infecting trees in New Zealand in 2008.

"One of the reasons there is not much information about growing tamarillos is because they used to be really easy to grow. That's not the case now, and the only way to control the psyllid is to spray every two weeks."

With the advice and guidance of their horticultural advisor Rhod Mitchell from HortiCentre, and extensive reading of management and scientific papers, Robyn and Aaron are constantly upskilling to meet their aim to grow premium quality fruit.

That's something they are achieving season on season, with their export quality fruit being sent to the United States by Fresh Produce Group, which is licensed under the NZ Horticulture Export Authority to export tamarillos. "Last season Fresh Produce Group was only able to secure one export flight a week. In previous years we could have fruit in market three days after picking. There is uncertainty around the availability of flights this season."

Local market fruit is distributed mainly to Palmerston North and Wellington, by the cooperative MG Marketing.

The NZ Tamarillo Growers Association has about 35 to 40 commercial grower members spread from Northland to the top of the South Island. Because of temperature variations, harvest begins at different times in each region, so there's a supply of tamarillos from late March to November.

> "I like to be considered every bit a horticulturalist as my husband

Last year Robyn was appointed as an associate director of MG Marketing, a non-voting position on the board for those who have an interest in corporate governance and aspire to director level roles. She is also about to undertake a Cooperative Business New Zealand corporate governance course.

Robyn says there's still a perception that men do all the work on orchards. "I like to be considered every bit a horticulturalist as my husband. I'm right there beside him doing virtually every job on the orchard."

To keep up to date with Women in Horticulture news and activities, join our membership database by emailing **info@women-in-hort.nz.**
We welcome everyone.

FANTASTIC FUTURES

Words by Anne Hardie

Robyn Patterson (far right) from GoHort talks with students about careers in horticulture

The diversity of careers on offer in the horticulture industry was on show at the Fantastic Futures micro expo in Nelson last month (April) where about 100 secondary school students contemplated their next step.

Fantastic future career options covered infrastructure, farming, fishing, food, forestry, fruit and fun (tourism) to give students some insight into what careers are possible and what those careers entail. Local schools were invited to select year 11 and 12 students to spend the day at the micro expo which was run like a small conference with an opening keynote speaker, some breakout sessions and a closing speaker. The breakout sessions included young people working in key industries who shared their career journey with the students.

Part of the day involved students rotating around businesses representing each sector, with each adding an interactive element into their session. Each business or group talked to groups of students for 10 to 15 minutes about the jobs involved within their organisation so young people had the opportunity to see 'behind the curtain' of each industry.

The micro expo was organised by Nelson Tasman Chamber of Commerce, Careers and Transition Education Association NZ, Ministry of Education and the Nelson Regional Development Agency.

GoHort Nelson Tasman careers progression manager Robyn Patterson says the day targeted students interested in those sectors and described the interest from students as "fantastic." At the GoHort stand, the student-created card game 'Pathways to Primary' which depicts the various careers available within the horticulture industry, was a way of showing the diversity. The card game was created by five Waimea College business studies students last year after they discovered there was a lack of information about careers in primary industries. Each card outlines a career with its salary potential, length of training, hands-on level, and rates its job opportunities.

The cards provided the opportunity for students at Fantastic Futures to discuss some of those career possibilities, and they also got to win a bag of dried kiwifruit snacks if they guessed the number of apples in a bowl.

YOUR INDUSTRY

ACROSS THE SECTOR – ACROSS THE COUNTRY

34 SUCCESSFUL SALAD BUSINESS

SLOWING DOWN AND FAMILY TIME KEY

FARMSTRONG™ Live Well Farm Well

Words by Maggie McNaughton

Allan Fong

If Pukekohe market gardener and chief executive of The Fresh Grower Allan Fong could dish out one piece of advice to his younger self, it would be to slow down and spend more time with his family.

The 65-year-old has recently stepped back from the job that has consumed his life since he was a youngster.

"My parents were from China and they started their own vegetable growing business in Pukekohe in 1950 and us kids would help out before school and after school every day," Allan says.

Allan and his younger brother Colin eventually took over the farm and recently Colin's three sons have taken up the reins.

"In the last 18 months I've stepped down a bit and am letting the young ones coming through take over a lot of the operational activities."

Being a business owner is very high pressure and takes a toll on your health if you're not careful, says New Zealand-born Allan.

"It's not a 9am to 5pm job and there is constant pressure. When I was younger, I used to work crazy hours. I was working 100 hours a week, seven days a week and then about 20 years ago I had a stroke. I had to learn to quieten down a bit and take it easy," he says.

"I make sure I tell the young ones starting out to take breaks and have time off for holidays, take Sunday off, so they have more balance in their lives."

Vegetable growing challenges

Allan says vegetable growing doesn't have a high profile in New Zealand like pastoral farming or the kiwifruit industry does, however, it provides healthy, affordable food all year round.

> "One-third of our staff are usually backpackers, and with the borders closed it's very challenging to find people who like working in this industry, which in turn has a negative effect on our productivity

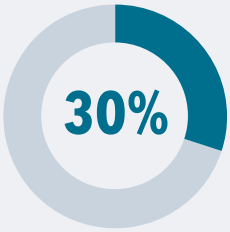
"Our industry doesn't receive government subsidies or grants and we aren't part of a cooperative, so we very much have to stand on our own two feet."

He says the vegetable growing sector is very competitive and as a result many growers have left the industry.

"For example, thirty odd years ago there were approximately 33 Chinese families vegetable farming in the area, now there are less than a handful. High compliance requirements and costs also contribute to the reduction of farms."

And Covid-19 has been particularly challenging.

"One-third of our staff are usually backpackers, and with the borders closed it's very challenging to find people who like working in this industry, which in turn has a negative effect on our productivity," Allan says.



HOSPITALITY BUSINESSES, SUCH AS RESTAURANTS, HOTELS AND TOURIST RESORTS, REPRESENT 30% OF OUR REVENUE

"Hospitality businesses, such as restaurants, hotels and tourist resorts, represent 30% of our revenue. When lockdown happens and they close, it results in crops being unharvested and therefore a loss of income and jobs."

Getting resource consent is another challenge.

"We've been trying to build a new vege packing shed for the last four years and only have three out of four consents ticked so it's very challenging and slow."

Having a break and delegating

Allan, who won a prestigious Australasian agribusiness award in 2016 acknowledging him as an outstanding innovator and leader, says he's learnt that having breaks and delegating are important.

He managed to get away to the family bach at Waiwera at the end of the first lockdown.

"I hadn't been there in 20 years. I did some work on it, but I was doing something different from my usual work, so it was a good change," he says.

"I've cut back on the 3am to 4am starts and I can now delegate work to other people, which helps. I'm an old dog and my life was unbalanced with the amount of work I did," he says.

Allan, who has two children, says there's a big generational difference in the amount of hours people are expected to work.

"It's okay to not work ridiculous hours. We know now that people need time off and to take a break to look after their well-being," he says.

"Time goes so fast and before you know it your kids are grown up, so it's important to slow down and enjoy the moment."

Farmstrong is an award-winning rural well-being programme that helps farmers and farming families live well to farm well.

To find out what works for you and 'lock it in', check out our farmer-to-farmer videos, stories and tips on **www.farmstrong.co.nz.**

DYNAMIC AGRI-TECH INDUSTRY HIGHLIGHTED

Words by Alex Tomkins and Brooke Maddison

Brooke Maddison (left), assistant innovation specialist at Zespri International (Bachelor of AgriCommerce) and Alex Tomkins (right), graduate at Southern Cross Horticulture (Bachelor of AgriCommerce)

As two young professionals starting our careers in the horticulture industry, attending the MobileTech Ag Conference was a great experience and exposed us to the dynamic agri-tech industry.

The conference centred around discussions on the ability of technology to create value within the agri-food supply chain. We are incredibly grateful to Horticulture New Zealand for the opportunity to attend the conference through scholarship tickets.

$1.4 Billion

The agri-tech sector is currently worth 1.4 billion in export revenue and is set for further growth.

After attending the conference, we took away three key insights:

1: The potential for New Zealand to leverage more value from agri-tech as an export industry.

2: The significant challenge that the talent pipeline presents for the technology sector.

3: The opportunity for technology to help solve industry wide problems with data collection and analysis as a tool to help drive more informed decision making.

As an industry currently worth $1.4 billion in export revenue already, the agri-tech sector is set for yet further growth. The innovative nature of New Zealanders with 'number eight wire' mentality to solve problems, puts the country in a strong position to take our agri-tech products to the world.

New Zealand already has a strong reputation for agri-food products, so why not extend this to agri-tech products? This puts us in a strong position to help solve global food and horticultural production problems, while generating export returns.

> **Agri-tech has the ability to solve industry wide problems, and optimisation and analysis of data has the ability to help growers make more informed decisions**

The technology sector in New Zealand faces a significant talent pipeline and people development challenge. This ranges from encouraging technology careers at the school level to addressing declining student numbers in NCEA (National Certificate of Educational Achievement) technology subjects, to developing technology graduates at a university level. A survey asking primary students 'what they want to do when they grow up' found 0.5% of students answered a career in Information Technology (IT) and programming, while being a grower or farmer didn't even feature. As the skillset required of growers is expanding, growers are having to become horticultural technologists. Therefore, developing strong people capability within the agri-tech sector will become increasingly crucial. This starts with inspiring the next generation about agri-tech from a primary school level. The conference highlighted the importance of developing strong talent pipelines within the agri-tech sector to develop future leaders.

Agri-tech has the ability to solve industry wide problems, and optimisation and analysis of data has the ability to help growers make more informed decisions. There is significant value in systems that allow for amalgamation of data, and are easy and time efficient for the end user. If growers have more oversight over their operations and a clear picture of what is happening on their land in real time, they can begin to make decisions based on this data, resulting in more accurate decision making. This has the potential to save resources, increase productivity and solve succession planning problems.

CRUNCHY!

Words by Helena O'Neill

Bibhas (Benji) Biswas has turned his family home into an urban farming operation

A need to introduce local and responsibly grown micro herbs, micro veges and edible flowers to Invercargill plates is the driving force behind the urban farm Crunchy.

In 2019, Bibhas (Benji) Biswas turned his family home in Invercargill into an urban farming operation.

"My wife was pregnant, the baby was coming, and I wanted to resign from my job. So I started researching what I could actually do. I realised most of the products here come from Christchurch or further north. Then restaurants would complain that the product was not top quality. It would lose so much of its shelf life."

"The whole thing started in the garage, gaining a little bit of experience from growing seeds. My wife Liv got scared because I've never been a farmer before."

Fast forward two years and Crunchy is now supplying more than 40 restaurants, cafés, hotels, and shops. Bibhas is also planning to get into supermarkets.

"We started with one or two microgreens, and then we learned how to grow sprouts. We now grow five different kinds of sprouts. Then we learned how to grow lettuces."

"There are no pesticides, no sprays on our food. We're creating a whole system that can reduce the food mileage and also increase food quality."

Starting a business shortly before the Covid-19 pandemic also came with its challenges. When government restrictions came into force last year, Crunchy was solely supplying restaurants.

"It was challenging. We were shut and so had no income. We still needed to pay the rent and all those other costs. We had to stop and think about how we would change our strategy."

"At the end of the day, you have to be creative and innovative to be able to work through whatever situation arises. We came out really strong. We grow more microgreens than before Covid, we grow more sprouts than we ever did, and we grow more lettuces than we ever did."

His engineering background is proving useful, allowing him to design his own indoor climate control growing system for the vertical farm. He says five shelves are producing almost 1,000 heads of lettuce a week.

"Now we're also growing outdoors in grow bags, about 5,000 grow bags allowing us to grow 1,000 heads of lettuce a week out there."

He is trialling just under 2,000 red and yellow raspberry plants, as well as experimenting with courgettes and mushrooms.

Right now the urban farm is split between vertical farming indoors, and the outdoor operation in grow bags. In the next 12 months, Bibhas plans to move towards a commercial operation with tunnel houses.

Bibhas also works as a personal coach with the goal of helping empower people. Late last year, he self-published a children's book called *Arya and the Boatman* and has plans to write more books.

Hailing from a village in the Indian state of West Bengal, he came to New Zealand eight years ago and only learned to speak English after arriving here.

In 2012 Bibhas became a qualified electronics and instruments engineer in India.

"I was mad on my cricket."

> **"Crunchy is now supplying more than 40 restaurants, cafés, hotels, and shops. Bibhas is also planning to get into supermarkets**

He wanted to play cricket and a friend recommended that he go to New Zealand. Much to Bibhas' surprise he successfully gained a scholarship from SIT (Southern Institute of Technology).

The John Wright Sports Scholarship covered the first year of study fees but not travel or living costs. The scholarship is named after former New Zealand cricketer and Indian coach John Wright.

"I was brought up in a very poor family back in India and I didn't have that sort of money. So I went to one of my uncles and asked if he could help me out. He sold some land and gave me the flight money. I had less than $200 in my pocket."

With little English he struggled to find a job, eventually finding work washing dishes in a restaurant. After a year he got a job as an activities coordinator at ILT Stadium Southland where he worked with children for four years.

"My work with the kids, that's where I learned my English. I've learned a lot."

Playing cricket while studying was a dream come true, and he continues to play for a Southland team.

In 2018 he left ILT Stadium Southland to start his own company, Be Champion, offering professional development through personal coaching and mentoring. A year later he started Crunchy.

"It has been a great journey, the past eight years have been life-changing."

MACHINERY SUPPLY ISSUES
FEATURE: GET IN QUICK

Words by Glenys Christian

Growers are being warned that they need to start conversations with machinery suppliers right now to avoid some of the delays that have been experienced in delivery of new equipment over the last year.

Kyle Baxter, the president of the New Zealand Tractor and Machinery Association (TAMA), says that its message to get in early isn't just a sales pitch.

"Companies and manufacturers are gathering orders and commodity prices are ramping up," he says.

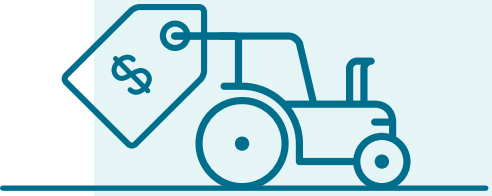
With these northern hemisphere companies busy supplying summer demand in their home markets at present, nine to 12-month lead times could be the norm for New Zealand farmers and growers. So TAMA is urging its 40 members, who represent 90% of tractor sellers and 80% of those selling other agricultural equipment, to keep up to date with the market to be able to pass that information on to intending buyers.

As it was six months before the disruption to European manufacturers affected machinery supplies to New Zealand, he describes the situation through last year as "lumpy."

> "By July, August and September commodity prices were increasing

"European manufacturers worked through Covid-19, but some businesses here listened to the media and thought there would be a big slow down," he says.

"By July, August and September commodity prices were increasing."



Tractor sales are up 19%
for the first three months of this year compared with the same period last year pre-Covid-19, showing just how rapid the recovery has been.

That meant that order books for machinery importers started building, but Italy and France went through repeated lockdowns which affected supply further down the track.

Tractor sales are up 19% for the first three months of this year compared with the same period last year pre-Covid-19, showing just how rapid the recovery has been. But other problems soon presented themselves with a shortage of freight containers, as it had been expected fewer would be needed. That resulted in shipping delays from overseas manufacturers to New Zealand with what was normally a two-week wait time extending out to five or six weeks.

> **“TAMA is urging its 40 members, who represent 90% of tractor sellers and 80% of those selling other agricultural equipment, to keep up to date with the market to be able to pass that information on to intending buyers**

> **Manufacturers had previously had the luxury of having containers on hand to load and be ready to ship within days, but now there could be delays of three to four weeks**

"Containers are often not where they're supposed to be," he says.

Manufacturers had previously had the luxury of having containers on hand to load and be ready to ship within days, but now there could be delays of three to four weeks.

And empty containers are being sent back to China, in particular, when usually they would have been full, because shipping companies can't afford to wait for goods to fill them.

Freight rates have risen as companies such as whiteware manufacturers seek more shipping space for their goods.

"They have to keep shipping so they will pay more," Kyle says.

It is hoped that when freight volumes return to a more normal level, freight charges will fall as demand and supply are balanced out.

In August TAMA will hold a conference in Christchurch, aiming to give members a better understanding of the changing world they are now operating in.

THE DEALERS' TAKE

Te Puke tractor importer AGTEK's general manager, Gayne Carroll, says specially built tractors tailored to suit the individual needs of buyers have to be ordered from the factory, with build times "pushed out and out."

Freight costs have "gone through the roof" with increases of over 40%, and the transit to this country is taking sometimes two months longer than previously. So growers need to plan purchasing much further ahead to fit in with future plans, as anything ordered now probably won't be here in time for this spring.

Nigel Prattley from Landpower says most orders are running six weeks behind in delivery.

> **"Freight costs have "gone through the roof" with increases of over 40%**

"It's getting to the point where growers may say the season has finished and they won't take machines even if they've paid a deposit.".

The company is governed by build slots in the northern hemisphere and with another wave of Covid-19 in Germany, where a lot of their machinery comes from, deliveries which were usually around six weeks have been pushed out to 12 or 14 weeks.

"We need to catch the earlier build slots," he says.

"Growers need to think way ahead. They can't leave it to the last minute."

He also doesn't believe the shipping situation will ease soon with instances of ships not unloading their cargo as this would involve such a long delay. Shipping delays are a "huge factor" which could last for another 12 months.

Shane Pinker, general manager of Glenbrook Machinery, south of Auckland says there is a six to 12-month delay on delivery of most machinery.

"Everything is hard to get," he says.

A lot of growers have scaled back during lockdown, thinking demand would drop, but soon found they were back in a more normal situation.

"But growers need to be thinking about the next harvest. Some will have missed out."

Problems importing machinery have been compounded with the shortage of containers and delays unloading at the Ports of Auckland.

"It's going to take a while to clear."

Stephen van der Gulik, sales manager at Agrowquip's Pukekohe branch, says there are no problems with growers receiving machinery they had ordered, but lead times from the factory have been pushed out for up to two months.

"There needs to be more forward planning of what they need and when, and growers seem to be aware of that," he says.

"They can't be reactive."

After the disruptions of last year he says business has picked up again, and 2021 is very much like a normal year so far.

CEDENCO CHANGES WILL IMPACT ON CROPPING LANDSCAPE

Words by Kristine Walsh, photo by Liam Clayton/The Gisborne Herald

Sweet corn harvest in action

Big changes from a Gisborne food processor will alter the region's arable cropping landscape even faster than had been anticipated.

Cedenco Foods announced in March that at the end of the sweet corn harvest in early April, it will shut down its 20-year-old Individually Quick Frozen (IQF) facility, resulting in the loss of 21 permanent roles (of which eight were already vacant) and just over 100 seasonal jobs.

Outgoing chief executive Joe Nelson said all affected staff would be offered redeployment either in Gisborne or at the company's Hastings plant, which would at the same time be opening its new apple processing facility.

However, managing director Tim Chrisp noted there would be a definite impact on corn growers, if only for the short term.

Gisborne District Council's 2020–2021 crop survey recorded that while a decline of just -0.6% in plantings of maize or sweet corn (to 6,485.5ha) appeared modest, that had come after a crash between 2014–15 and 2016–17, when plantings plummeted from just under 7,600ha to just over 6,200ha, before creeping up a bit in 2018–19.

The report writers said that trend was continuing, most likely because crop land was transitioning to citrus, kiwifruit and other crops, particularly around the Poverty Bay Flats.

And that was even before Cedenco's recent decision, which reduces by half the around 1,700ha of corn grown for processing by both contract farmers and the company's own farming division.

Mr Chrisp said there would be some clawback in that Cedenco also contracts up to 860ha for sweet corn powder, and as the powder facility is expanded, he anticipates that will increase by around 10% a year.

He was also optimistic there would be multiple options for growers, from moving into permanent cropping to supplying Cedenco as it works to develop new product lines including plant milks and protein products.

"In the short term, areas no longer needed for corn production will likely be taken up by maize and grazing in the near future," he told The Gisborne Herald.

"In the medium term, we expect the arable cropping landscape to change as Cedenco and other companies develop new products that are more sustainable, throughout the supply chain. We don't think it will take long for the vacuum to be filled."

Tim Chrisp said the company is grateful for the support received from the region's sweet corn growers over the last two decades.

"We have had to work our way through floods, droughts and changing market requirements and the current situation – where we are faced with labour shortages and environmental constraints, especially in food processing – is just another set of circumstances for us to navigate together."

He also valued the work agronomy manager David Oudes had put in over the years.

"To complete the harvest every year and to supply the factory from a variety of locations in all weathers is not an easy task," he said. "Dave and his team never flinched from giving it their all and making it happen."

Going forward, Cedenco's strategy will be to reutilise its IQF facilities for powder and frozen squash facilities, which are operating at full capacity.

"Our export sales of sweet corn powder have been an amazing success story," Mr Nelson said. "We currently export sweet corn powder to over 15 countries around the world and we expect this growth to continue."

Meanwhile, Mr Chrisp said Joe Nelson – who has been appointed Trade Commissioner and Consul General for New Zealand Trade and Enterprise in Vietnam – has been a capable and inspiring leader.

He has been replaced by general manager of operations Mark Springer who, being based in Hastings, will work closely with Gisborne general manager Carla McCulloch.

"Mark has been working in the fruit and vegetable processing industry on the East Coast for many years and is an experienced and professional operations leader," Mr Chrisp said.

"From that, he brings experience in health and safety, food safety and total productive maintenance, all critical performance areas in a modern food processing environment."

About Cedenco

- Established in Gisborne in 1986, Cedenco Foods is the largest part of a group that also operates Waiū Dairy (in Kawerau) and North Island Mussels (which processes in Tauranga).
- Cedenco processes sweet corn, apples, tomatoes, squash, green peas, kiwifruit, onions and pumpkins, creating product for some of the world's most iconic food and beverage brands.
- The company also has a manufacturing site in Hastings, to where it recently relocated its apple processing operation from Nelson.
- It has been Gisborne's largest employer with around 105 permanent and 500 seasonal staff. In 2020, Cedenco directly contributed $90 million to the local economy.

TAKING TRACEABILITY TO THE NEXT LEVEL

Words by Glenys Christian

Guidelines from the three-year United Fresh Traceability Project are due to be published before Horticulture New Zealand's 2021 conference in early August.

And according to United Fresh project director, Anne-Marie Arts, it is one of the most important projects she has been involved in during her horticultural career.

"The absolute cooperation received from all participants along the supply chain has contributed to a very robust tool that will significantly improve our industry's level of traceability achievements," she said.

> "With the incidence rate of food-borne illnesses attributed to fresh produce steadily rising worldwide, the need for an effective and workable traceability system that helps prevent and reduce such incidents was increased

Ineffective or absent traceability systems can present severe problems for both consumers and industry. In New Zealand the dairy industry whey protein scare over botulism in 2013, and the traceability challenges which followed, highlighted the need for effective industry systems throughout fast-moving consumer goods (FMCG) categories including fresh produce. With the incidence rate of food-borne illnesses attributed to fresh produce steadily rising worldwide, the need for an effective and workable traceability system that helps prevent and reduce such incidents was increased. There is risk of an impact, domestically and in export markets, as severe as that of the dairy industry incident, or potentially even greater.

Transparency of the traceability process was also becoming an increasingly urgent requirement for supply chains from a consumer perspective. Consumers have no trust in a system's outputs if they have no confidence in the system itself. So any traceability system must also be transparent to consumers, to enable them to accept the accuracy of such a system's outputs.

A lack of system transparency will reduce trust in the entire supply chain, with impacts seen in uptake and effectiveness. Transparency helps maintain customer and consumer confidence in the upstream supply chain, underpinning their reasonable expectation that all food reaching them is safe.

Traceability is also growing in importance as a mechanism linking domestic and international food supply chains. Currently traceability in the New Zealand domestic fresh produce supply chain is not working to a common standard. Every produce supply chain in this country varies in its management of internal and external traceability, with the latter working well in some cases, or not at all in extreme situations.

In 2018 pan-industry body United Fresh was successful in applying for a Sustainable Food and Fibre Futures Fund (SFFF) project to examine the gaps in traceability locally and develop a set of guidelines tailored to the New Zealand industry. This project was led by United Fresh through its technical advisory group and managed by The AgriChain Centre, with technical guidance on international traceability system standards by GS1 New Zealand. There were also cash and/or in-kind contributions from these organisations as well as from Strawberry Growers NZ, Vegetables NZ and Foodstuffs North Island.

> "Transparency helps maintain customer and consumer confidence in the upstream supply chain, underpinning their reasonable expectation that all food reaching them is safe

In June last year following the initial supply chain pilot studies in 2018 and 2019, United Fresh released a set of draft guidelines for industry feedback and consultation. The feedback received was incorporated into the final version of the industry traceability guidelines, to be made public within the next three months.

The guidelines consist of three sections: laying out the case for traceability, the guidelines themselves, and work instructions to help businesses follow the traceability process to a common standard.

Dr Hans Maurer, chair of the United Fresh technical advisory group, said the key learning for the project team related to the improvements needed to strengthen traceability.

"Effective and efficient traceability can only be based on a high degree of interoperability between supply chain partners," he said. This is fast becoming a baseline necessity to achieve the rapid reactivity increasingly expected by regulatory authorities.

Work on the project is winding up over the next few months with the guidelines to be made available in both printed as well as electronic form.

SIX POINTERS FROM THE PROJECT

The traceability project found that:

1. Growers collect a substantial amount of data to support their business operations.
2. They have demonstrated that significant traceability information is available from the work carried out during the on farm production and post-harvest processes.
3. The traceability challenges experienced by the produce industry along the supply chain are not based on the lack of data, but on the incompatibility that typically exists between the information management systems in use along the supply chain.
4. A robust traceability system does not necessarily require significant investments into technology, as at the most basic level such a system can be paper-based.
5. Regardless of whether a system is paper-based or operates at the other end of the continuum through providing semi-automatically generated Blockchain entries, "one-up, one-down" external traceability works at its best when all parties are adhering to a common standard.
6. Traceability does not work without an underpinning standard that enables participants in a supply chain to recognise and move electronic data related to physical product, parallel to moving the product itself.

LABOUR SHORTAGE: BERRIES SET TO ROT

Words by Rose Mannering

Dianne Charlton with berries left on the vine

Small block holders and gate sales operators in Hawke's Bay have been put under severe pressure, Tollemache Road berry grower Dianne Charlton believes.

She and her husband Matthew have been growing boysenberries and then raspberries for 38 years just south of Hastings at their business The Berry Farm. She believes an inability to get workers this season due to labour shortages is placing the whole berry industry in jeopardy.

First it was Perry's Berrys strawberry producers in Auckland, then others have quietly followed, just closing their gates.

"I believe the long-term future of the farm shop is threatened," she says.

Being just on the outskirts of Hastings has meant the Charltons have had few problems in the past attracting locals, students and backpackers to help with the berry harvest. "We were okay up until Christmas, harvesting our boysenberries," she says. But as students have gone back to schools and universities, the labour market tightened. This was compounded by the start of the apple harvest in February with even her long-term "retired ladies" moving into roles in apple packhouses because they could get longer hours.

"I don't begrudge this, I encouraged them to go, because they were short too," she says.

Picking berries is not well suited to women with children at school; the berries are best picked early in the morning before the sun heats them and they begin to soften.

The labour shortage has also meant some employees felt as if they could get away with more, knowing their jobs were secure because producers were desperate.

Dianne disagrees that poor pay is contributing to people not staying long enough to get the crop picked. "If people are not used to working outside, they struggle to maintain this work, day in day out, she says. That, combined with the early starts, had often resulted in workers not even making it to pay-day before quitting.

Other workers were concerned if they earned too much they would lose their Working For Families Ministry of Social Development benefits. In the peak of the raspberry season the Charltons were by-passing crop and only picking once every seven days, instead of the normal rotation of three days for their autumn raspberry crop, leaving berries to rot on the vine.

"We needed eight pickers in the peak of the season, but we were lucky if we got three," she says.

Dianne believes it is easy for people to not take a family business such as theirs seriously. "But we take a great deal of pride getting our fruit from the paddock to our shop; we have regular customers who come and seek out our berries."

"We have never had a labour problem here before; we have never used RSEs (Recognised Seasonal Employer scheme workers), but we do have backpackers who usually just walk down the driveway looking for work."

Another feature of the season has been a very high turnover, with a lot of time spent interviewing, inducting and training workers who then don't stay.

"I am not going to give up; I am optimistic solutions will be found before next season."

The one loyal worker who has remained the whole season, Rhonda Hapi-Smith, had made a switch from managing RSE workers to the seasonal raspberry picking role.

Dianne Charlton and Rhonda Hapi-Smith are proud of their produce

Rhonda, who lives nearby, says Dianne and Matthew have always been community minded and helped out where needed. She feels a sense of loyalty to the Charltons to ensure that as much of their crop is harvested as possible.

Rhonda knows how much is riding on getting the crop picked and packed for the gate sale shop. Seeing fruit rotting on the vine is heartbreaking.

GISBORNE GROWERS GET SUPPORT TO MEET NEW REGULATIONS

Words by Kristine Walsh

With the help of Horticulture New Zealand and the NZGAP (Good Agricultural Practice) team, a Gisborne Growers Group has been established to help vegetable and arable growers meet Farm Environment Plan (FEP) deadlines.

The Gisborne Produce Growers Association represents all food growers – both arable, annual and permanent – in the Poverty Bay, East Coast area, and the Association is also seeking a rule change so it can be there for local seed producers as well.

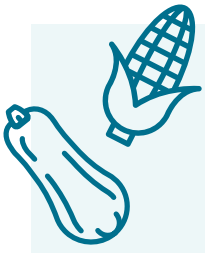
"We know our growers often have multiple crops and multiple issues, so are working towards creating a mechanism that can provide a central source of information and advocacy," says secretary Cath Carter.

Cath was last year elected to the NZGAP committee, whose audited Environmental Management System (EMS) add-on has been approved by Gisborne District Council as an alternative to a council review.

All regions are different, but in Gisborne, FEPs became compulsory from 1 May for any farm that grows annual crops such as maize, sweet corn, squash and vegetables. Permanent crops do not yet have a deadline but will be required to have an FEP in the future.

Horticulture New Zealand and Vegetables New Zealand have offered support and workshops in the region, but now the Gisborne Growers Group (as an NZGAP registered grower group) also offers a locally-based, region-wide back-up to those who want to meet the deadline or who, having missed it, are determined to catch up.

Those who jump on board will be guided through the process of gaining NZGAP certification and meeting requirements for both FEPs and the NP1 (National Programme 1) required under the Food Act 2014.



FEPS BECAME COMPULSORY FROM 1 MAY FOR ANY FARM THAT GROWS ANNUAL CROPS SUCH AS MAIZE, SWEET CORN, SQUASH AND VEGETABLES.

"They receive a folder of templates and user-friendly paperwork they can use to assist with gaining certification in the NZGAP Group Scheme, as well as someone to help them prepare for and undergo an audit," Cath says. "We'll also provide regular training, seminars and field days to keep them up to date with any regulatory changes."

> **"FEPs are not compulsory in many areas, but under the 2020 Resource Management Amendment Act, will eventually be "mandatory and enforceable**

Designed to help growers assess environmental risks, take action where required, and demonstrate progress on environmental objectives, FEPs are not compulsory in many areas, but under the 2020 Resource Management Amendment Act, will eventually be "mandatory and enforceable."

In Gisborne, the date for when that will apply to producers like permanent croppers is unclear, but the Gisborne Produce Growers Association advises growers to start preparing now.

An orchardist herself, Cath says growers don't want to end up in the same situation as some arable and annual croppers who had to scramble to meet their 1 May deadline.

"At this point we don't know when the permanent croppers' deadline will be, but we'd hate to see it fall in the high season when everyone is run off their feet," she says.

"From June, we'll be focusing on supporting those growers because the best time to do this sort of work is in winter."

To find out more about the Gisborne Growers Group, go to the Gisborne Produce Growers Association Facebook page or contact **gisborneproducegrower@gmail.com**

WSP in New Zealand

Here in your rural community

Here at WSP, we believe in being local. Our team of engineers, scientists and planners are proud to be part of rural communities across Aotearoa New Zealand.

That doesn't just mean that we use our local knowledge to work on projects like the restoration of Lake Ōmāpare in Northland, water reuse irrigation in Marlborough, and good management practice planning in Horowhenua, though we're excited about those too.

It also means supporting mental wellbeing by lending a hand at Surfing for Farmers, being part of innovative rural discussion groups, and taking the kids down to the Farmers' Market to taste the freshest local produce. It's meeting our clients in fields, orchards and ngā marae across the country, and working together to grow our rural communities into the vibrant big heart of Aotearoa New Zealand.

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NZGAP ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) ADD-ON PROVIDES A SENSIBLE PATHWAY FOR GROWERS IN GISBORNE

Words by Damien Farrelly : NZGAP Manager

New Zealand Good Agricultural Practice (NZGAP) is continuing to roll out the Environmental Management System (EMS) as a pathway for growers to navigate through the environmental compliance minefield. In late February, Gisborne District Council formally recognised the EMS add-on as an acceptable pathway for growers to meet their Farm Environment Plan (FEP) requirements in the Tairāwhiti Resource Management Plan (TRMP).

Vegetable and cropping growers (over 1 hectare) in Gisborne are working towards a 1 May 2021 council deadline to develop their FEP. They are also working towards a 1 July 2021 deadline to have a 5-metre cultivation setback in place, or a 1-metre setback with additional appropriate measures (e.g. decanting earth bund). This can also be developed and verified via the EMS as it includes a comprehensive soil management area which helps growers to address issues with soil erosion and sediment control. At the time of writing, over 7,700 hectares of vegetable and cropping growing land in Gisborne has an FEP in place via the EMS.

EMS audits will be undertaken over the winter months to verify that FEPs meet the required standards, thus giving confidence to council and community that growers are good custodians of the land by demonstrating that they have appropriate systems in place, have identified environmental risks, are taking action, have appropriate measures in place and are making progress on key issues.

The benefits for growers are numerous, but the most compelling being the integration of FEPs into their existing GAP system, thus reducing future compliance costs and duplication (e.g. audit). NZGAP also acts as a conduit with the council by reporting FEP and audit outcomes, meaning growers can get on with growing.

Horticulture New Zealand, Vegetables New Zealand Incorporated and Gisborne Produce Growers Association have been integral in supporting growers to develop FEPs via workshops and one-to-one sessions. They have also acted as a links for growers through to council for collaboration and seeking better outcomes at sector level. A real positive from this process has been the creation of a forum for growers to work together to solve problems while sharing knowledge and insights for mutual benefit.

The Gisborne Produce Growers Association has also established an NZGAP Grower Group to support growers on their FEP journey. The development and implementation of FEPs via the group will be of huge benefit to growers, especially smaller operators who may not have the scale or know-how to comply with council requirements on their own.

Gisborne District Council are the second council after Environment Canterbury to formally recognise the EMS add-on in a trend that we hope to continue across New Zealand. NZGAP is now focused on attaining approval of the EMS as a pathway for the recently amended Resource Management Act which will require growers (over 5 hectares) to have a certified and audited FEP. The draft national regulations for Freshwater Farm Plans are expected to be out for public consultation in the coming months, where NZGAP will support Horticulture New Zealand's submission to attain a pathway for recognition of GAP schemes. NZGAP will also be seeking recognition of the EMS as a pathway for growers in Hawke's Bay's Proposed Plan Change 9 for the Tūtaekurī Ahuriri Ngaruroro Karamū (TANK) catchment area, where public hearings are being held in late June.

For more information on the EMS add-on, visit the NZGAP **website: www.nzgap.co.nz**

PRIMARY ITO
QUALIFICATIONS ENHANCED

Responding to demand from industry, the Primary Industry Training Organisation has recently enhanced the Level 2 Primary Industry Skills, and Level 3 Operational Skills qualifications. There are new electives – particularly in the areas of vehicle training.

Under the government's free trades training initiative, these programmes and all Horticulture apprenticeships have no fees up until the end of December 2022.

Employers can take advantage of enrolling staff on these courses to get people quickly up and running and using the tools they need to perform their role safely.

Tractors, quads, motorcycles, light utility vehicles (LUV) and forklifts are included. Primary ITO has been hearing that these changes have been well received by industry, and employers believe the Level 2 programme is a useful induction tool for new staff.

Development opportunities help employers keep good staff and shift the conversation from seasonal labour to a long-term career option in what is a buoyant sector of the economy.

Chainsaws and agrichemicals

A new addition to Level 2 is the Growsafe unit standard. This enables staff to gain compliance and regulatory qualifications for agrichemicals handling. Chainsaws is another new addition.

Level 3 Operational Skills now includes all vehicle modules as electives. This makes the qualification much more flexible and tailored to your workplace. This replaces the Vehicles, Machinery & Infrastructure (VMI) programme.

Mowers and 4WD

Primary ITO are now offering electives in mowers and four-wheel drives (4WD). New electives also include set up of an irrigation system and fencing.

New vehicle micro-credentials

Primary ITO has developed new short, bite-sized pieces of learning known as micro-credentials – to quickly set people up with the knowledge and skills required to operate vehicles safely and confidently.

The Level 3 micro-credentials include operating quad bikes, motorcycles, LUVs and tractors.

Each micro-credential takes between two to four months to complete, can complement any programme that your team is currently enrolled in, and upskill those who are new or have little experience in the primary industries.

Primary ITO sector manager for horticulture production, Adam Fleck says "These new micro-credentials will be very popular with employers who have employees where driving is their primary role. Including Growsafe and chainsaws in Level 2 Primary Industry Skills means that compliance issues for smaller growers can now be covered in one programme. Upskilling new employees into the sector will now be faster. With fencing and irrigation skills being added to Level 2 the basics are covered off now."

Apprenticeship Boost extended

In March the government announced a four-month extension to what is known as the Apprenticeship Boost. This is the scheme born out of Covid-19 which promises to pay employers up to $16,000 per apprentice to either employ or retain apprentices until August 2022. Employers apply for an Apprenticeship Boost through the Ministry of Social Development (MSD).

To find out more about how the enhanced qualifications and the new micro-credentials can work for you, please call the Primary ITO on **0800 20 80 20.** Or to find out more information about the Apprenticeship Boost visit: **www.letsgrow.co.nz**

KIWI CONSUMERS KEEP SALAD BUSINESS GOING

Words by Elaine Fisher

Rosita Wynne, who has worked for Mr Salad for 10 years, packs edible flowers for customers

How much lettuce did overseas visitors eat when, before Covid-19, they dined in New Zealand restaurants and cafés?

Of course no one knows for sure, but Wayne Revell (aka Mr Salad of Katikati) thinks it may be less than is believed, because since tourists stopped arriving, orders for his lettuce have stayed on a par with pre-Covid years.

"I think I underestimated the impact of Kiwis eating out in New Zealand and those returning home, on the hospitality sector and our business."

However, his business Mr Salad, at Ongare Point just north of Katikati, didn't escape unscathed from the impacts of the Covid-19 pandemic. "During lockdown in March last year the dairy farmer up the road fed 150,000 of our red lettuce to his dairy cows."

Philosophical about the loss, Wayne says one of the beauties of growing hydroponic lettuce is that if plants are lost for whatever reason, including disease or lack of markets, it's possible to have another crop ready for market within six weeks.

In fact, growing lettuce is not dissimilar to growing grass, says the former Waikato dairy farmer who knew nothing about vegetable growing or hydroponics when he bought the Mr Salad business 13 years ago.

"Although I knew nothing about how to grow hydroponic lettuce, the practicalities aren't too dissimilar to dairy farming, and I'd learn by my mistakes."

The previous owners established the hydroponics operation in 1992 on land they had converted from a kiwifruit orchard, at a time when that industry was experiencing a downturn.

The operation involved not only growing and harvesting fancy lettuce, but also taking orders from restaurants and cafés and delivering to them each day.

> "Mr Salad grows eight different varieties of lettuce including butter, red and green frilled, red and green oak, and cos lettuce

That's how Wayne ran the operation too, receiving orders from cafés and restaurants often late at night, filling them out the next morning and then doing deliveries too.

In 2018 negotiations began with Bidfood, through its Tauranga manager Ken Buckthought, for Mr Salad to become a grower for Bidfood, which in turn would handle all the orders.

"It's made our operation so much simpler and Bidfood is a great company to work with. I'm in touch with their regional managers on an almost daily basis to make sure we are supplying the product they want."

Not only has the relationship made the day-to-day operations easier, it's also resulted in growth. "We have installed more tunnel houses to meet increased demand. It wasn't something I had planned to do but we had the land and it made sense."

Each week Mr Salad produces two tonnes of lettuce from 300 raised tunnel houses on 3ha of north facing land, surrounded by kiwifruit and avocado orchards. To add diversification, the company has begun supplying between 250 and 300 punnets of edible flowers each week, including pansy, viola, dianthus, verbena, marigold, carpet rose, lavender and rosemary.

"I thought with things being tough in the hospitality industry, that orders for flowers might decrease as owners looked to cut costs, but if anything they have increased."

The young flower plants are supplied by Zealandia. "The more flowers you pick, the more they produce."

> **"In this business you are only as good as your last delivery of fresh lettuce**

Each week 35,000 lettuce seedlings arrive at the property from Nga Rakau Nursery in Auckland. After 10 days in a tunnel house they are planted out into the hydroponic beds, where they remain until harvest. The operation aims to replant each hydroponic cell 10 times a year. Mr Salad grows eight different varieties of lettuce including butter, red and green frilled, red and green oak, and cos lettuce. Another innovation has been hydroponic coriander which continues to be in demand.

Growing lettuce is a seven-day-a-week operation, employing 12 permanent and up to 10 part-time staff, including retirees and school students. "I am very lucky to have great staff. Most are female who seem better suited to the work. Some of our staff, who began here as school students are now full-time. One is training to be a midwife, studying online and working here to finance her studies."

EACH WEEK MR SALAD PRODUCES TWO TONNES OF LETTUCE FROM 300 RAISED TUNNEL HOUSES.

A key player in the expansion of the infrastructure has been a Tauranga builder who constructed the bench-height tunnel houses. "We laid down the weed mat, put in the plumbing and got a fencer to put in the supports, then the builder and his helper came along to build the beds. We finished off with the hoops and the covers."

The sides of the clear plastic covers remain up throughout summer but as the temperatures drop in autumn, they come down. "The tunnels are pretty efficient. Lettuce are naturally slower growing in winter, mainly because of reduced sunshine hours, but winter demand from clients doesn't drop off significantly."

Growing hydroponic lettuces commercially is unusual in the Western Bay of Plenty – these Mr Salad tunnel houses are surrounded by avocado and kiwifruit orchards

Mr Salad used to deliver to around 350 clients before becoming a Bidfood grower. Now its salads are distributed throughout the North Island. The company has its own truck, making deliveries to Hamilton, Rotorua and Tauranga, with produce for further afield being delivered by courier.

Changing the way the company operates gave Wayne the chance to focus on improving efficiencies, as well as growth. "We used to use a motorbike and trailer to deliver 40 crates of lettuce to the pack-shed. Now we have a ute with a bigger trailer, able to bring in 140 crates at a time. We also invested in a second spinner to dry the lettuce which has improved efficiency."

Wayne's day still begins early, at around 7am when he processes orders and prints labels. Staff start arriving around 7.30am to fill out the orders, with the aim of having the first truckload away by 9am.

> **"We used to use a motorbike and trailer to deliver 40 crates of lettuce to the pack-shed. Now we have a ute with a bigger trailer, able to bring in 140 crates at a time**

Then chillers are restocked, lettuce and flowers harvested and cells re-planted. "We are never sure how many orders will come in. Some days staff can finish early, other days they get through a mountain of work."

Nine pumps deliver liquid food to the lettuce, with an exact mix of nutrients to ensure their growth and health.

Former dairy farmer Wayne Revell bought the Mr Salad business 13 years ago

Every so often Wayne adds a product to prevent pythium root rot. Other fungal diseases, the caterpillars of the white butterfly and occasionally aphids, can also affect the lettuce plants, but generally pests and disease are not a big issue.

After 31 years of dairy farming Wayne had planned for a more relaxed lifestyle when he bought the Mr Salad business. Instead, he's still tied to the operation seven days a week. "But I'm working on changing that."

In the meantime his focus remains, as it always has, on quality. "In this business you are only as good as your last delivery of fresh lettuce."

Austin Fotheringhame (18 months) really does like eating flowers grown by his grandfather Wayne Revell and his mum Rachel Fotheringhame

HORTICULTURAL CAREERS CHAMPIONED

Words by Glenys Christian

Austin Singh with Vijay Bhana at the Careers Expo

Over one thousand students and parents came to the Franklin Careers Expo in Pukekohe in late March, where there was plenty of information on horticultural careers on offer.

It's the fifth time the expo has been held, after being called off last year because of the Covid-19 outbreak. But with the pandemic's impacts still being felt throughout the economy, there's now some more interest being shown in working in the horticulture sector.

"There's some momentum building," said Austin Singh Purewal, the 2019 Young Vegetable Grower of the Year, who was manning the Pukekohe Vegetable Growers Association (PVGA) stand.

"Horticulture is profitable and there are some solid pay packets available."

Students were expressing a lot of interest in the PVGA scholarship awarded for the first time this year to celebrate the organisation's centenary, and there were also enquiries about what part-time jobs might be available.

"They're interested in sales and exports as well as how you get to drive the really big tractors," he said.

And packs of snacking carrots supplied by A S Wilcox as well as tomatoes from T&G Global which were on offer were well received.

Vijay Bhana, who was also on the stand, said it was good to be representing the industry to students, especially those from Pukekohe High School which both he and Austin attended. Onewhero, Tuakau and Waiuku High Schools are also involved in the expo's organisation.

Dr Raj Saini from Franklin Agritech, has come to the expo for a number of years. The one and two-year courses he offers in Pukekohe and the Bay of Plenty were able to continue online through lockdown, with the most recent January intake attracting 12 international students and five locals. But he believes more awareness is required in schools of the opportunities available in horticulture.

"The perception needs to be changed," he said.

"There's a need for more technical qualifications and skills. There are many horticultural opportunities students are overlooking."

A number of his international students had previously trained in other areas such as IT, but then were not able to find a job so turned to horticulture.

Jasmett Gingla, who worked in production for six years then moved into training with Franklin Agritech, kept his message for students simple.

"I say it's the best opportunity to get balance in their lives. The jobs are here in Pukekohe. They don't have to go into the city every day, so they can enjoy life."

ON PLEASING BEES: THE REMARKABLE LIFE OF PROFESSOR STEPHEN WRATTEN

Words by Heather Woods

Stephen David Wratten, 6th of April 1947 – 8th of March 2021

Professor Travis Glare (director of the Bio-Protection Research Centre), Helen Barnes (general manager of TomatoesNZ) and Emiliano Veronesi (PhD student) share their memories of Professor Steve Wratten.

Professor Stephen Wratten was a remarkable man. Not just for his down-to-earth nature, but for his vision – and his persistence to make things happen. He was an expert in ecosystem services with the ecological view that insects could be used to control insects, and that companion planting could provide nectar that would increase the longevity of parasitoids.

In recent years he had branched out into bee health with a focus on 'dirty water' – water with minerals and other things in it – and how this would improve overall bee health. He had a keen interest in the tomato sector, and Emiliano and Travis both say he had new ideas every few weeks. His theory was simple: we can always do more, to do better. Travis quoted him as saying, "It's a privilege to work in a university and I'll never forget that." He had genuine concerns about agriculture practices performed worldwide over last thirty years and wanted to make a difference by helping to reduce the use of pesticides. Not because we don't need them, but to use an alternative that is better for the environment and for our health.

He will be remembered for his genuine dedication to teaching and sharing knowledge with his students, and for making ecosystems services in productive agriculture the lifelong centrepiece of his work.

The Visionary

Steve wanted to create natural controls in a production system. He was an expert in ecology and biological control of pests; he was also an advocate for the use of non-crop plants to provide shelter, nectar, alternative food and pollen. So much so, that the Bio-Protection Research Centre (a collaboration of scientists across number of institutions) provided a 'bunch of weeds' bouquet for his funeral. They represented the plants he advocated for as shelter for insects. Helen says, "It was a nice touch; people truly understood what he stood for, and those that knew him could relate too."

Steve was a sought-after academic who was always ready to share interesting insights into ecology, the environment and the world at large. There's generally a separation between research and industry, but Steve bridged that gap. His communication skills made him attractive to industry. He didn't overcomplicate things; his ideas weren't simple, but he presented them as simple ideas.

> "His theory was simple: we can always do more, to do better

It is this kind of thinking, Helen says, that generated his significant contribution to the tomato sector over the last few years; it completely changed their direction. His wealth of knowledge and experience was influential for creating practical solutions from which growers would truly benefit. Like the use of 'good insects' in greenhouses to manage pests – without pesticides. Some of Steve's recent work under the James Cook Research Fellowship addressed the threat to bee populations and their pollination efficacy.

Steve was remarkable, and at the same time regular. One radio interview had him hiding in a sleep-out away from his barking dog. And he wrote a gardening column for www.Stuff.co.nz for many years, his practical and down-to-earth nature still pursuing shared knowledge for us all. Steve's wife Claire said, "Don't let his work be forgotten." And based on comments from those who worked alongside him, it is unlikely that will happen. In some cases, working with him for only a few years resulted in doing many things differently. Helen said, "I met Steve when the tomato sector was grappling with serious pest issues; it was struggling to see a way forward. Steve approached us and said we should be looking inside New Zealand for tools. They were here, we just needed to invest in them. He was very intelligent and invested in what he was doing." A PhD student was commissioned, and so Emiliano became Steve's 89th student.

> **"He was an expert in ecology and biological control of pests; he was also an advocate for the use of non-crop plants to provide shelter, nectar, alternative food and pollen**

Steve worked closely with Helen developing the project and adapting things so the outcomes were practical for growers. Helen laughs, "Steve was always coming up with new project ideas and using not-so-subtle pressure to get them approved. He truly supported his students and did fantastic work. He wasn't shy of getting industry involved to fund great ideas. And this is what made him tick – he could see problems, solutions and worked to connect the dots."

Helen says, "There's some big shoes to fill. It would be great to see the people he worked with pick up that research and carry on, particularly the bio-control work, developing agents and ways to use them in greenhouses."

The educator, mentor, friend

Steve had a way of helping people understand science and he always had plenty to say. He was passionate about his subjects and could really captivate growers, they loved listening to him. He went along to many workshops and was always generous with his time, answering questions and sharing knowledge. Known for riding his bike almost everywhere (the bike even made an appearance at his funeral), Emiliano says his equal treatment of everyone made him more advisor than supervisor. He felt the respect, and he appreciates Steve for enabling his scientific potential.

With his passing, agriculture and horticulture have lost somebody who truly was ahead of his time. Especially in his thinking about how to manage pests, long-term pest management issues, sustainability, and ecosystem issues. Others have only just started catching up to his thinking, and without him we might not have developed Kiwi solutions to Kiwi problems. Steve was happy, and it was a 'big picture' happiness. Seeing his ideology in reality – seeing greenhouses getting better results than with pesticides – was a big deal. His contribution has seen development that simply wouldn't have happened without him. He helped industry change course and Helen says she is grateful for the opportunity to have worked with him.

Steve was also focused on the well-being of his students – all ninety of them. Emiliano remembers fondly the many letters of congratulations and encouragement that made Steve an excellent teacher. Every milestone was celebrated. And he wanted his students to succeed him and carry on. It didn't necessarily matter where that happened. He had a great sense of humour, was direct but constructive, and treated everyone with respect, students and colleagues alike. His work ethic was also strong; you don't just turn up, you work hard. He always jumped in to help. Emiliano says he seemed to appear out of nowhere, checking that things were done right and on track.

Travis laughs, "He also looked the same for the last fifty years. And he had so much more to give. I'd say he never intended to retire. He was in his 70s, still keen to start projects and find new ways of doing things. He wasn't slowing down."

Steve has left a huge body of work behind, but he was never going to be finished. There would always be something he could help teach or improve. He will be remembered as one of the Grandfathers of his field; as one of only two world leaders in ecosystem services. Fifty years of work in the area has created his legacy.

THE DISTINGUISHED PROFESSOR

Steve amassed a long list of achievements and accolades over his 50-year career. Here are some:

- Studied Zoology and lectured in Biology and Applied Entomology.
- Joined the Bio-Protection Research Centre at Lincoln University as Professor of Ecology.
- Awarded the Fellowships of the Royal Society of New Zealand and the Entomological Society of America.
- Awarded the James Cook Research Fellowship in Biological Sciences.
- Produced eight books and over 400 refereed publications.
- 2019 became a Distinguished Professor.

Professor Stephen David Wratten, 1947–2021

FUTURE PROOFING VEGETABLE PRODUCTION

LandWISE

By Dan Bloomer and Luke Posthuma

LandWISE INCORPORATED

Getting great grower engagement was a key to the project's success

Three years ago, we set out to help vegetable growers review and revise management of nitrates. With parallel efforts in Levin and Gisborne, we built a programme based on four workstreams: Precision prescription, Precision application, Keeping it in the root zone, and Capturing losses. And what a journey it has been.

The key in this project has been very close relationships with many individual growers. We have done plenty of workshops and field days, presented concepts and demonstrated methods. But the magic happens when we sit down with a grower, understand where they are at, what they want help with, and together review their goals and management, using their equipment on their crops on their farm.

Of course, every case is unique. That has made it one of the most enjoyable, challenging, and successful projects we have undertaken. We have seen massive practice changes supported by new understandings (for us and for the growers), measurable benefits, and growers more confident they can meet new and tighter regulations and justify their management of nutrients.

We began by investigating where there were knowledge gaps, a process that carries on in a climate of constant improvement. From this we chose key focus areas and developed general activity plans for each region. With potatoes and fresh vegetables dominating in Levin and process crops significant in Gisborne, there have been different focuses, but in general the same topics came up in both. We found a lot of resources and tools to help decision making, but that they were not readily available or were not integrated in ways that growers could easily access and use.

Precision prescription starts with knowing how much nutrient a crop is likely to require. The most current advice about these requirements is the Horticulture New Zealand and Fertiliser Association publication, *Nutrient Management Guidelines for Vegetable Crops in New Zealand*. This is available free from HortNZ and has been an important element in our trials over the last few years. Growers doubted some recommendations, so we set up trials to help them assess their validity. We could compare current practice with the new recommendations in simple rate trials on each grower's farm.

Of course, there can be a lot of nutrient already present, so not all the crop's needs must come from a bag. We encouraged growers to take an active role in soil sampling and explained correct soil sampling protocols so a 'representative sample' can be tested. And we tested and coached growers in the use of the Nitrate Quick Test.

Growers are doing a lot more nitrate testing, in some cases, three or more times for a crop. In Gisborne the main emphasis has been sweetcorn and tomatoes. Through deep nitrate sampling using the Quick Test we found some crops needed no additional nitrogen, some a proportion of that expected, and some the full recommended amount. Growers tended to put a small amount on at planting, but by soil testing before side-dressing, the need to apply extra can be determined.

At the start of the project, no growers were completing formal crop nutrient budgets, although they were thinking about the factors that can affect fertiliser needs.

We identified no appropriate budget tools, so we developed the LandWISE Nutrient Budget templates, one for nitrogen and one for phosphate. Initially paper based, the nitrogen budget is now available as an online tool at www.nutrient.landwise.org.nz. We have a little work to go for people who forget their passwords and so on, but it is free so give it a try!

Precision application means knowing what your equipment is doing. We have run fertiliser equipment calibration workshops and helped individual growers check machine performance. The two factors to watch are the total application rate (kg/ha) and the evenness of application which is measured as a CV (coefficient of variation). A few growers have found their equipment needed attention; it doesn't take much wear or tear to severely compromise application.

To help with the maths and prepare a summary report of performance, we already had the www.fertspread.nz website to help calibrate broadcast spreaders. We have added a new module for people using placement machines such as planters and side-dressers. This is also available for free so have a look at that too.

Keeping it in the root zone has a few components. One is risk reduction by not having excessive nutrient in the soil in case rain leaches nitrates or washes sediment-bound phosphates into waterways.

In the case of phosphate, make sure Olsen-P levels are enough for the most demanding crop being planted in the crop rotation, but not more. Many growers have very high Olsen-P levels and can save cash by drawing down on that investment.

Nitrate is much more mobile and prone to leaching. Vegetable crops can demand a lot of nitrogen in a short period, and it needs to be available when the plant wants it. The key is using the Nitrate Quick Test to get current measurements, so you know how much is available at any time. We have been helping growers learn to use the test and get confidence in the results. A small investment of time and a dollar dip stick before supplemental dressings is a sensible approach.

Nitrate leaches when excessive water falls on the soil. While we can't do much about rain, we can make sure irrigation scheduling is correct and the irrigators are applying the right amount of water. We have run 'Bucket Test' irrigation calibration workshops and field days and tested a number of machines in Levin and Gisborne. As with fertiliser equipment, calibration checks the amount and evenness of application.

We are getting a website running, but growers can download an app for their computer from www.pagebloomer.co.nz/resources/irrigation-calibration/irrig8lite/. There are guidelines and field sheets to help plan, collect data and process it.

The various management practices we have covered are components of best practice for environmental reporting. They can be part of Farm Environment Plans and have been included in a series of Horticulture New Zealand NZGAP Workshops in Gisborne.

Where to next? With this project winding up, we are keen to have the opportunity to get around other regions and share the lessons and the successes from Levin and Gisborne. We are most grateful for all industry folk who have supported our efforts, and the growers who put up with our questions and requests to test things, change things and run trials on their farms. We know you are busy, but we hope you have got new ways of understanding and managing nutrients and water on your farms.

In May, we will be hosting the 'Working Smarter' LandWISE conference in Havelock North with a session on the project, as well as further talks about developments around on farm technology and innovation. Come along to learn more about innovations within the industry **(www.landwise.org.nz).**

NATIONAL HORTICULTURAL FIELD DAYS CONFIRM VENUE

Supplied

Plenty of time to network

Young Grower of the Year competition in action

The National Horticultural Field Days confirm venue for 2021 event to be held at Tomoana Showgrounds in Hastings.

Hawke's Bay's reputation as a primary sector powerhouse has been further cemented with the announcement that the 12th annual National Horticultural Field Days will be held in Hawke's Bay in June 2021 at the Tomoana Showgrounds.

Proudly organised by the Hawke's Bay A&P Society, the National Horticultural Field Days event is the only event in the country exclusively dedicated to the horticulture sector. For two full days, industry professionals and enthusiasts will gather to network, conduct business, and share the latest trends in education and innovation.

Sally Jackson, General Manager of the Society reported that "Hawke's Bay alone accounts for two-thirds of all apple and pear outputs and this is one of the main reasons Hastings is home to this event, the largest horticulture focussed field days in New Zealand."

New Zealand's wide range of horticulture products are exported to over 120 countries worldwide with an overall industry value estimated in excess of $8.8 billion. Many of these products and industry leading companies will be on show at the national event.

Event Manager Kahlia Fryer said that New Zealand horticulturalists represent some of the most innovative producers and companies in the country so it will be a great chance to highlight these at the National Horticultural Field Days in the Hort Talks speaker sessions, large machinery demonstration zones and amongst our Trade Exhibitors.

Jackson said they were delighted to be hosting this prestigious event again for 2021. "Members of the horticulture industry travel from all corners of New Zealand to be here which shows how much they value the content of the show and the business opportunities it provides".

Jackson went on to say she was thrilled to be working with key organisations and business partners such as the Hawke's Bay Fruitgrowers' Association, New Zealand Fruitgrower's Charitable Trust, Hawke's Bay Regional Council. Special thanks were made to Ravensdown, Heinz Watties, ECR Equipment, FMG and Yara whose generous sponsorship enabled the A&P Society to deliver this nationally significant event in Hawke's Bay.

Highlighting technology and innovation at the Field Days is the Ravensdown Innovation & Environment Award which will be presented at the 'Innovation in Hort' Ravensdown lunch on day one of the event.

Key highlights of the National Horticultural Field Days include:

- Hawke's Bay Young Fruitgrower of the Year Competition
- Business to business networking, education and career development programmes and seminars
- Women in Horticulture feature
- Inspirational Secondary School educational programmes
- Innovation Zone
- Large Machinery Demonstration Zone
- Two days of seminar sessions with key-note address
- Featuring over 80 horticulture focused trade exhibits
- Corporate engagement sessions
- Interactive displays of new and innovative machinery
- Ravensdown Innovation and Environment Awards

The National Horticultural Field Days will be held over 2 & 3 June 2021 at the Tomoana Showgrounds. Entry is open to the public with tickets just $10pp, available on the gate.

Fryer noted that as New Zealand's Horticultural industry grows, advancements in technology and research are essential for the industry's success. She added "The primary purpose of the award is to provide recognition and a way to celebrate the innovation and world class technology that New Zealand businesses are using to transform and grow their industry".

Previous winners of this award include Plant Detection Systems, Scionon, Tow and Blow, Rockit Apples, Hydratorq with their BioFume Ozone product, NZ Seaweeds with their bee nutrition product. The 2019 winner was Metris.

The Ravensdown Innovation & Environment Award recipient will receive $1,000 (incl. GST). Enter the awards via our website www.nationalhort.co.nz.

For more information:

Sally Jackson, GM, Hawke's Bay A&P Society
027 470 4624 sally.jackson@showgroundshb.co.nz
Kahlia Fryer, Events and Trade Manager
027 342 6071 hort@showgroundshb.co.nz

TECHNICAL

THE LATEST INNOVATIONS AND IMPROVEMENTS

45 NEW POTATO VARIETIES

END THE CONSUMER CONFUSION

Words by Glenys Christian & Gemma Carroll

Tony Hendrikse, left, shows off some of Eurogrow's new potato varieties to the vice-president of the Pukekohe Vegetable Growers' Association (PVGA), Kirit Makan

The bland house-brand offering of potatoes in supermarkets means consumers are getting confused, says Eurogrow general manager, Tony Hendrikse, at the recent Eurogrow Potato Seed Exhibition, held in Canterbury and Pukekohe.

There is less packaging highlighting the producer of the potatoes to which consumers had previously felt connected. Some point-of-sale material in supermarkets even appears to come from Australia, showing a red-skinned, white-fleshed potato as best for roasting, which shoppers cannot buy as there are no such potatoes for sale in New Zealand.

"It's our job to turn that around," he told Pukekohe growers attending the company's North Island potato variety exhibition in late March.

"It's not the consumers' fault. We have got to supply what they are looking for. And that is a product that's suitable for them, does what it says it will and when they eat it, they say 'yum'."

(The NZ Commerce Commission has recently undertaken a survey for food producers where these concerns can be raised. Growers are welcome to email their concerns whilst maintaining anonymity to marketstudies@comcom.govt.nz.)

The main challenge in the seed market is keeping the pipeline of new potato varieties in balance with demand. Usually, the company will grow up to two to three tonnes of seed for a new variety, then if a particular sector likes one of them, they will be given more to grow to prove its worth. But that can mean considerable wastage, as in some instances two-thirds of new material is thrown out, with a strike rate of one in seven or eight being usual. The domestic development programme for new varieties is under a lot of stress due to a lack of local potato breeders.

> "The main challenge in the seed market is keeping the pipeline of new potato varieties in balance with demand

New varieties were quarantined in Scotland where there was a wait of two years, then they could be cleared in six months. That compared with an eight-year wait to get them into quarantine in this country. After tissue culture and early generation production, trials were carried out where they were planted on growers' properties, often right alongside the best performing varieties for comparison.

Before harvest, the tops were evaluated for disease and vigour then three-metre digs were made for the tubers which were assessed for yield, size, skin finish and flesh and skin colour. Processing and cooking tests were carried out while family and friends were given the chance to sample the crisps and fries produced.

In the crisping varieties Levinata is the standout amongst trial lines under evaluation. It has good leaf and produced the best trial yield of 63 tonnes per hectare in Matamata.

"It also cooks well out of long-term storage, so there's a lot of hope around it."

> **"In the crisping varieties Levinata is the standout**

It appears to be a better performer than VR808 which came to New Zealand in 2008–9, showed phenomenally good storage of seven to eight months, but yields were disappointing in the North Island. Sorrentina and Madison have excellent dry matter content, but yields were "a bit limited." Lamoka "needs to be wrapped in cottonwool" but yields well with good soil and irrigation.

With fries, Tony says the industry is in a holding pattern due to the decrease in overseas tourists. Crop 111 was late bulking; total yield was okay but there were a lot of smalls. Eurogrow has entered a pre-commercialisation evaluation of this variety with Plant & Food Research. Leonata is the most promising fry variety, with the highest yields in Waikato trials and good storage. Basin Russet produced a large sized, cream to light yellow potato but the set was lower than ideal.

"On harder ground it sizes up to something we can use."

It cooked okay and had 200-day storage. While Jurata sized up well early on it then "went to sleep." Donata is extremely popular in Germany with high yields, but is susceptible to powdery scab.

> **"There were 30 new potato varieties on show at the Potato Seed Exhibition, which Eurogrow says collectively cost a total of $250,000 to get to that point**

In the fresh category Agria popularity is a double-edged sword as some people think all yellow-fleshed potatoes are Agria, and supermarkets want it all year round. In the new varieties Jelly is deep rooting, needs low inputs and had up to 60% better yields than Agria in the Waikato. Everest's yields compare with Nadine – "but it beats it hands down on taste." There are many promising new lines with yellow flesh, excellent taste and differing end use suitability, but packing and promoting these to give consumers a positive experience is key.

In the specialty area the value proposition is increasingly attractive with smaller volumes sold but at a premium price.

BEFORE HARVEST, THE TOPS WERE EVALUATED FOR DISEASE AND VIGOUR THEN THREE-METRE DIGS WERE MADE FOR THE TUBERS WHICH WERE ASSESSED FOR YIELD, SIZE, SKIN FINISH AND FLESH AND SKIN COLOUR

So there is a lot of interest in baby potatoes and novel lines such as those with red or purple flesh. Isabella is genuinely nice tasting and has taken over the market in Germany. Cerisa and Bellanita are longer 'fingerling' potatoes also with excellent taste, while Lily Rose has novelty appeal with its red flesh.

> **"There is a lot of interest in baby potatoes and novel lines such as those with red or purple flesh**

There were 30 new potato varieties on show at the Potato Seed Exhibition, which Eurogrow says collectively cost a total of $250,000 to get to that point. Asked about whether nitrogen inputs and outputs were evaluated he says there are strong signals that some of the deeper rooting varieties are more environmentally sustainable, although suitability for end use also needs to be considered.

Potatoes NZ in partnership with Vegetable Research & Innovation (VR&I), Horticulture New Zealand and with funding from the Ministry for Primary Industries, are in the first year of the *Sustainable Vegetable Systems Project (SVS)* which addresses the true nitrate leaching of potatoes and other vegetables whilst improving the modelling tools available to industry. This in combination with applied mitigation techniques will contribute to improved environmental outcomes.

SVS Project Manager Andrew Barber says "there is the possibility in the near future, of a concurrent PNZ project to look at nitrate mitigations, including the potentially important varietal attributes of potatoes".

THE TEMPERATURE – LIGHT BALANCE

Words by Elly Nederhoff : Crophouse Ltd

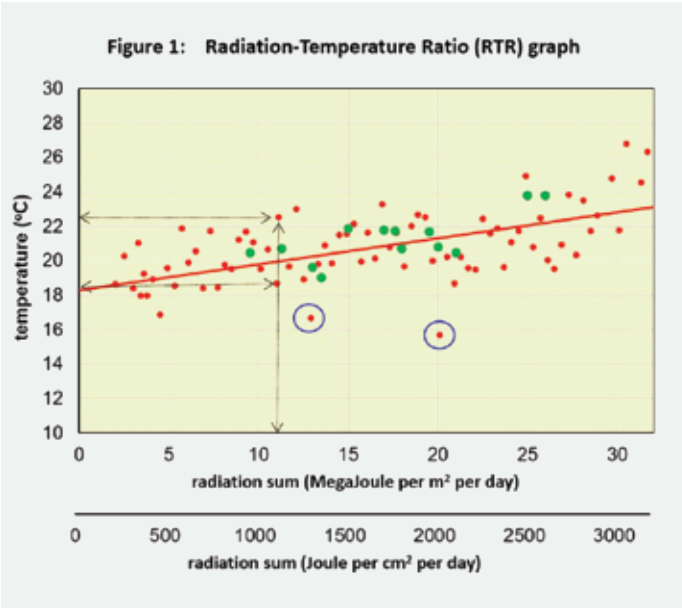


Figure 1: *The Radiation-Temperature-Ratio for a fictive greenhouse. Each dot is one day, with the radiation sum on the horizontal axis, and average 24-hour temperature on the vertical axis. Green dots are days after the computer settings were improved. Radiation is given in two units that are commonly used. The grey arrow shows a 4-degree difference between days that had the same radiation sum. The two blue circles mark incorrect measurements. Source: Crophouse Ltd.*

The key to a productive cultivation is a good balance between the average temperature in a greenhouse and the average light level.

Light determines how much sugars are produced by the plant (the source), while the temperature determines how much sugars are burnt and how the remaining sugars are distributed to the growing parts of the plant (the sinks). As discussed in last month's article, light and temperature affect many processes, including plant development, plant shape, vegetative/generative balance, and overall yield.

In this article we look in detail at the 'Radiation–Temperature Ratio' (RTR). Letsgrow in the Netherlands developed an online RTR tool that is used in 'the new way of growing' (HNT) and in Plant Empowerment. (See previous article in this series.) This RTR is applied a lot for tomatoes and capsicum, and it is relevant for many other crops too.

Average temperature

On a dull winter's day, plants prefer a low average temperature of say 18°C for tomatoes, while in summer they thrive on 24°C or more. We want to quantify the light–temperature relation. The climate control computer accurately calculates the average temperature over 24 hours. For instance on a winter's day we can have 10 hours a day at 19.5°C, and 4 hours in the evening at 16°C, plus 7 hours during the night at 17.5°C, as well as some hours ramping, resulting in 18.2°C on average. This is achieved by a higher base temperature and/or an automatic increase in the ventilation temperature with increasing light levels. Also the night temperature can be increased a bit more after a bright day than after a dull day (see previous article).

Light and radiation

Light and radiation are different things, although many people refer to 'light' when they are actually talking about radiation. The sun emanates solar radiation (aka global radiation). It is made up of nearly 50% light, 50% heat and a small fraction of ultraviolet (UV). Worldwide, it is common practice to measure solar radiation using a pyranometer, which measures light + heat + UV combined, in Watts per m2. We know the light level is around 50% of the measured radiation. It is not surprising that the words radiation and light are often mixed up.

For reliable measurements, a pyranometer is positioned outside, unshaded and clean in order to operate accurately. How much radiation (and light) reaches the plants depends on the greenhouse roof and varies between greenhouses. Note that some computer brands are fitted with a cheaper meter, such as a lux meter that measures light in totally different units.

Radiation units

Solar radiation is measured in Watts per m² (W/m²), which is exactly the same as Joule per second per m² (J/s/m²). The radiation sum is an accumulation of solar radiation multiplied by duration (in seconds), expressed in Joule per m² (J/m²). The sum over a whole day gives a large number, so for convenience we add 'Mega' and drop 6 zeros, so we get MegaJoule per m² per day. A sunny summer day can exceed 30 MJ/m²/day. Alternatively, the radiation sum is expressed per cm², and a really sunny day would give 3000 J/cm²/day, which is exactly the same as 30 MJ/m²/day. **Figure 1** shows both units along the horizontal axis.

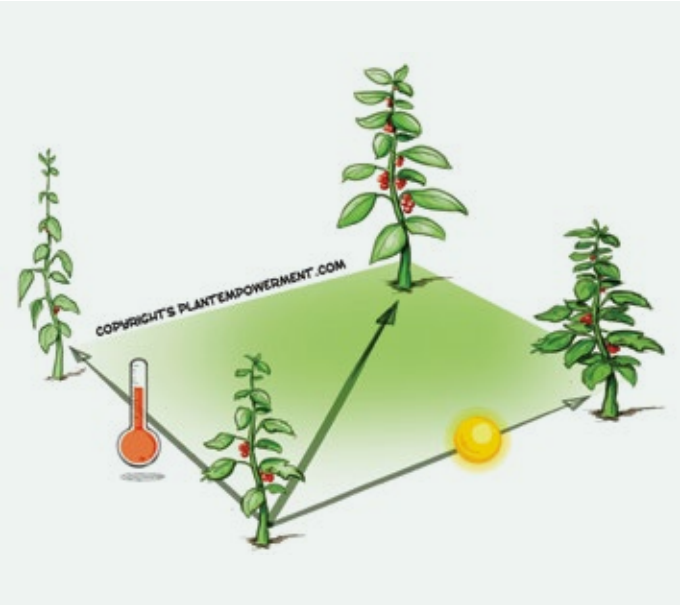


Figure 2: *The right combination of light sum and average temperature gives a balanced plant. Too warm but not enough light means plants become long and skinny. A lot of light but not enough warmth creates short stocky plants. Picture with permission from www.plantempowerment.com*

Radiation–Temperature Ratio (RTR) graph

With the computerised measurements available, we can plot the average temperature versus the radiation sum. This is called a Radiation–Temperature Ratio graph or RTR graph. Figure 1 is an example, with the radiation sum on the horizontal axis, and the average 24-hour temperature on the vertical axis. Each dot represents one day. Ideally the dots would all be on the red line, as that is the perfect RTR balance. But instead the red dots are dancing around the red line. The grey arrows point to two days that had the same radiation sum (about 11.5 MJ/m²/day), but a different average temperature (18.5 and 22.6 °C). This large difference demonstrates that radiation and temperature were not very balanced in this situation, due to an inconsistent control strategy. The two blue circles on the graph mark two dots that are obvious errors, perhaps due to a computer glitch or faulty sensor. They should have been removed.

Setpoints

Because temperature is so important, we want to find the cause of this undesirable spread of dots. First check if the data were correct or if some were accidentally wrong. Secondly, is it either the day or the night temperature that seems out of alignment? Thirdly, is the deviation most likely to do with heating or with cooling (venting, screening, fogging, use of fans, etc)? Can the deviation be due to humidity control or a faulty humidity measurement? In the Netherlands, growers perform this analysis as a group to learn 'the new way of growing' (HNT).

New data

After the computer settings have been improved, the data recording continues, and new dots are added to the RTR graph. It is a good idea to make the new dots another colour (e.g. green in Figure 1). It is great to see that the green dots sit closer to the RTR line, indicating a better radiation–temperature balance. So the changes in the settings were indeed an improvement.

RTR line

The red line on the graph is drawn through the points. It has a certain slope and a certain formula: the average temperature equals 18.3 degrees + 1.5 degree for every 1000 J/cm²/day. So at a radiation sum of 3000 J/cm2/day, the line goes through 22.8 °C (18.3 + (1.5 x 3)).

This formula tells something about the temperature strategy that was followed in a particular greenhouse. The line depends on the light transmission of the greenhouse roof, and also on how the grower decided to grow the plants. So this RTR formula is not a general recipe, but rather a method to analyse what is happening. Letsgrow made an online RTR graph to compare and analyse data.

Slope of the RTR line

The line shown in Figure 1 is not necessarily the optimal balance, not even for this greenhouse. The grower may decide to aim for a different RTR next year. Generally, a steeper line indicates a warmer environment, leading to longer (perhaps lankier) and more generative plants. A flatter line (less steep) indicates a lower average temperature, leading to lusher more vegetative plants, as shown in **Figure 2.** The art of growing is to strike and keep the right plant balance. The right Radiation–Temperature Ratio helps with that.

DRYNESS IN THE EASTERN NORTH ISLAND

Words by Georgina Griffiths : MetService Meteorologist

2021 year-to-date rainfall

Soil moisture deficits continue across the eastern North Island (Gisborne, Hawke's Bay and the Wairarapa), even at the halfway point of autumn. This in part reflects a much drier than normal, and much warmer than normal autumn so far (at the time of writing, halfway through April). And in part reflects well below normal rainfall across both January and February 2021 in the east of the North Island.

Year-to-date rainfall accumulations in the Hawke's Bay so far in 2021 are currently sitting **under half** of the long-term average. At Napier Airport (Figure 1), year-to-date rainfall totals are only 42% of year-to-date normal.

In Gisborne, year-to-date rainfall totals so far in 2021 are 57% of year-to-date normal (not shown). Year-to-date rainfall accumulations in Masterton at the time of writing (mid-April) are currently sitting at 70% of year-to-date normal (Figure 3).

2021 year-to-date temperatures

Daily temperature anomalies for Napier and Gisborne are shown in Figures 3 and 4 respectively, across the first quarter of 2021. These plots show a considerably warmer than usual January in the eastern North Island, as well as a run of unusual heat to start and end the month of March. Temperatures at both Napier and Gisborne were more of a 'mixed bag' during February 2021.

Temperatures across the first half of April at both Napier and Gisborne (note: not shown in Figure 3 or 4), have run **almost 2 degrees above the average** for the time of year. This is a **very significant** deviation from normal – in some locations, this will be close to record-breaking for April if the unusual warmth continues.

Soil Moisture Status

The combination of drier and warmer than normal weather across much of the eastern North Island has resulted in reduced soil moisture, compared to typical autumn levels, at the time of writing. The Napier soil moisture levels are shown in Figure 5.

Extreme soil moisture deficit is shown with the orange shading, when soil moisture levels are between 130 and 150mm of deficit.

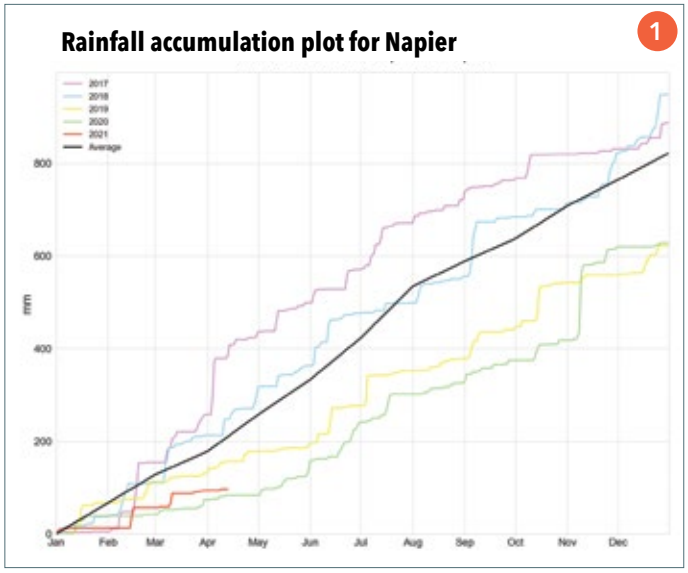
What is noticeable in 2021, is the prolonged period of extreme deficit that extends well into April, similar to the last two years (2019 and 2020).

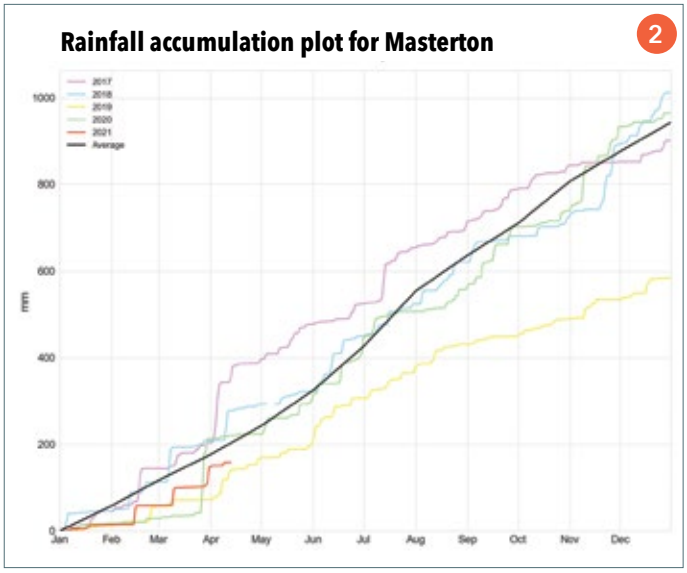
Normally, on average, some decent autumn rainfall during April would usually reduce soil moisture deficits rapidly at this time of year. (In Figure 3 the black line shows the long-term average soil moisture deficit.)

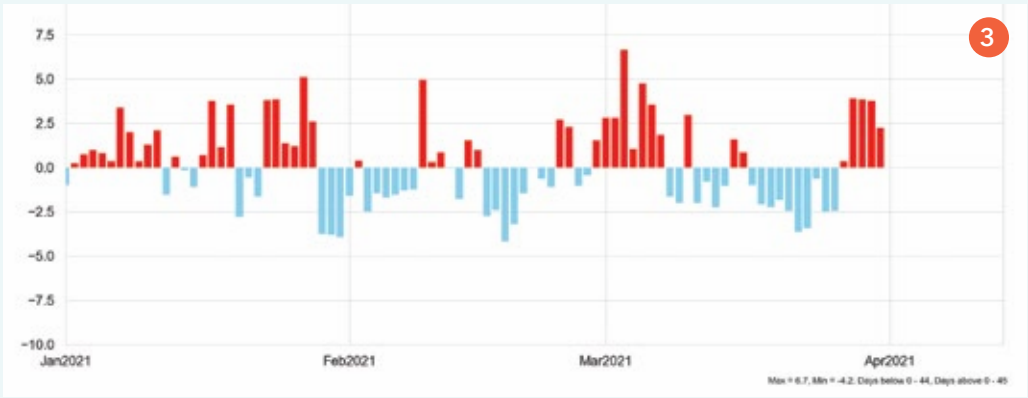
Looking ahead

Due to the currently 'neutral' El Niño Southern Oscillation (ENSO) status in the Pacific Ocean, the primary drivers of our winter weather patterns will be the Tasman Sea and the Southern Ocean. Both have been very active lately, producing some heavy rain for western and northern areas of both Islands. The Tasman Sea has recently been producing wetter northerly flows, while the Southern Ocean has recently produced an unsettled westerly regime. However, the eastern North Island has largely missed out on April rainfall from both of these drivers so far.

As always, you should keep up to date with the MetService long-range forecast at **http://metservice.com/rural/monthly-outlook**. Or sign up to the Monthly Outlook for delivery straight to your email inbox at **www.metservice.com/emails**

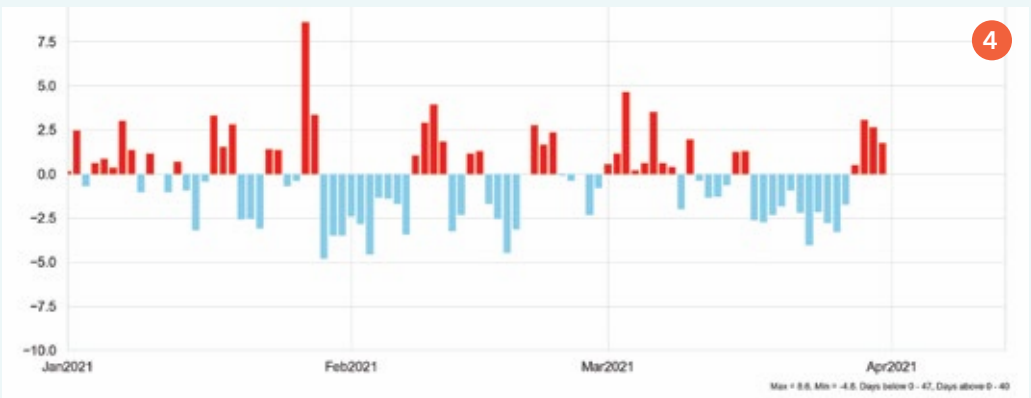






Temperature anomaly plot for Napier

Figure 3: *Napier daily temperature anomaly (departure from average) for the period 1 January – 31 March 2021 (degrees Celsius). The anomaly is calculated as a daily deviation from the long-term (1981-2010) monthly mean temperature*



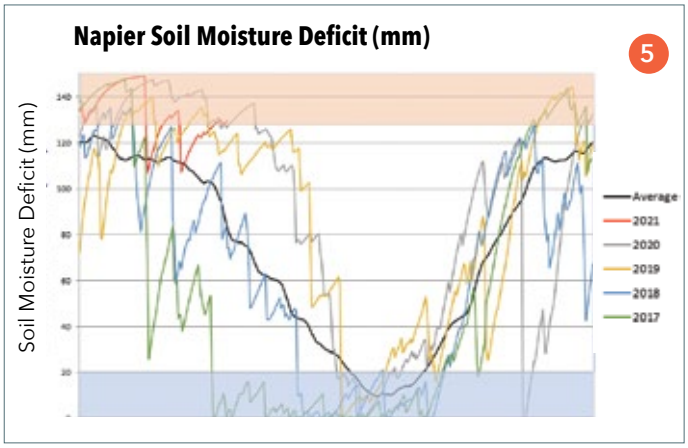
Temperature anomaly plot for gisborne

Figure 4: *Gisborne daily temperature anomaly (departure from average) for the period 1 January – 31 March 2021 (degrees Celsius). The anomaly is calculated as a daily deviation from the long-term (1981-2010) monthly mean temperature.*

Figure 1: *Napier annual rainfall accumulation (mm) for the last five years (2017 to 2021). The annual average rainfall accumulation is shown in black.*

Figure 2: *Masterton annual rainfall accumulation (mm) for the last five years (2017 to 2021). The annual average rainfall accumulation is shown in black.*

Figure 5: *Napier soil moisture deficit, for the years 2017-2021 inclusive. Extreme soil moisture deficit is shown within the orange shading, when soil moisture levels are between 130 mm and 150 mm of deficit. Saturated soils are indicated by blue shading, when soil moisture levels lie between 0mm and 20mm of deficit.*



KEEPING AN EYE ON BIOSECURITY RISKS FOR VEGETABLE GROWERS

Words by Lisa Wong : Research & Technical Specialist, Market Access Solutionz Ltd

New Zealand vegetable growers benefit from the work carried out by the Vegetable Research & Innovation (VR&I) Board on pests and diseases that could become biosecurity risks and have devastating effects on many crops.

The project 'Monitoring biosecurity risks for the vegetable and arable sectors' keeps an eye on exotic pests and diseases that could potentially enter New Zealand and affect the vegetable industry. This work is recognised by the VR&I Board as an important part of its support to New Zealand vegetable growers.

New and emerging pests and diseases continue to occur and spread overseas, causing major crop damage and affecting yields. These new pests and diseases could also be a threat to vegetable production in New Zealand.

The risk of new and emerging pests and diseases can arise from a changing distribution because of trade or the movement of plants, people or consignments. Risks can also arise because their range of host crops is expanding, or they may have a greater impact in their new environment compared with their country or region of origin.

Any pest or disease that is identified through monitoring and is raising alarm bells is notified to the Ministry for Primary Industries (MPI). MPI assesses its risk and decides if any actions or follow up is needed to manage the risk. Depending on the risk, actions or follow up can range from 'no action', through to regulating the pest and amending the Import Health Standards.

Changes in biosecurity risks in the last six months

In the last six months of monitoring, there have been a number of changes to the priority pest profiles for the different vegetable product groups **(Table 1).** Reassessing the priority pests for Process Vegetables New Zealand, Onions New Zealand and New Zealand Buttercup Squash has resulted in a greater number of priority pests that are common across the product groups. These include fall armyworm, leafminer, chilli thrips and cucurbit beetles – these pests are polyphagous and affect a wide range of crops.

The risks of some pests have increased because of their recent establishment in Australia and close proximity to New Zealand. Fall armyworm *(Spodoptera frugiperda)*, serpentine leafminer *(Liriomyza huidobrensis),* Cucumber green mottle mosaic virus (CGMMV) and Tomato brown rugose fruit virus (TBRFV) are pests of increasing concern. CGMMV has been regularly intercepted at the New Zealand border, and in the case of Tomato red spider mite and TBRFV, they have been detected in New Zealand.

Reducing biosecurity risks at the border

Some of the priority pests for vegetables product groups are viruses and viroids (Table 1). These include Pepino mosaic virus, Tomato brown rugose fruit virus, Potato spindle tuber viroid, and Tomato apical stunt viroid. These diseases are difficult to detect and require specialised testing. If they enter New Zealand they can be difficult to control.

The discovery that some of these viruses and viroids can be transmitted by seed emerged out of monitoring the scientific literature for the 'Monitoring Biosecurity Risk' project. This information was submitted to MPI to notify them of the risk. MPI then assessed the risk and decided that an amendment was needed to the Import Health Standard for seed for sowing. The outcome is that imported tomato, capsicum and eggplant seeds now need to be certified that they are produced pest-free or are tested to ensure they are pathogen-free.

This outcome highlights the importance of monitoring for emerging pests and diseases and their hosts and pathways to reduce biosecurity risks and their entry into New Zealand.

Reduced imports of fresh vegetables

Analysis of the MPI border interception data showed the quantity of imported fresh vegetables dropped by 25% in 2020. This was most likely because of disrupted

Vegetables	Tomatoes	Process Vegetables	Onions	Buttercup Squash
Fall armyworm	Fall armyworm	Fall armyworm	Fall armyworm	Fall armyworm
Leafminers	Leafminers	Leafminers	Leafminers, Onion leafminer	Leafminers
Western corn rootworm *Diabrotica virgifera virgifera*	Chilli thrips	Chilli thrips	Chilli thrips	Chilli thrips
Banded cucumber beetle *Diabrotica balteata*	Pepino mosaic virus	Banded cucumber beetle, Cucurbit beetles	Onion fly	Cucurbit beetles Diabrotica spp.
Cucurbit beetle Diabrotica speciosa	Tomato torrado virus	Bacterial wilt of bean	Centre rot	Squash Leaf Curl Virus
Tarnished plant bug	Tomato leafminer	Tarnished plant bug	Onion bacterial blight	Tarnished plant bug
Black bean aphid	Black bean aphid	Black bean aphid	Tobacco thrips, Flower thrips	Striped mealybug
Tomato red spider mite	Tomato red spider mite	Corn earworm	Black onion fly	Cucurbit beetle, Red pumpkin beetle *Aulacophora spp.*
Cucurbit yellow stunting disorder virus	Tomato Pinworm	Brown marmorated stink bug	Leaf hoppers	Cucurbit yellow stunting disorder virus
Capsicum chlorosis virus	Capsicum chlorosis virus	Phytophthora blight	Leek moth	Cucumber green mottle mosaic virus
Tomato apical stunt pospiviroid	Tomato apical stunt pospiviroid		Bulb mite	
Flea beetles	Flea beetles		Yellow disease phytoplasm	
Cucumber green mottle mosaic virus	Potato spindle tuber viroid			
Sweet potato weevils	Tomato yellow leaf curl virus			
Swede midge	Tomato infectious chlorosis virus			
Root knot nematode	Tomato brown rugose fruit virus			

Table 1: *Priority pests for vegetable product groups. May 2021*

supply chains and trade flows due to the global Covid-19 pandemic. The decrease in imported fresh vegetables did not result in a decrease in pest interception rates. There were, however, slightly more intercepted pests identified and reported in the data – this means we know more about the types of pests arriving at the border.

What should I do as a grower?

It is important for all growers to be aware of exotic pests and diseases that could potentially affect their crops. Resources such as posters and exotic pest factsheets are available from product groups. Knowing what these pests look like, and signs and symptoms of their presence on crops will help to identify potential pest and disease risks early.

HIGHLIGHTING BIOSECURITY RISKS FOR FRESH VEGETABLE GROWERS

Words by Lisa Wong : Research & Technical Specialist, Market Access Solutionz Ltd

Figure 1: *Fall armyworm larvae and damage to a corn ear, Image source: University of Georgia, Bugwood.org. Creative Commons 3.0*

Monitoring the activity of emerging pests and diseases around the globe helps growers prepare for and manage biosecurity risks that could threaten vegetable production in New Zealand. New pests and diseases are continually emerging and causing damaging effects on many crops and could be a risk to New Zealand.

Vegetables New Zealand regularly monitors several pests and diseases because they have a greater potential to enter, spread, and become established in New Zealand on vegetable crops – these are termed 'priority pests'.

Many of Vegetables New Zealand's priority pests are common to other vegetable product groups, such as fall armyworm (*Spodoptera frugiperda*), vegetable leafminers (*Liriomyza* spp.), and chilli thrips (*Scirtothrips dorsalis*), while other exotic pests and diseases are important to only one or two vegetable product groups (see VR&I article in this issue), for example, Cucumber green mottle mosaic virus (CGMMV).

Cucumber green mottle mosaic virus is a Vegetables New Zealand priority pest

CGMMV is a pathogen that affects cucurbit host crops such as watermelon, honeydew melon, rock melon, cucumber, zucchini, scallopini and pumpkin, and is one of Vegetable New Zealand's priority pests. It is also important for the New Zealand Buttercup Squash Council.

CGMMV was first described in England in 1935. Since its discovery it has spread across Europe, Asia, and North America. Its spread accelerated from the mid-1980s, and by 2016 it had spread to North America and arrived in Australia. If CGMMV arrived in New Zealand, it would have a major impact on the local production of cucurbit crops. There is no known cure for CGMMV.

> "CGMMV is a pathogen that affects cucurbit host crops such as watermelon, honeydew melon, rock melon, cucumber, zucchini, scallopini and pumpkin, and is one of Vegetable New Zealand's priority pests

Symptoms of CGMMV infection are light green mottling and mosaic patterns on the leaves, blistering and distortion **(Figure 2)**. It can also cause plants to be stunted, and importantly, it can cause severe crop losses.

New Zealand imports a large quantity of cucurbits from Australia, especially watermelons, melons, and zucchinis. In December 2019, CGMMV was intercepted on a consignment of fresh watermelons being imported from Queensland. The consignment was suspended, and Australian authorities asked to investigate the situation.

After Australian authorities put in place measures to satisfy the Ministry for Primary Industries that future exports of cucurbits would be free of the virus, importing cucurbits from Queensland was reinstated in March 2021. Fresh cucurbit imports from Australia are now required to be sourced from an accredited property that is a 'pest-free place of production'. The Import Health Standard for Fresh Produce has also been amended to reflect the requirement for a 'pest-free place of production'.

Figure 2: *Typical CGMMV symptoms on greenhouse cucumber plants, Image source: http://www.agriculture.alberta.ca*

Vegetables New Zealand has been closely monitoring CGMMV since its arrival in Australia. This involves checking notifications from national and international industry and plant protection organisations, and searching the international literature and databases. Close monitoring means that action can be taken quickly when a biosecurity risk increases so that the vegetable industry can be protected.

Learn more about CGMMV: **https://www.youtube.com watch?v=PNugs5NvcI**

Fall armyworm update

In the year since its arrival on the Torres Strait Islands and northern Queensland in February 2020, the fall armyworm has become established in Australia. A first report has also emerged from New Caledonia in January 2021. Fall armyworm can travel long distances blown by strong winds.

The impact of fall armyworm is not only being experienced in Australia but globally. Since its spread to Africa, the Indian subcontinent and China over the last four to five years, considerable efforts are being channelled into searching for ways to reduce its impact using methods such as chemical or biological control, and finding out which characteristics make it such an invasive and destructive pest.

Many Australian grower organisations have developed resources and presented webinars to support growers and increase their awareness of fall armyworm.

Learn more about Fall armyworm from Ausveg **(https://ausveg.com.au/articles/fact-sheets-fall-armyworm-2/)** or watch the ABC's short segment on fall armyworm **https://www.abc.net.au/landline/hungry-caterpillar:-fall-armyworm-hits-australian/12122370**

Maintaining an awareness of priority pests

Through the 'Monitoring Biosecurity Risks' project supported by the Vegetable Research & innovation Board and by monitoring its priority pests, Vegetables New Zealand is able to maintain an awareness of the risks posed globally by new and emerging pests and diseases. Vegetables New Zealand has factsheets so that growers can keep up-to-date on which exotic pests and diseases they need to keep an eye out for when scouting crops. Maintaining awareness of these high risk new and emerging pests and diseases is important so that New Zealand growers remain prepared for potential incursions.

The *Vegetable Growers On-Farm Biosecurity Manual* should be used to assist growers in planning biosecurity management. This manual has been sent out to most growers, and if you need a copy, please contact Vegetables New Zealand.

For more information please go to the Vegetables New Zealand website: **https://www.freshvegetables.co.nz/**

ORGANIC CERTIFICATION

final word

By Mike Nichols

There is a steadily increasing world demand for organically certified horticultural products.

It therefore makes very good sense for New Zealand, as a provider to the world of premium horticultural products, to further increase the return by producing crops in a manner which ensures that they can be organically certified. The problem is, however, that there is no one single organic certification standard worldwide. Even within New Zealand there are two slightly different organic standards, BioGro and Demeter, although both are soil-based.

In the European Union (EU) it is necessary to grow the crops for organic certification in soil which is in direct contact with the bedrock, while the United States Department of Agriculture (USDA) will certify crops as organic when they are grown hydroponically, provided that the nutrients supplied to the crop are organically derived and no manufactured pesticides are used. Currently in New Zealand the organic standards require the crops to be grown in soil in contact with the bedrock, although there are some exceptions – for example seedling production may in special circumstances be in a growing medium. Some 20 years ago Atkins and Nichols (2004) undertook a study comparing conventional hydroponics and organic hydroponics for growing lettuce, and found only a small delay in maturity with the organic hydroponics crop.

The disparity in the requirements under the organic certification systems for New Zealand and the United States could prove troublesome for our legislators. The new organics products bill which is approaching its second reading in Parliament will require some very nimble footwork to overcome this difficulty. It all comes down to a single word in the bill, the word "standards." If New Zealand continues with the current requirement that organically certified products must be grown in soil-based systems, then USDA certified product could not be sold in New Zealand as certified organic, unless an exception is made for USDA organic products. However, this would clearly be to the economic disadvantage of any local growers using organic hydroponics production technology, unless two different organic standards are accepted in New Zealand.

Of course there are excellent reasons to avoid having two separate certification systems, but in my experience most of the general public have little appreciation of what organic certification actually means. In a survey carried out some 20 years ago, the general view was that people purchased organic food because it was perceived as having received low or no pesticides and was therefore safer to eat. This aspect of food safety is now more than adequately covered by NZGAP (Good Agricultural Practice), with the added advantage that GAP also considers environmental aspects of production. No agronomist or grower would disagree with the value of organic matter in the soil, so the only difference is really whether to use inorganic fertilisers to supplement the nutrients in the organic manure.

New Zealand soils are derived essentially from volcanic activity, and this means that in certain situations essential elements for plants or animals may be absent or at a low level. The pumice soils of the central North Island are a good example, being very low in selenium, which is not essential for plants, but is essential for animals. In any case there is an ongoing loss of essential nutrients from the soil due to the removal of crops and animal products for export, or for local consumption. These nutrients leave New Zealand either as exports by sea or air, or in human or animal waste or in stormwater, which finds its way to the ocean either directly or via the river systems. In any case there is a direct loss of nitrogen (N), phosphorus (P) and potassium (K), along with the other minor and trace elements that plants and animals require to thrive. These must be replaced, and only nitrogen can be replaced locally via nitrogen fixing plants (legumes). Thus, sustainable agriculture is only possible if the essential minerals that we export are replaced. And therefore regenerative agriculture and organic agriculture are simply not sustainable in the long-term.

Horticulture is trending more and more towards protected cropping, possibly due to the risks enhanced by global warming, but also because of the increasing demand for high quality products without defects.

I can recall during the first international conference on organic greenhouse horticulture, held in the Netherlands in 2010 (Anon 2011), that during one of the field visits

we learnt that in order to keep productivity profitable, an organic greenhouse grower with a 1 ha greenhouse operation on 10 ha of land applied all of his organic nitrogen for the 10 ha to the greenhouse because intensive greenhouse cropping requires considerably more nutrient inputs than field cropping to be profitable. (Note that EU regulations limit nitrogen applications to 170 kg/ha of N per year to reduce nitrogen leaching with the intention of reducing nitrates reaching the river systems, because of the potential health risk from nitrates in drinking water.)

There is little doubt that hydroponic greenhouse systems are much more efficient in nutrients (and water) use than soil-based systems. The quantity of leaching can be controlled, or even virtually eliminated, by using a recirculating hydroponic system. With our concern for diminishing water resources, and pollution of rivers by nitrogen and phosphorous an ever-increasing problem, environmentalists should be promoting the use of hydroponics for crop production rather than reverting to soil-based systems for intensive horticulture.

Long-term, I predict that organic crop production will divide into two distinct sectors, intensive greenhouse crops which will be hydroponic, and broad acre outdoor crops which will be soil-based. The common factor will be that neither system will use synthetic agricultural chemicals, and will rely entirely on the biological control of pathogens.

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Anon (2011) "Proceedings of the first international conference on organic greenhouse horticulture" Acta Hort., 115, 190 pp. Editors M Dorais & S D Bishop.

K. Atkin & M. A. Nichols (2004) "Organic Hydroponics". Acta Hort., 648, 121–127.

PRODUCT GROUPS

ALL THE LATEST NEWS FROM YOUR PRODUCT GROUPS

Process Vegetables NZ

LOOKING STRATEGICALLY AHEAD TO 2030 – PART TWO

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

Developing the Strategy

In my March article I provided an overview of the planned strategy exercise that Process Vegetables New Zealand (PVNZ) was going to undertake in April, calling for your input into the development of a future strategy.

Thank you to those of you who got in touch and the Process Vegetable board members and processing company representatives who participated in the strategy workshop in April. We had a fantastic session run by an external facilitator who got us to reflect on what the sector looked like 10 years ago, what has changed since that time and where we may be in 10 years' time if we are wildly successful.

There were robust discussions between grower directors and processing company representatives at the strategy session about how we will work towards becoming a more productive, resilient and sustainable sector and what our current and future priorities are to be successful. It was not surprising that all present had very similar ideas on where our focus should lie.

Of the topics we discussed, all participants kept coming back to the same areas (listed below) where we should be focusing PVNZ's resources for the success of the sector in the future. This convergence of ideas means that there should be widespread support of the future strategy by both processing companies and growers in the future.

1. **Government advocacy and relationships**
2. **Sustainability (including climate change and freshwater management)**
3. **Biosecurity through the Government Industry Agreement partnership**
4. **Targeted research and development**

The next step in the process to develop our strategy is for the facilitator to analyse the information gathered on the day and come back to PVNZ with draft concepts to develop a 'strategy on a page'.

We hope to have a final strategy document for endorsement at our Annual General Meeting, to be held in the first week of August 2021 at the New Zealand Horticulture Conference.

GROWER ENERGY WORKSHOPS

Words by Helen Barnes : General Manager, TomatoesNZ Inc.

We are hosting two workshops in May focusing on energy for greenhouse growers. We have speakers presenting on a range of areas of interest to indoor growers including:

- **Energy efficiency measures for greenhouse growers**
- **Low carbon greenhouse heating technologies**
- **Sustainable heating from biomass and crop waste**
- **EECA (Energy Efficiency & Conservation Authority) industry decarbonisation plan, case study learnings and support.**

The workshops are for a half-day and will include lunch, starting at 9.30am and finishing by 1.30pm.

Christchurch

Wednesday 12 May at Brevet Lounge, Airforce Museum, 45 Harvard Ave, Wigram.

Pukekohe

Tuesday 18 May at the Leslie Comrie & Douglas Wright Rooms, Franklin Centre, 10 Massey Avenue.

To attend you need to RSVP beforehand to Jacqui Stalknecht on jacqui.stalknecht@hortnz.co.nz or call 04 494 9978. Please let us know any special dietary requirements.

Consultation on coal boiler ban

On 8 April the Ministry for the Environment (MfE) opened consultation on their proposal for phasing out fossil fuels on process heat. This consultation is open until 20 May and we will be making a submission. The consultation opened on the same day that Minister Woods announced a ban on new low and medium temperature coal boilers, to come into effect by 31 December 2021.

Their proposal includes:

- Implementing the government's commitment to ban new low and medium temperature coal boilers;
- Phasing out coal in existing sites by 2037 for low and medium temperature process heat, through re-consenting;
- Phasing out use of other fossil fuels such as diesel and natural gas by requiring a switch to less emission intensive fuels such as electricity, unless no economically or technically viable alternatives exist; and
- Requiring industrial sites above a threshold to have an emissions plan to encourage energy efficiency, best practice, and transition to low-emission fuels.

This MfE consultation opened up just after the Climate Change Commission consultation, which included similar proposals, on 28 March. It is reported that about 10,000 submissions were received on the Climate Change Commission's consultation, and they are due to report to government with their finalised advice by 31 May 2021. If you want a copy of Horticulture New Zealand's submission, which we contributed to on behalf of greenhouse growers, please contact us.

On a brighter note, we are pleased to see that Tasman grower JS Ewers, has been awarded $4.078m co-funding in the first round of the Government Investment in Decarbonising Industry Fund (GIDI fund). This funding will be put towards installation of a new biomass-fuelled plant to replace an existing coal boiler, conversion to wood pellets on smaller sites and retrofitting thermal screens to enhance energy efficiency.

Pierre Gargiulo from JS Ewers will share his learnings on being involved in this process to date at the Christchurch energy workshop.

AGM 5 August 2021 and conference

The TomatoesNZ Inc Annual General Meeting will be held at the Horticulture Conference at Mystery Creek, 4.15pm on Thursday 5 August 2021. The conference runs over two days and this year the theme is *"Resilience and Recovery."* The opening sessions on Thursday 5 August will include a series of short thirty-minute sessions for covered crop growers. Topics will include greenhouse hygiene, updates on biocontrol research, energy, and sustainability.

Following the morning sessions, the presentations will move into areas of relevance to all growers including updates from government, supermarket operations, climate change, labour, water management and regenerative agriculture. There will also be two guest speakers on resilience, one of whom will run workshops specifically designed to provide tools to help with resilience.

Once the full programme is confirmed we will provide further details. In the meantime please mark 5–6 August in your calendar.

The conference website is:
https://conferences.co.nz/hortnz2021/

Board nominations

Current board members Callum Grant from Kakanui and Albert Shih from Canterbury retire by rotation this year, and both have confirmed they will make themselves available for re-election. In addition, there is currently also one vacancy for an elected board member. If you are a tomato grower interested in joining the board, please get in touch with me to find out more.

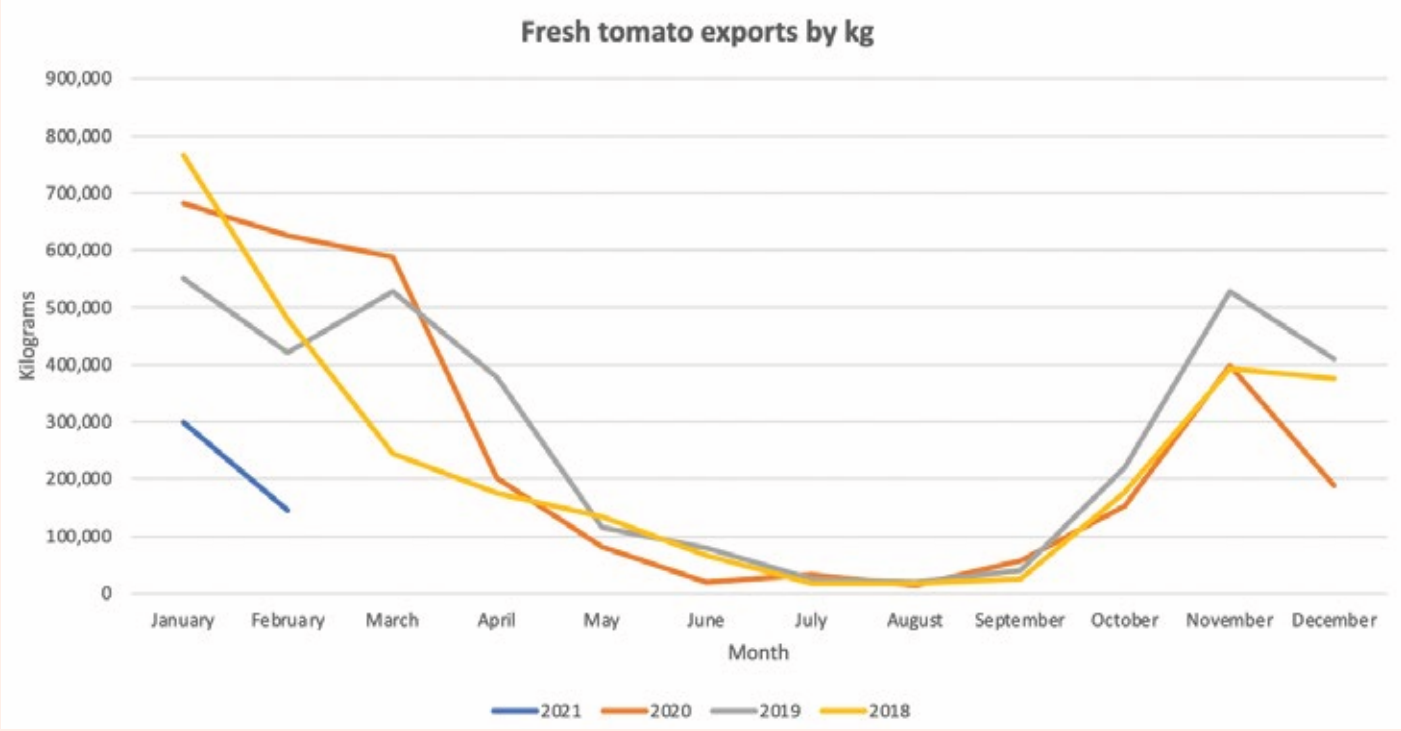
Greenhouse tomatoes residue compliance information

We have recently posted an updated New Zealand residue compliance information booklet to greenhouse tomato growers. If you have not received this, or have received a copy but are not growing greenhouse tomatoes, please let us know. An electronic copy is also available by contacting us.

Tomatoes sales stunt

Two supermarkets who chose to sell fresh tomatoes at 9c and 8c per kg for a day each caused quite a stir in March and resulted in some media attention. Whilst this was an individual owner/operator supermarket decision it was quite unsettling and something we do not want to see repeated. Selling tomatoes so far below the cost it takes to grow and market them provides little benefit for growers. We can only hope that a few new customers were attracted by the special and have now introduced fresh healthy tomatoes to their daily diet.

In the meantime, we are working on a plan to develop a series of stories on tomato growers and showcase the work that goes into providing a tasty fresh tomato to the market. We will share more on this in the future, but if you would like to be involved please let us know.



Export figures

> **In New Zealand we saw the average retail price for standard loose tomatoes fall to $2.44/kg during the second week of February this year, about a dollar less than in February 2020**

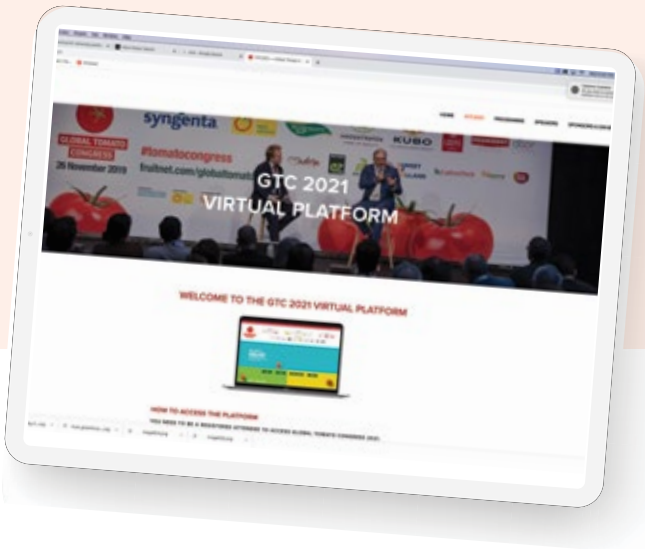
At the time of writing this update, the export statistics for January and February 2021 showed a substantial drop compared with the same months last year, down 56% in January and 77% in February. Unfortunately, the cost and availability of freight, and soft demand in some export markets this summer season has severely limited opportunities for exports.

Meanwhile in New Zealand we saw the average retail price for standard loose tomatoes fall to $2.44/kg during the second week of February this year, about a dollar less than in February 2020.

If you registered for the online congress then you can access these presentations on the website: **https://www.globaltomatocongress.com/gtc2021.**

Global tomato congress presentations available online

Spanning energy, marketing, breeding, sustainability and more, these presentations are well worth a look.
If you registered for the online congress then you can access these presentations on the website https://www.globaltomatocongress.com/gtc2021. If you do not have access please contact us to help with getting the content you are interested in.



ENZA ZADEN

OPPORTUNITY: Enza Zaden, Melbourne, Australia

Trial, evaluate and report on new experimental vegetable varieties in the heated greenhouse business.

"We are looking for a Product Specialist that has a passion for, and excellent knowledge of, the agricultural sector and seed industry to join the Enza Zaden team in Melbourne, Australia."

Louise Milar: Senior Technical Sales Representative, New Zealand

OUR POWER: Enza Zaden

ENZA ZADEN: We are a vegetable breeding company that develops vegetable varieties. We produce and sell the seeds of these varieties all over the world. For more than 80 years we have worked with the best that nature offers. We support this with state-of-the-art technologies to speed up our breeding process.

OUR RESULTS? Strong, healthy, tasty, and climate-proof vegetable varieties with higher yield per square meter and less need for crop protection products or fertilizers.

THE SCOPE: What are you going to do as a Product Specialist?

AS PRODUCT SPECIALIST: You are responsible for vegetable seed variety trial planning and execution. You develop, document, and communicate R&D screenings and different trial plans. You ensure a qualitative execution of these trials in close coordination with all stakeholders. These stakeholders include breeders, technical and sales team members and channel partners for specific market segments.

TEAM SPIRIT AND PASSION ARE AN ABSOLUTE NECESSITY TO BE SUCCESSFUL IN THIS POSITION.
You will develop and maintain strong working relationships with your channel partners and your colleagues at Enza Zaden.

IN SHORT, YOU:

- Have a BSc or MSc level in Agronomics or Agricultural Technical engineer.
- Have at least 3 to 5 years of relevant work experience with capsicum, tomato and cucumber crops in heated greenhouses.
- Like to travel nationally on an ongoing base, and internationally on average 2-3 times per year.
- Know how to work with the Microsoft Office (Word, PowerPoint, Outlook) and have advanced skills working with Excel.

INTERESTED: Contact our Human Resources team in the Netherlands

Please, send your application to our HR department: Ka Kyung Langstadt, Global Recruitment Manager

- **+31 65 522 5507** • **K.Langstadt@enzazaden.nl**
- **https://www.enzazaden.com/careers-and-learning/vacancies/product-specialist-heated-greenhouse-crops**

Potatoes™ NEW ZEALAND

UNEARTHING COMMUNITY GOLD

Words by Kate Underwood

Annual Ophir Spud Growing Competition

Located right in the heart of Central Otago amidst the rail trail, a remarkable village famous for recording the coldest temperature in New Zealand is home to some unexpected tuber-related rivalry

Enter the Annual Ophir Spud Growing Competition, held every year over Easter Weekend and hosted by the Ophir Welfare Committee to raise funds for the community. This hotly contested affair applauds the heaviest, lightest and weirdest potatoes and celebrates the warm and wonderful people who grow them.

Most of Ophir's permanent residents and 'cribbies' (holiday homeowners) compete, with 125 spuds to be unearthed over two days. Proceedings kick off on Easter Friday when the competition potatoes are dug up, bagged, and weighed.

All the spuds come from seed potatoes sold to participants during Labour Weekend – with the variety selected by the previous spud champion.

This year, ninety-one-year-old Peter Deloitter chose the red-skinned, all-purpose 'Van Rosa'.

At 5pm on Easter Sunday, the Ophir Peace Memorial Hall comes alive with a convivial prize-giving, a heated potato auction and a potluck dinner. Shared tables are set, and the stage is lined with paper bags containing spud entries of all shapes and sizes.

To support this wholesome, worthy cause, the Potatoes New Zealand Charitable Trust donated the trophy for the 'Heaviest Potato Shaw', along with other garden-related prizes.

A 'shaw' is the term used to describe the yield or group of potatoes that are grown from one single plant. To ensure a fair playing field, prizes are broken up into permanent and cribbie residents, as "some have more time on their hands."

During the lively and tense auction, bags of potato shaws are sold for anywhere between $40 to $100, with a few particularly proud growers pushed into paying big dollars to secure their own spuds!

Committee member Malcolm Topliss explained "perhaps it was the variety or the weather, but this season saw quite a few weird potatoes." The prize for the weirdest spud was awarded to Colleen and Trevor Lewis, who grew a rather peculiar looking specimen involving several potatoes morphed together into one abstract tuber.

The heaviest single potato in both categories each coincidentally measured 700g. Gary and Steph Price won the prize for the cribbies, while Harvie Trainer took out the prize for the permanents. The overall lightest shaw went to local knife-making legend Peter Lorimer, which weighed so little it didn't even register on the scales.

Historically the biggest shaw measured a whopping 7kg and is still yet to be beaten! "We believe the wet weather in January could have contributed to the predominance of smaller shaws this year", said Malcolm.

Within the heaviest shaw category, Gary and Steph Price took out first place for the cribbies, clocking in at 3.35kg. Harvie and Judy Trainer dominated for the permanents, adding another to his collection with the winning weight of 3.65kg. Harvie modestly shared, "I knew I had it when I saw Peter's were close to the hedge. Potatoes love to be in full sunlight, people think you should water them all the time, but it's a bit of a fallacy actually." With a winning bid of $70, Heather walked away with the champion spud shaw, which was destined for a salmon, leek and potato soup.

The overall winners of the Ophir Master Spud Advantage were Harvie and Judy Trainer, which means they're given the honour of choosing the next competition spud. In 2022 the potato of choice will be: 'heather' – another red-skinned, all-purpose variety.

The potluck dinner produced a fascinating spread, with BYO nibbles and wine. Unsurprisingly potatoes featured on the shared dinner table, with several gratins, bakes and roasties amongst a plethora of dishes and cuisines.

Collectively the auction raised over $2,000, with a spud gun and Mr Potato Head selling for $80. The raffle prizes were also impressive, with a dozen Central Otago wines won and then donated back into the auction line-up, helping to raise another $300.

Chairman of the Ophir Welfare Committee, Spike Broadbent, shared that "profits from this year's spud-dig will go towards a new barbeque for future gatherings, including the Waitangi Day pétanque tournament." The welfare committee started out as a way to look after the wives and widows of World War II soldiers, and today helps to maintain the village and look after the town pool.

Spike says, "it's a really great wee community and there are so many skills and such expertise here." The history within this place is incredible. Malcolm's wife and avid vegetable grower, Christine, shared "we've all turned into amateur historians living here."

Most people in Ophir grow at least some of their own food with gardens galore, and many are self-sufficient for at least six months of year, but if they need a night out, locals head down to the iconic Blacks Hotel and Restaurant – frequented by many visitors on the cycle trail.

Twenty-eight years on, there aren't many things that will stop a community embracing their residents and their homegrown potatoes. Here's to Ophir, an aspirational town where rich history, community spirit and spuds reign supreme!

View full prize list here:

https://potatoesnz.co.nz/news-info/media-articles/

SOUTHEAST ASIA RIPE FOR EXPORT DEVELOPMENT

Words by James Kuperus : Chief Executive, Onions NZ Inc.

The New Zealand onion industry is always eager to develop and diversify the markets it exports to each season. Exporting to new markets is no longer just about the tariff rate or the conditions of trade, there is an absolute need to understand the specific characteristics of markets prior to entry or investment.

World demand for fresh onions has seen continuous positive growth over the past decade, driven by growing population and rising per capita consumption. This is expected to continue with a global compound annual growth rate of 4%. This puts New Zealand, the eighth largest exporter of onions globally, in a unique position to not only solidify its current position but continue to capture the premium market share in current and new markets, moving forward.

Currently, New Zealand onions account for 27% of **Indonesia's** onion imports, making New Zealand the single largest onion exporter into that country, closely followed by China. This trade returned $40 million (free on-board value) to the New Zealand industry in 2020. Recent research suggests that there is still meaningful market share to be captured in Indonesia due to the rapidly growing middle class, which has been experiencing an annual growth rate of 12% since 2002. This presents a meaningful opportunity for New Zealand onions, noting already established trading relations and a positive reputation for providing consistent quality of storable onions. Challenges in the market access space do affect the consistency of the market currently, but the same challenges also affect competitors and potential new entrants to the market.

Vietnam is the fastest growing economy in Southeast Asia, with its middle class expected to represent over half the population by 2030. Due to this growing middle class Vietnam's population is leading more toward grocery retail, which is now worth approximately $US 117 billion. Since the year 2000 the value of imported onions into Vietnam has increased at a compound annual growth rate of 17%. However, the competition landscape in Vietnam is challenging, dominated by the two largest low-cost producers in the international onion market, China and India. New Zealand established favourable market access to Vietnam in 2017. The commercial viability of the market has been slow growing over the past four export seasons, with some meaningful demand starting to spark within the market in 2020.

Thailand as a proportion of consumption is more reliant on the importation of onions than either Vietnam or Indonesia. Currently, 39% of onions consumed in Thailand are imported, which has been attributed to the relatively high proportion of the population living in urban settings, approximately 51% in 2019.

The premium market for onions in Thailand is experiencing significant growth, increasing at four times the rate of the low-cost segment of the market. The positive impact of this for premium onion types can be seen from the successful entry of Australia into the market. From negligible volumes in 2017 to approximately 7,000 tonnes by 2020, they now represent 17% of the Thai onion import market. Although at the present time, New Zealand Onions is still working on gaining meaningful market access to the market, there is already eager demand from Thai importers. Early New Zealand Trade & Enterprise (NZTE) predictions in 2019 proposed that the market could be worth $5 million to the New Zealand onion industry within three years of the market opening and trade being established. It could be our next Indonesia with the right approach to market.

The rapid demographic and social changes currently being experienced throughout these markets and the importance of onions in Asian cuisines is likely to strengthen demand for high quality imported onions. Particularly given that the demand for imported onions from the region is mainly driven by consumer concerns over food safety standards of domestic product, due to the variable quality of local product. This coupled with the proximity of the markets to New Zealand and the increasing ability for these markets to afford a premium, presents opportunity for the New Zealand onion industry in the Southeast Asia region.

The industry is investing in further research which will prepare Onions New Zealand and its members to take advantage of opportunities in these markets in the near future.

Information within this article was drawn from a recent research project completed by Ministry for Primary Industries economic intelligence unit on the market opportunity for onions.

Citation: Ministry for Primary Industries. (2021). Onion Market Opportunities – Market Analysis, Wellington: MPI

CLIMATE CHANGE AFFECTS ALL COVERED CROP GROWERS

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

Climate change discussion is heating up… as long as that heat is renewable.

Covered crop growers are in a battle to decarbonise their process heat resource. For most growers, the process heat used in their operation is a large capital cost item, costing upward of $500,000 to many millions of dollars in large operations. Moreover, the cost of running the plant is a significant variable cost, second only to labour each month. Given the significance of the input, growers are in a no-win situation if they are running a carbon process heat plant.

Carbon energy, derived from coal and natural gas, is considered by this government as a non-desirable heat source because it contributes to climate change gases. Growers, like the government, realise carbon heat energy is not a long-term solution. Growers support the need to adapt for climate change to ensure their children have a future. Growers want to feed their children and the world. The two issues are not at odds but need a managed strategy or plan to ensure both are sustainable from the grower viewpoint.

The government has placed time limits on the reduction of climate change gases. It basically states that by 2035, all process heat needs to be renewable energy. What the statement forgets to say is, how we are going to get there? Any change comes with costs. Most covered crop operations will need to change or modify their plant, at considerable cost, if they are going to use renewable energy. Then there is the cost of running the new plant. If we use electricity as an example, the cost of electricity needs to be at a level coal or natural gas was before 2020.

Currently electricity is three times that level, and increasing at a fast rate. The government, to its credit, has a number of funds that give businesses a chance to compete for money in a co-funding process. This requires applicants to write a business case, which is considered by a panel. If accepted, the business needs to comply with reporting on milestones throughout the project. The issue here is that this takes time and involves a lot of compliance.

These requirements can work for businesses large enough to have a project manager. But if you are a small business with limited human resources, where do you get time to apply compliance to your business, let alone project management for compliance? All capital investment needs checks and balances to ensure it is successful, but in this case, where the grower has no option if they are to remain in business, it would be preferable to look at the problem as an industry project, where capital is assessed at scale for multiple operations, and solution developed as a network of resources.

The reporting could also be aggregated, with individual growers grouped together to give a New Zealand focus to the issue. This would also create meaningful data for the government, while individual growers could be benchmarked to promote best practice in a grower-based improvement system.

Growers need certainty. A stable economic and political platform is required to encourage investment. If the government is serious about climate change, it needs to work with the affected parties to build a co-designed transition plan. A managed strategy or plan will give growers the certainty they need to invest in their businesses. Given the time limit the government has placed on this change, it is also imperative that growers get access to capital funding to make the change. Again, this needs to be a co-designed system involving all parties: growers, the government, industry and suppliers. Here is our chance to build a network of knowledge and resources that will give a far wider perspective on energy than a single grower energy plant.

Now is our time to be bold and involve growers, communities and the government in how we manage energy in the future.

LASTING THE DISTANCE

Over the last few years Scott Capper, Farmgard's key accounts manager, has worked with large growers in Hastings, Pukekohe and Dargaville to design a range of new high end rotary hoes and power harrows.

"They're suited to the specific horticultural applications we use them for in all the demanding conditions we have throughout New Zealand," he says.

Working with the engineers at the Italian company Celli, they have designed the EVO range, which are a super heavy-duty series of folding rotary hoes and power harrows.

"In New Zealand we often tow a roller or add bed formers to these implements and put them behind the largest tractors available," he says.

"Growers demand the machines operate in all soil types 24/7, literally all day every day during the season. The EVO is designed for this and includes a three-year warranty, which gives growers peace of mind, along with fixed cultivation costs."

Celli's power harrows range in size from one metre for tight spaces to eight metres, and suit tractors from 40 to 450 horsepower. Extra rotors combined with 45-degree vertical sliding side plates contain the soil as it is worked and ensure a flat finish for seedbed preparation.

They have a fully welded gearbed to give greater rigidity, which ensures the hardened gears stay true at all times and have a long life. There is 15-degree rotor timing to reduce horsepower demand and fuel consumption, with a

fine seedbed the end result. Boron steel tines are featured, along with forged and heat-treated one-piece rotor shafts. Greaseable top bearings ensure adequate lubrication.

> **"Growers demand the machines operate in all soil types 24/7, literally all day every day during the season. The EVO is designed for this and includes a three-year warranty, which gives growers peace of mind, along with fixed cultivation costs.**

Manukau-based Farmgard can supply a range of Celli machines produced by the company which was founded in 1955. It manufactures around 4,000 units a year with over 100 different models available, most with a two-year warranty. New Zealand is one of its most important markets with its folding tillers regarded as being market-leading products among the most demanding users.

Farmgard started 40 years ago with Scott's grandfather inventing and manufacturing the Farmgard grader blade in a workshop under his house. Since then the company has grown to now importing and distributing top international farm machinery brands such as Celli, Abbey, Berti, RZ and Stanhay to growers, farmers and contractors throughout Australasia. There are 12 dealerships spread around New Zealand so reliable parts replacement and after sales service are both assured.

For further information visit **www.farmgard.co.nz** or phone **0800 farmgard (32764273)**.

GENERATIONAL VEGETABLE BUSINESS CONTINUES TO THRIVE

The moment you start talking to Dennis Fong, two characteristics stand out – his love for his family and his love of cropping.

The Fongs have been cropping in Pukekohe since Dennis' father came out to New Zealand from China with his father, Dennis' grandfather. "Dad started the business in 1964. He came out here during the Second World War and started cropping on the other side of Pukekohe. When the war ended my Dad sent for my mother to come to New Zealand and that's when I was born. I had two siblings born in China and the rest of us were born here in the 1950s."

The importance of all the family being involved in the business is evident even in its name. "My wife's name is Loedar and mine is Dennis so we made it Desloe Produce," he explains.

Desloe Produce is now a third-generation business, with sons Scott and Myles involved in its daily operations. "I'm thankful the two boys have come on board and have taken over the business so I can retire," says Dennis.

The family grow onions, cabbage, cauliflower, pumpkin, snow peas, broccoli and Gai lan (Chinese broccoli) on approximately 200 acres. Half of the land is planted in cabbage and cauliflower.

Vegetables are grown year-round, with cabbage and cauliflower in the cooler months and onions and peas in spring and summer. Growing year-round, as Dennis says, allows him to keep his staff employed permanently.

Dennis exports approximately 80% of his onions to Europe, Indonesia and the Pacific Islands, with the remaining 20% sold locally. He has a preference for growing early harvest varieties, ready for exporting in November and December. These varieties are sweet tasting and popular in the Pacific Islands.

Of the 40 years Dennis has been cropping, he says "Fruitfed has been involved with me for 30 of them."

For the last three years Pukekohe Fruitfed Supplies Technical Horticultural Representative Jesse Clark, has been working with Dennis and his family. As Jesse describes, "I regularly check the crops for pests and diseases and nutrient deficiencies along with providing Dennis with agrichemical and fertiliser recommendations."

Grower Dennis Fong with Technical Horticultural Representative Jesse Clark

Over the years Dennis has appreciated the support of the Fruitfed Supplies team. "The reps have been really good. We can't keep up with the advancements in technology, but with Fruitfed assisting us with our growing, we receive advice on new chemicals such as insecticides.

"With Fruitfed it starts with soil testing, and as the crops grow, we need them to complete leaf testing. There's a lot of work we need them to advise us on."

Looking to the future, what does Dennis think is in store for the horticultural industry? He says, "I think the industry is going to get tougher, with compliance, traceability and other requirements. That's where Fruitfed comes in with an advisory role."

LOOKING AFTER THE SOIL, AND HIMSELF

Waiuku vegetable grower, Martyn Callaghan, has cut his cropping area but boosted profits, thanks to a change in production practices. An onion breeder at EnzaZaden in Pukekohe for the past 30 years, Martyn also grows his own crops of potatoes, broccoli and pumpkins on the four hectares of land he owns.

Five years ago he started moving towards a more sustainable production system to improve soil health, encouraged by the positive reaction to the fresh vegetables he sold at the Pukekohe Farmers' Market.

"When using conventional lime, I didn't like seeing how the heavy spreader unit caused soil compaction on wet soil, destroying organic matter and soil organisms," he says.

"The big thing for me is being able to spread lime on small areas any time of the year rather than putting a lime spreader truck through the paddock in autumn."

For the last three years he's applied Calciprill, a granular lime product, applying 500kg/ ha to maintain soil pH in the 5.8–6.5 range. In his potato crops he's using Calciprill banded with compost right underneath the tubers.

"I want to secure a close association with the plant roots and soil biology," he says.

He's finding the flavour of vegetables is better and puts it down to the moderated availability of nitrate through the use of compost in combination with Calciprill.

"Calcium is one of the keys to plant health," he says.

"It's one of the most under-rated nutrients in plants. It's vital to ensure thicker cell walls so there's less disease threat and dehydration. For potatoes it is scientifically documented that good levels of calcium in foliage helps to suppress late blight."

Calciprill is manufactured using lime from a Te Kuiti quarry which is finely ground to 2–6mm, with molasses used to form the granules. Calciprill dissolves quickly when it comes into contact with moisture and starts working within six to eight weeks, making it more readily available to plants.

Martyn Callaghan has been using Calciprill for several years

> **"The big thing for me is being able to spread lime on small areas any time of the year rather than putting a lime spreader truck through the paddock in autumn**

Calciprill has minimal dust and a low application rate of between 200–500kg a hectare, dependent on soil type and pH movement required. It's widely used in Europe and Australia and is now available in New Zealand. Impressed with results across different farming and grower applications, Revital Fertiliser advisors have begun distributing Calciprill across the North Island.

"The big lime truck's a thing of the past, and my soil's calcium requirement is being looked after using Calciprill," Martyn says.

His growing operation is now just one profitable hectare. "All I'm doing is making life easy for myself."

For further information contact Elenka on 021 595 311 or email elenka@revital.co.nz

TRIMAX MOWING SYSTEMS: A UNIQUELY KIWI WAY TO POWER YOUR PERFORMANCE

Trimax Mowing Systems is a family-owned New Zealand company that designs, manufactures and distributes tractor-powered commercial mowing equipment.

Founded in the Bay of Plenty in 1981, Trimax has grown into an international success story with facilities in Australia, the United Kingdom and the United States. However, the heart of Trimax (and our global headquarters) still resides where we started in Tauranga, New Zealand.

This year Trimax is proud to celebrate 40 years of business – a business which first put down its roots during the Bay of Plenty kiwifruit boom of the early 1980s. Trimax flail mowers became a popular choice with growers due to the super-efficient Gamma Flail, developed by Trimax founder Bob Sievwright, which effortlessly mulched prunings and mowed grass to a superior finish even in the most challenging environments.

To this day, Trimax flail and rotary mowers remain popular for their unsurpassed reliability, performance, usability and versatility. They produce a high-quality cut, finish and discharge spread, whether they're cutting fine turf or long grass, mulching plant matter, or topping cover crops.

Trimax Ezeemow

Trimax Warlord

Each Trimax mower is designed and tested to comply with international safety standards, giving you peace of mind as you operate. Revolutionary features such as SteadFAST sealed spindles, LocTEK roller bearing retention, automatic belt tensioning, and easy access panels make servicing and maintenance easier than ever. A wide variety of available options and cutting widths allow you to perfectly customise your mower for your exact application.

At Trimax, care for the customer is at the very core of our business. We believe that equipment should never be a barrier to success, and our goal is to understand your challenges so that we can work together to create solutions. We pride ourselves on having one of the best service models in the industry; with fully stocked parts warehouses, next-day order dispatch, an industry-leading warranty, and highly trained service staff, Trimax is ready to provide the advice and support you need when you need it.

The first 40 years of operation are truly just the beginning for Trimax. Inspired by our history, we're excited to share with you a growing range of mowing equipment to be released starting in 2021, expressly designed for horticulture. Our engineering research and development team has compiled the knowledge and insight we've gained from around the world, and we're gearing up to release our strongest, most versatile mowers yet.

Watch this space (and our website, **trimaxmowers.co.nz**) for innovative new offerings just for horticulture, coming soon from Trimax Mowing Systems!

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