

NZGROWER[®]

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HORTICULTURE NEW ZEALAND

RAIN FORCES RETHINK

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IN PUKEKOHE



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REBUILDING WITH RESILIENCE



Barry O'Neil : HortNZ president



As I write this, words are still failing me. The horrible pictures of utter devastation we are seeing through the media make me feel sick to my stomach.

To all the growers and their families who have been seriously affected, our thoughts, prayers and our wishes are with you.

While I am seeing pictures of utter devastation in the Esk Valley, Puketapu, Dartmoor, Pakowhai, Whirinaki, Taradale, I know other growing areas have also been badly affected, such as the wider Hawke's Bay, Waipukurau and Tairāwhiti Gisborne. It was a very cruel cyclone. Growers in some of our key areas are facing complete or near complete losses to their crops.

Looking farther afield, while maybe not facing the same levels of devastation, growers have been significantly affected in many regions including Coromandel, Pukekohe, Dargaville, right up to the Far North.

“
We need a serious conversation about a more strategic approach and taking action to build resilience

The first priority in such a huge event is people's safety. There are fantastic stories of growers helping to save people during the event, and then being part of the search and rescue efforts that followed, whether on their

ute, tractor, or even a helicopter. And while the tragic death toll continues to rise, it could have been much worse without the efforts of so many brave people who took it upon themselves to help others in need.

I want to thank the team at Horticulture New Zealand, who have also done a huge amount of work with the product groups to make sure horticulture workers are safe. And importantly, at the same time, we are facing the Government to get the support that is going to be needed to start the recovery.

I thank Government Ministers and officials at the Ministry for Primary Industries for getting first hand understanding of the situation, and for their engagement and support which we are seeing starting to happen. The Government's initial \$4 million fund, Enhanced Taskforce Green,



and then the \$25 million fund will all hopefully provide growers with some assistance they desperately need to start cleaning up the mess. But these contributions, while gratefully received by the industry, is we believe just the start. It will take significantly more Government support to recover from this – along with a positive approach from the banks involved.

“
There are fantastic stories of growers helping... whether on their ute, tractor, or even a helicopter

We recognise the fantastic efforts from growers outside of the affected regions – providing labour and machinery. The donations coming into the recovery funds, including support from the NZ Fruitgrowers' Charitable Trust, provide much needed help. It's one step at a time after this sort of event. It is really important to have a plan to focus our efforts and energy at a time when our

head and lives are spinning – for our own wellbeing and being able to cope, and importantly to get ourselves back into business.

While it may not be easy to see, we will get through this and horticulture will once again shine. It is not going to be easy or quick. We may need to stop growing in some locations, and some unfortunately may decide it is just too hard and leave the sector, but most of us will get there.

We have had adverse events before, plenty of them, and we will have them again. Rebuilding with more resilience is important, and especially with our core infrastructure. Roads, power, communications, internet are being fixed now, but we need a serious conversation about a more strategic approach and taking action to build resilience into these critical areas. And forestry practices must change!

Look after yourself, your whānau and your neighbours. Together we can and will get there.

Kia kaha. ●

NZGROWER

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GROWERS NEED COORDINATED SUPPORT



Nadine Tunley : HortNZ chief executive

When we look back in years to come, I am sure Cyclone Gabrielle will go down in history as one of the biggest weather events to affect the country – in particular the Hawke’s Bay, Gisborne and Northland – and the horticulture industry in those areas. The devastation to people, houses, land, businesses and infrastructure is immense.

It has been heartening to see how growers have come together to support each other – whether with equipment and labour during the clean-up or with advice and know-how. Growers deserve the nation’s thanks, not only for battling to maintain our food supply, but also for past flood prevention and soil management initiatives. The damage could have been even worse without these valuable projects.

Everyone wants to help, that is only natural. However, that help needs to be coordinated on the ground, with almost military precision, given the scale of the impact and the challenges the clean-up and recovery pose. The challenge is to coordinate this activity and maintain the support and momentum over the next several months. Please continue to make connections within your communities and reach out to Horticulture New Zealand and product groups.

In Hawke’s Bay – the area worst affected by Cyclone Gabrielle – New Zealand Apples and Pears Incorporated (NZAPI) is doing a superb job on the ground, supported by HortNZ and other product groups with growers in that area. There is a lot of product group and district association activity and support taking place in areas such as Gisborne, Northland, Pukekohe and the Bay of Plenty.

It is important that growers, and those helping them, look after themselves and the others around them. I know this might seem almost impossible, but it is vital for morale and stamina. For those looking for advice in this area, there’s the Rural Support Trust and Farmstrong. To those not directly affected, please make it a priority over the coming months to check on people’s wellbeing and offer help, but in the most coordinated way possible. Product groups and district associations will play a significant and ongoing role here.

Now that growers can get back on their land and have started the clean-up, they are being asked to quantify the impact on their operations. This data and information will inform future phases of the government’s response. As a result, it is important that it outlines as accurate a picture of total impact as possible. It will take time to collect and analyse the data.

HortNZ is working with product groups and the Ministry for Primary Industries to try and ensure that growers are only asked once to provide data and information as to short and long-term impact. This is a reflection of HortNZ’s industry-wide role as well as the government’s expectation that it talks to one representative body, particularly in times of crisis and recovery.

Recovery will take years – just like it has taken Christchurch more than a decade after the 2011 earthquakes. Even then, it will not necessarily be a return to how it was before the cyclone struck. Several fundamentals like food supply and security will need to be looked at. Some tough decisions will have to be made, and there will need to be vision, planning and coordination.

It seems a long time ago that I was in Tairāwhiti Gisborne on 1 February to launch the government and industry strategy Growing Together 2035 – Aotearoa Horticulture Action Plan. But I believe more strongly than ever that this is the ambition we need. We must work together efficiently to make significant and enduring change to ensure our long-term success. Our industry does have a bright future, however, there is much to be done. Let’s get on with it. ●

HORTICULTURE INDUSTRY RESPONDS TO NORTH ISLAND FLOODING AND CYCLONE GABRIELLE

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INDUSTRY WIDE ISSUES FOR INDUSTRY GOOD

NATURAL RESOURCES AND ENVIRONMENT

Michelle Sands : HortNZ strategy and policy manager

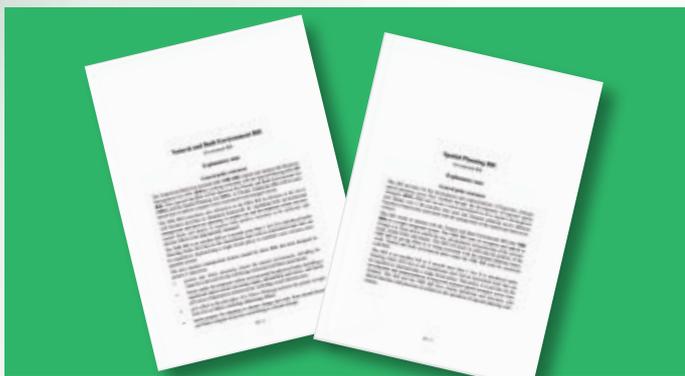
Submission on the Natural and Built Environment Act Bill and Spatial Planning Act Bill consultations

This month, Horticulture New Zealand submitted on the *Natural and Built Environment Bill* (NBB) and the *Spatial Planning Bill* (SPB), the first two of three acts that will replace the Resource Management Act (RMA). Our submission made clear that the reforms are being pushed through too quickly without enough time for public engagement. In terms of the details, the NBB sets out priorities for the National Planning Framework, a new document that will guide all planning decisions around the country. We asked that food be included as a "system outcome" and a matter that the National Planning Framework must address, which would carry down to all regional plans.

We also emphasised that the proposed 10-year maximum water consents are not nearly long enough. Instead, we argued that consent duration should be linked to how well an activity is meeting the Bill's outcomes, including climate change mitigation and adaptation. Horticulture is a low-emissions industry that protects the resilience of our national food supply, which we think should be rewarded with more resource certainty.

Submission on Local Government Reform consultation

HortNZ also submitted on the *Review into the Future for Local Government Draft Report*, which imagines what local government's responsibilities will be after their powers are changed by the RMA reform. The report contained a chapter about promoting wellbeing, so we focused our submission on why food production is essential for social, economic, cultural and environmental wellbeing in New Zealand. We challenged local government to invest in innovation hubs, like one currently being planned in the vegetable sector, that bring growers, university and private researchers, iwi and policymakers together to discover horticultural solutions for the future and train the next generation of food producers. We also called for flexible planning decisions that will allow for horticultural expansion across the rural-urban divide. If local governments are going to start coordinating with each other more, as the Draft Report suggests, a coordinated approach to food security would connect policy supporting growers to ensuring a healthy, well-fed population in the best interest of the nation at large.





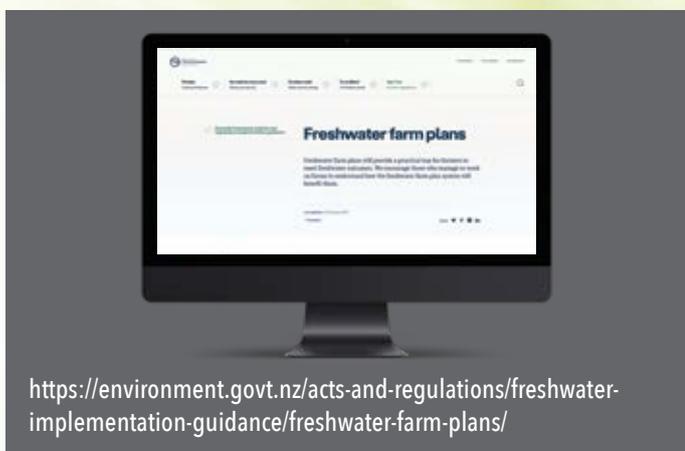
Submission on Government's Freshwater Farm Plan (Exposure Draft) Regulations

In early February, the government confidentially released an exposure draft of the *Freshwater Farm Plan Regulations* to select individuals and organisations, including Horticulture New Zealand.

HortNZ prepared a submission on the exposure draft. A key submission point was the inadequate public consultation on the exposure draft, and the primary legislation that supports it in Part 9A of the Resource Management Amendment Act 2020.

The confidential nature of the consultation limited the ability of HortNZ to consult with its members. In addition, Part 9A of the RMA was passed under urgency in 2020 without the benefit of public scrutiny through the select committee process. This limited the ability of people like growers, who will be most impacted by these regulations, to provide input and feedback.

HortNZ continues to seek a workable pathway in the regulations for industry assurance programmes, like GAP, to deliver audited and certified freshwater farm plans. And that audit and certification is consistent with the ISO (International Organisation for Standardisation) framework and international practice.



<https://environment.govt.nz/acts-and-regulations/freshwater-implementation-guidance/freshwater-farm-plans/>

Marlborough District Plan Mediation on Water Quality

Marlborough District Council notified the Proposed *Marlborough Environment Plan* for public consultation in June 2016. The 'decision' version was notified in February 2020. The decision was appealed, and HortNZ is participating in mediation.

HortNZ has been mediating on the water quality topic and has included advocating for the quality of irrigation water to support food production and for an approach that provides for cultivation with mitigation to manage soil loss.

Proposed Otago Regional Policy Statement Hearings

The *Otago Regional Policy Statement* sets the direction for future management of Otago's natural and physical resources. The Regional Policy Statement establishes the framework for Otago's regional and district plans.

HortNZ has been presenting planning and industry evidence at the hearings. One of the topics HortNZ has been promoting is the need for greater emphasis on the rural environment. ●



<https://www.orc.govt.nz/plans-policies-reports/regional-plans-and-policies/otago-regional-policy-statements>



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BOLD ACTION NEEDED TO ACHIEVE BIG OUTCOMES FOR INDUSTRY



Te Aitanga a Mahaki Trust member Whitiaua Ropitini welcomes guests to HortNZ's launch of the Aotearoa Horticulture Action Plan: Growing Together 2035



New Zealand has worked hard to build an excellent brand for quality, says Minister of Trade and Agriculture Damien O'Connor

If you want to be part of the success, you have to be part of the solution, is the word from the architects of a bold new strategy for the horticulture sector. Words and pictures by KRISTINE WALSH.

A plan to nearly double the value of horticulture production by 2035 has been years in the making, so few were fazed by having to wait a few more hours for its official launch.

As dignitaries, growers and industry and government affiliates gathered in Gisborne for the 1 February launch, news came that the Minister of Trade and Agriculture Hon Damien O'Connor and then Regional Development Minister (and MP for East Coast) Hon Kiritapu Allan were delayed by flight disruptions.

In response, the organisers brought forward a planned tour and juggled their programme of speakers.

The *Aotearoa Horticulture Action Plan: Growing Together 2035* itself lays the groundwork for an equally nimble approach to combat challenges in the sector, though one rooted in a deeply considered long-term strategic approach.

The plan builds on primary industry export success that has seen values rise by 39 percent since 2017 to a record \$53 billion last year, with horticulture contributing \$6.7 billion.

But while that contribution is expected to top \$7.1 billion in 2023, there are strengthening headwinds in issues from compliance and labour force costs to the increasingly devastating impacts of climate change.

Devised by the "quadruple helix" of industry, government, science and Māori, the plan builds on the vision that Aotearoa New Zealand is "synonymous with world-leading healthy produce grown with care for people and place."

To succeed, the plan must tackle the nuts-and-bolts issues facing the sector.

But Horticulture New Zealand says it must also be rooted in social licence, with an understanding that growers are key to "feeding the future" from how produce is grown, picked, packed, transported and sold, to how the sector improves productivity, innovates, and grows its communities, people and market value.

That, says Horticulture New Zealand chief executive Nadine Tunley, was why it was decided to launch what is a national plan in the distinctly regional Tairāwhiti Gisborne.



HortNZ chief executive Nadine Tunley (left), Minister of Trade and Agriculture Damien O'Connor (centre), and the then Regional Development Minister (and MP for East Coast) Kiritapu Allan showcase HortNZ's new Aotearoa Horticulture Action Plan. It is hoped that, by 2035, the plan will have helped nearly double the value of New Zealand's horticultural production to \$12 billion

"Its key strengths are in what was brought to the table by that quadruple helix," Nadine said in opening the event.

"So to showcase those aims with any authenticity the strategy had to be launched here in te Tairāwhiti."

Action Plan governance group chair Andrew Gibbs described the strategy as a "monumental" effort on the part of many contributors, stimulated by exploring issues in a post-Covid-19 environment.

"What became clear was that those issues were not going to go away and we needed a long-term strategy to address them together," he told those gathered for the launch.

"Now that we have it, my challenge to you is to work on what we can do to implement it."

In general, the plan presents a number of actions to achieve five main outcomes:

-  To grow sustainably
-  To optimise value
-  To foster Māori strength in horticulture
-  To ensure action is underpinned by science and knowledge
-  To nurture people.



2023 Horticulture New Zealand Director Elections

Calling for Nominations for three Directors

The Horticulture New Zealand constitution provides for a term of three years for elected directors with one third of directors retiring by rotation each year. The following Directors retire by rotation this year.

Kate Truffitt is not offering herself for re-election due to changes in employment.

Tony Howey is retiring having completed 9 years on the board so is unable to re-stand under HortNZ rules.

Hugh Ritchie is retiring by rotation and is offering himself for re-election.

There will be three vacancies to fill.

In accordance with Clause 12 (e) of the Horticulture New Zealand Constitution nominations are now being sought from individual grower members, affiliated Product Groups and affiliated Grower Associations.

Candidates must be nominated by at least two grower members or affiliated organisations.

The election is based on electing the best people for the job with no allocated seats for product, sector or regional representatives.

Candidate criteria

Nominated candidates must be:

- a person who is an active grower member of HortNZ; or
- a director, shareholder, partner or trustee of an active grower member who is appointed by that member as the principal representative of the entity in their dealings with HortNZ; or
- an employee of an active grower member who is appointed by that member as the principal representative of the entity in their dealings with HortNZ.

If more than three (3) candidates are nominated, an election will be held where individual grower members will vote for their preferred candidates. A profile for each candidate will be included with the voting papers distributed to growers.

The nomination form and position description is available on HortNZ's website www.hortnz.co.nz or can be requested from the Board Secretary via email admin@hortnz.co.nz or by phone 0508 467 869.

**Nominations close at 5.00pm
on Friday 14 April 2023**



Nadine says the actions will work together to grow the overall sustainability and value of Aotearoa New Zealand's horticulture sector.

"They range from identifying energy-intensive areas of the horticulture value chain and supporting conversion to systems that reduce greenhouse gas emissions, to improving crop management and protection, developing pathways to increase Māori participation, increasing capability, and better understanding consumer needs and channels to market."

“To succeed, the plan must tackle the nuts-and-bolts issues facing the sector

Going into 2023, HortNZ's dedicated programme manager will drive the Action Plan forward by finding opportunities within existing frameworks, and bringing together partners to develop new projects.

"We are all vested in the success of the plan and while it will bring challenges, those are challenges we are committed to working through," Damien O'Connor said at last month's launch.

"New Zealand has worked hard to build an excellent brand for quality, and consumers here and around the world continue to demand high quality and nutritious fresh fruit and vegetables to boost their wellbeing.

"By accelerating growth and sustainability in our horticulture sector we can support businesses to grow, create new jobs, lift exports and provide greater domestic food supply."

While the sector is rich in proud, committed growers working in an innovative industry, we cannot rest on our laurels, Nadine said.

"As well as climate change being well and truly here, consumers are invested more than ever in their food, from farm to plate.

"It is unlikely our industry's operating environment is going to change, so to work within that, it is critical that we have a plan."

New Zealand has worked hard to build an excellent brand for quality and is fortunate to have one of the best climates and some of the most fertile soil in the world, Damien added.

"The new Horticulture Action Plan sets bold actions and outcomes to maximise value, boost sustainability, increase Māori participation in high-value horticulture, and attract and retain the right people.

"We have the plan, we have the ambition, and we have the support and expertise to ensure the long-term success of our growers, rural communities and New Zealand's economy." ●

GROWING TOGETHER 2035

- The *Aotearoa Horticulture Action Plan* (AHAP) sets up a framework for collaboration across industry, Māori, research providers and government to ensure alignment, leverage activity, and achieve progress through a series of actions for sustainable growth.
- The scope of the plan is "food for people", covering fresh and processed fruit, vegetables and nuts across the whole supply chain, and both domestic and export markets.
- The plan has three aligned elements: strategy, annual implementation plan and investment roadmap.
- The aim is to double the farm gate value of horticulture production from \$6 billion to \$12 billion by 2035, in a way that improves prosperity while protecting the environment.
- A new governance group will oversee the operation of the plan with a representative from each of the four partners (industry, Māori, research providers and government), along with an independent chair.
- A dedicated programme manager will drive the plan forward by finding opportunities within existing frameworks, and bringing together partners to develop new projects.

Outcomes



Grow sustainably: Horticulture is in balance with the environment and lessens climate change



Optimise value: Domestic and export market and consumer needs are understood, and the value chain optimised for demand



Māori are strong in horticulture: Partner with Māori to triple participation in high-value* horticulture



Underpinned by science and knowledge: A strong research and development programme and consideration of Mātauranga Māori enables, accelerates and supports horticulture



Nurture people: Horticulture attracts and retains people, and annual and seasonal workforce needs are met

*Value is defined as high monetary return to growers and/or societal value, e.g. domestic food supply.

CLIMATE, COSTS AND LABOUR TOP LIST OF CONCERNS

When it comes to making lemons into lemonade, who better than a bunch of Kiwi growers?

With time on their hands at the AHAP launch due to the late arrival of Ministers Damien O'Connor and Kiritapu Allan, industry leader Liz Te Amo urged those gathered to voice concerns about issues facing the sector today. So they did.

There were a number of reoccurring themes, from the need to urgently deal with the fall-out from climate change, to the challenges of rising costs across the industry.

For Plant & Food Research senior scientist Bruce Searle, sustainable growing practices are needed to meet the growing climate challenges head-on.

The issue of labour, too, was brought up time and time again, with challenges in both the cost of running a workforce and the difficulty of attracting young people to the industry.

Also raised was:

- The need to ensure regulatory tools (like NZGAP and Freshwater Farm Plans) are properly aligned.
- The challenges faced by smaller growers in an increasingly regulated environment.
- The importance of support for process growers who face competition from international producers who can "import product for less than we can produce it for."

LeaderBrand founder (and now board member) Murray McPhail said it is critical that, when launching initiatives like the Action Plan, thought be given to any unintended consequences.



As part of a floor discussion, LeaderBrand founder (now board member) Murray McPhail was passionate about the need to address rising costs, as if consumers were priced out of buying fresh produce, there would be an over-reaching impact on society

And he was passionate about the need to address rising costs as, if consumers are priced out of buying fresh produce, there will be an over-reaching impact on society.

"How do we get people to support the industry, both as consumers and as members of the workforce?" Murray McPhail asked.

"We need more commitment to getting the health message out there so consumers are fully on board."

But the news from the floor wasn't all bad.

Farming general manager Gordon McPhail - also of LeaderBrand - said he was excited for the future of sustainable horticulture, and believes harnessing technology is critical to its success.

And HortNZ engagement and extension manager Kate Longman said work to address some concerns is underway.

"We have invested in learning what is needed, now it is time to take what we have learned and apply it across the sector," she said.

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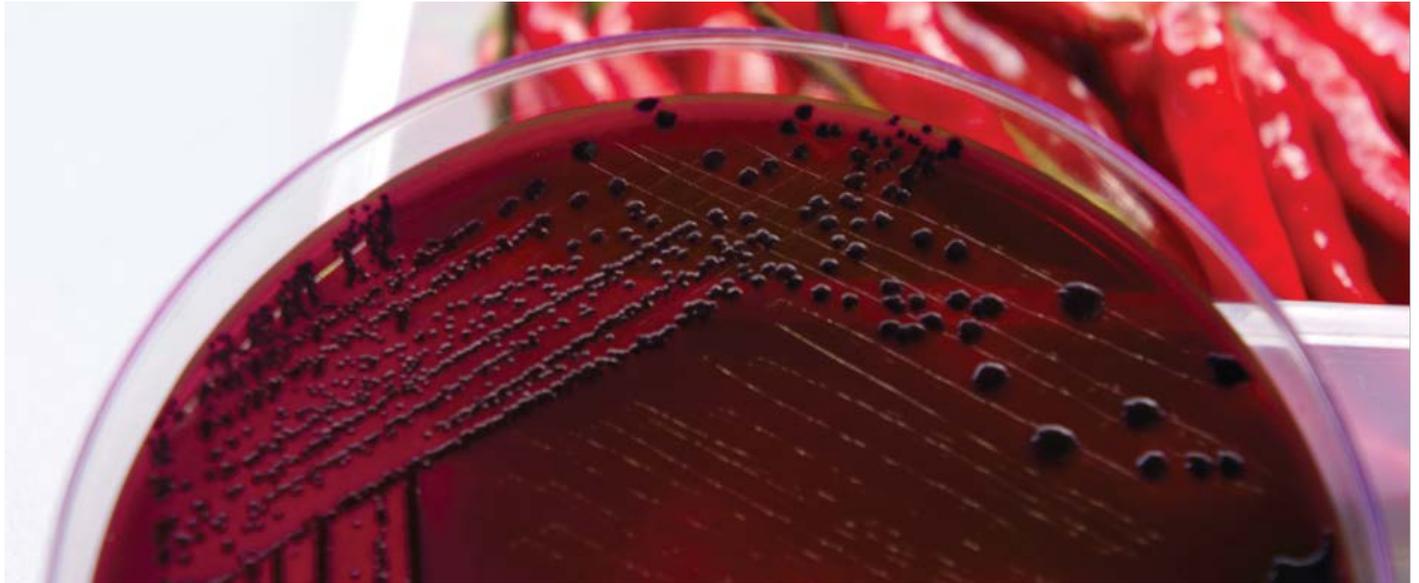
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FOOD SAFETY DURING FLOODING EVENTS

Gabi Hidvegi : HortNZ risk policy advisor



On 27 January 2023, Auckland experienced severe flash flooding and unprecedented rain – one month's worth of the city's rainfall in one day.

The upper North Island has continued to be in the firing line of climatic extremes with Cyclone Gabrielle causing further downpours and flooding, gale force winds and the declaration of a National State of Emergency.

While personal safety is paramount, understanding and managing the food safety risks associated with flood-affected fresh produce is also critical.

If your property has been affected by flood water, it is important to undertake a risk assessment taking into consideration things such as:

- whether the edible portion of the crop has been in contact with flood water or flood water 'splash'
- how any flood-affected crop can be identified
- how you plan to manage those food safety risks.

Flood waters may have:

- Microbial contamination caused by sewerage or septic tanks, animal waste, dead animals and decaying vegetative waste.
- Chemical contamination from petroleum products, mechanical equipment, historic dumpsites, pesticides, and other agricultural chemicals. Potential sources of chemical contamination will vary greatly depending on the severity of the flood and the proximity to other operations.
- Physical contamination with debris.

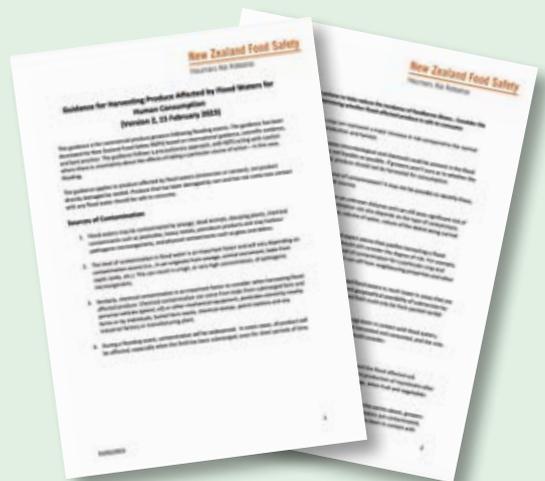
Undertaking a risk assessment:

New Zealand Food Safety (NZFS) have recently updated their guidance for harvesting produce affected by flood waters. The guidance outlines factors to consider when determining whether flood-affected produce is safe to harvest.



Download the guidance here:

<https://www.hortnz.co.nz/flood-support/food-safety-for-flood-affected-produce/>



It is critical we maintain focus on managing food safety after flooding, as access to safe and nutritious food is key to sustaining life and promoting good health. ●

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24 BOLD AND ADAPTABLE





FRESH GRADUATES NEEDED FOR NEW ZEALAND'S PRIMARY INDUSTRIES

Elaine Fisher



The 2020 winner of the APHANZ scholarship was Alexandra Tomkins

More university graduates with sound scientific and practical understanding of agriculture and horticulture are desperately needed in all industry sectors, including government ministries, says Mark Ross, chief executive of Animal and Plant Health NZ (APHANZ).

"Schools, industry, parents and universities need to encourage more people into these fields of study to ensure that New Zealand can continue to feed the world and support our economy."

Mark is concerned that many of those in government departments making decisions which seriously affect farming and growing, have no practical knowledge or understanding of the industries.

"On one pre-Covid lockdown field trip, many of the regulators from government ministries were excited to see and touch lambs - they had never been on a farm before."

Lack of graduates has meant ministries have often employed immigrants to fill roles, and while they may have the academic qualifications required, they have little understanding of New Zealand farming and agriculture.

"We need to get science back in the room. Currently pseudo-scientists are getting airtime and driving the public debate. Real scientists are not getting platforms and our industry faces an automatic perception of bias."

One way of meeting those challenges is to encourage more young, bright, passionate all-round high achievers into agriculture and horticulture. Those are just the people who have won APHANZ (formerly Agcarm) scholarships in the past.



I'm passionate about the New Zealand primary industries and putting our high quality and nutritious products on the world stage

The 2022 winner was Sarah Wilson of Te Puke who is studying agribusiness at Massey University.

"It is important that consumers understand the value of agrichemicals and the effort that the industry goes to in order to keep consumers safe. Each product has been thoroughly researched and industry bodies are always looking at how they can use agrichemicals more efficiently."



Mark Ross is chief executive of Animal and Plant Health NZ (APHANZ)

Their value spans far beyond the orchard gate. "If we cannot get our products to market due to pest and disease incursions, we have the potential for economic collapse," says Sarah.

For 2020 scholarship winner, Alexandra Tomkins, the journey of New Zealand's high quality nutritious food from farmer to fork was the impetus in her drive to become a leader in food production.

"I'm passionate about the New Zealand primary industries and putting our high quality and nutritious products on the world stage," says Alexandra who was studying for a Bachelor of AgriCommerce at Massey University when she won the scholarship.

"I'm particularly interested in supply chain management and logistics; getting a product from the farm gate to final consumers around the world."

However, Mark says while scholarships are more important than ever to convince more people to study horticulture, some of the larger funding bodies such as DairyNZ and Beef + Lamb have stepped back from scholarships, just when help is badly needed with attracting students into these programmes.

A decrease in the number of students studying agriculture and horticulture raises a sense of unease for the future, especially given the trajectory of the primary industries.

"Now, more than ever, we need progressive, smart and educated individuals to help innovate and drive change for growers and farmers - to enable them to survive in

a changing climate, during a time of increasing political interference and escalating consumer demands."

"New Zealand is touted as the food basket of the world, but with intense regulation from governments - both here and overseas - people are needed to seek solutions to meet these demands and drive productivity in farming.

"With pressures to slash emissions, be productive and support the economy, New Zealand farming is in a vice. It must find solutions to producing more with less - using fewer resources, emitting less, and on less available land. Managing these pressures requires innovative thinking and ideas."

Farming industries are crying out for Bachelor of Agricultural Science students to keep abreast and help manage the myriad of issues the sector faces. High demand also exists for horticultural graduates to keep pace with the booming horticultural industry.

"Tragically, New Zealand universities have experienced a downturn in student numbers in recent years, resulting in too few agricultural and horticultural graduates to meet industry demands."

Mark is at a loss to see how the problem can be addressed, but suggests selectively targeting promising students at colleges and offering opportunities to investigate the varied careers the primary industries offer, may be one option.

Associate Professor in Weed Science at Massey University, Dr Kerry Harrington, suggests some causal factors for this

downward trend. "The Covid restrictions created difficulties for secondary school students. New Zealand is also in a period of low unemployment combined with a high cost of living, so the temptation for people to be lured into earning an income versus studying and accumulating debt could be a contributing factor.

"Despite there being no fees in the first year of study, the cost of university education is a major turn-off for many. Student allowances have barely increased in many years. Universities have had few funding increases which, in turn, affects future fee structures for students.

"Another thorn in the side of agriculture is the negative publicity that the industry endures, especially around issues such as methane emissions and leaching of nutrients into waterways. Schools can also put students off studying agriculture, for similar reasons. But perhaps what they're missing is the pathway to solutions. Trained professionals are needed more than ever to help farmers modify their practices to ensure the continued sustainability of agriculture."

Studying agriculture or horticulture at university doesn't require a string of prerequisites. Secondary students interested in either degree must only have studied some sciences at secondary school. It's not obligatory to have studied agriculture or horticulture.

Studying from home is one way of tackling the increasing costs of tertiary education, as it can make it easier for students to work and keep costs down. This is becoming increasingly popular, says Kerry. Massey University and other universities have developed expertise in distance education over the last couple of years. The pitfall is that students miss social interactions, one of the highlights of university life.



Passionate all-round achievers like Sarah Wilson, winner of the 2022 APHANZ scholarship, are people the industry needs

Formerly called Agcarm, Animal and Plant Health NZ (APHANZ) represents the New Zealand animal health and crop protection industries as well as rural retailers. The industry association promotes the benefits of safe, effective, quality products and services for the health of animals (including pet care) and crops. Its members are committed to the responsible use of products from research to disposal. ●

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'EVERY DAY FEELS LIKE A YEAR'



On 13 February a NZ Police car on Waingake Road patrolled the rapidly rising Te Arai River near Manūtūkē

While some growers lost their land, their crops and their homes, others remained untouched. As KRISTINE WALSH discovers, Cyclone Gabrielle was selective in the damage it did as it swept across the Tairāwhiti Gisborne region.

Just 10 kilometres south of Gisborne city is the bridge that spans the famous Te Arai River, generally regarded as liquid gold for the Manūtūkē growers that operate along its banks.

That was until the early hours of Tuesday 14 February – Valentine’s Day – when it became a poisoned chalice, swelling to a raging torrent, tossing trees like Pick-Up Sticks and cloaking orchards in a sea of silt.

At the start of the riverside Waingake Road at Manūtūkē, plantings of avocado trees sit knee-deep in suffocating silt. A citrus orchard a little further up the line suffered the same fate, while the small township escaped unscathed.

Further still, the river swept across an annual growing operation, inundating the sheds and a car left by the fleeing owner, but somehow, leaving the house untouched.

Back on the main road, Matt Sowerby could hardly believe his luck when he got up early Tuesday morning and saw just a few puddles in his front yard.

As nursery and harvest manager for major local grower Judco, he headed out to inspect damage at blocks he oversees all over the district.

“

We’ve certainly got a lot to work through, so we’re going at it day by day

But when driving back past just after 9am, he could see water rising in the back paddock. With the river still raging, there was nowhere else for the stream bordering Matt’s property to go.

A father of five, including eight-month-old twins, he knew he had to move fast to get his wife and children out, while police busted down the front fence to release distressed cattle.



When nursery and harvest manager Matt Sowerby bought his home, near Manutūkē, it had long before been cranked up high to protect it from the flooding that occurred in Cyclone Bola (1988). But just two years later, and with renovations complete, ex-tropical Cyclone Gabrielle showed even that wasn't enough

He was the last to leave, kayaking across the front yard to rescue the beloved family dog.

And the same was happening next door at Judco's nursery and office headquarters.

"The problem was that, the river being what it was, the water couldn't drain so it just sat there for more than 36 hours," Matt says.

"When it finally did drain, we ended up with a metre-and-a-half of silt up to and into the house, which we'd just finished renovating.

"The house was jacked up high after Cyclone Bola to stop this happening, but in this huge event, it just wasn't enough."

While there are growers up the East Coast north of Gisborne, the area is dominated by forestry and sheep and beef farming and was already reeling from multiple events before Cyclone Gabrielle, most recently January's ex-tropical Cyclone Hale.

To say the area was devastated by Gabrielle would be an

understatement. But after previous events an enraged community had already mobilised in getting high-level support to confront the forestry debris that had been tearing down their hills, smashing up their homes, roads and bridges.

“The house was jacked up high after Cyclone Bola to stop this happening, but in this huge event, it just wasn't enough

Inland from Gisborne city, both north (towards the Bay of Plenty) and south (towards Wairoa), is home to the largest concentration of the region's horticulture, and even there effects vary from no impact to total catastrophe.

And halfway between Gisborne and Mātāwai, where the entire community of Te Karaka was evacuated, there was heartbreaking loss of life.



Twelve hours after Cyclone Gabrielle made landfall, it was water rising in the back paddock that made Matt Sowerby realise his home was not going to escape the weather unscathed

Up to 10 days after Gabrielle began its assault on 13 February the Tairāwhiti Gisborne region was still in a state of "extreme" alert water shortage, with pipelines to the main supply (the Mangapoike Dams) smashed and major faults at the back-up Waipaoa Water Treatment Plant.

And even as it moved towards the lesser "high" alert it was unlikely major processors would be allowed to tap into mains water supplies.

“

There will be ongoing challenges with getting packaging supplies in and getting fruit out

That had a big impact on operators like LeaderBrand which, according to chief executive Richard Burke, was doing well in the face of a range of challenges.

"This first week every day feels like a year, but we've managed to stand up to a whole lot of stuff," he said.

"Having power and being able to get comms on was helpful, but having no water is a big issue that's going to impact on the processing side of the operation."

Richard says the Waipaoa Flood Control Scheme - whereby stopbanks are being raised along the river banks - had helped protect a large portion of the Poverty Bay Flats,

where LeaderBrand's Gisborne growing operation is centred.

"So by day four (17 February) we were able to start harvesting things like fresh lettuce and sweetcorn on blocks that weren't flooded, and by Sunday we were harvesting some of the sauvignon blanc in our vineyards.

"Basically, it's a moving target so we're just piecing things together as we go, focusing in the short term on what has been wiped out, what can be salvaged, and where to go from here."

LeaderBrand had built resilience in its business by establishing farms in other regions, Richard added.

"But we've certainly got a lot to work through, so we're going at it day by day."

Up the road at Kaiaponi Farms, general manager Scott Wilson was juggling the company's own orchards, those it manages for other growers, its major packing facility, and the challenges of shipping produce from an area cut off in both directions.

He, too, believed the stopbanks had done their job and protected many growing operations, "so we mostly had to deal with what fell on top of us".

For Kaiaponi's orchards, that was recorded at around 220ml of rain, with most getting through with low levels of loss.

"But we do have growers at the other extreme, mostly in pockets like Waingake and Manutūkē.



Although communications were down, some farmers were able to tap into the Starlink connection at Gisborne District Council's offices

"And of course, many of our staff have issues as well. Many were flooded, some not too much, others right up to having their homes red-stickered."

But those who could be on board were on board, and Scott says his team returned to harvesting apples from selected blocks just two days after the storm.

"Being in the middle of the Gala harvest we couldn't risk those fruit getting over-mature, so we were able to get through and complete most of that and get the packhouse up and running by day seven.

"But with that have come some major logistical challenges, including around getting fruit to market."

Kaiaponi traditionally freights its apples through Napier Port, but with access cut off is instead sending trucks north to Tauranga.

"There will be ongoing challenges with getting packaging supplies in and getting fruit out, and that's going to have an inevitable impact on costs," Scott said.

Overall, there have been bad things: especially in evacuated rural areas, looters came out to play (one pair reportedly earning a "good hiding" from an alert property owner).

And there have been good things: entire teams of gumboot-clad volunteers turning up to help complete strangers dig out tonnes, and tonnes, and tonnes of silt.

But the general feeling is one of gratitude, especially in the light of devastation wreaked on the neighbouring Hawke's Bay region.

Those flooded with water are grateful it's not mud. Those with mud are grateful their houses were spared. Those who lost their homes are grateful loved ones escaped with their lives.



No power, no internet, no phones, no eftpos, no bread, no milk. Gisborne's first week after Cyclone Gabrielle was a rough one

As Scott Wilson said, "even with what we have to deal with here, we look over at places like Hawke's Bay and it makes us feel fortunate."

"Our thoughts are with those severely affected growers, those severely affected people, and what they have to deal with now and into the future."

Meanwhile, a week after Gabrielle blew through town, Matt Sowerby continued with what work he could, even though his own property was munted and he'd crammed his whānau of seven in with an equal number of family members up the road.

"Like many around here, we (Judco) have been both lucky and unlucky," he says.

"On the one hand, we've lost crops, including maize, tomatoes and a paddock of echinacea we were growing for seed export.

"On the other, though the nursery houses were a metre deep in water, they'd been cleared out for new seedlings - which we've been able to get in - so like everybody else we're moving forward as best we can." ●



NINE TONNES OF CABBAGE FERMENT INTO A GREAT IDEA

Geoff Lewis

Photographs : Trefor Ward



Daniel Verry packing Citrus Twist Sauerkraut into jars



Daniel and Marea Verry in front of their horseradish plants which will be used in some of their products

"It's all about cabbages," says Marea Verry.

Marea is half of the couple that runs GoodBugs Fermented Foods in Hamilton. The other half is husband Daniel who recently left a good job with Fonterra to immerse himself fully in the family business.

GoodBugs' backstory begins with Marea who was a volunteer leader for the Weston A. Price Foundation. The aim of the foundation is to provide information on nutrition and health, and scientifically validate traditional foods.

Social contacts made through this group led to an association with local farmers' market vendors Backyard Jem and the idea to make fermented foods. Later they also started working cooperatively with Earth Stewards – a Hamilton organic farm now surrounded by suburbia.

About five years ago the business moved to their suburban section, where the family garage was converted

for production. A Covid-19 business loan more recently helped to install another coolstore, doubling the company's refrigeration capacity.

“

We are super lucky to have good relationships with our growers

“We started with fermenting pesto, but our mainstay is different flavours of sauerkraut fermented cabbage and kimchi spicy fermented vegetables.”

GoodBugs now makes ten flavours of sauerkraut and three flavours of kimchi, the national dish of Korea, a fermented Italian veggies option, and two fermented pesto.

Making sauerkraut is simple, it's just chopped cabbage and salt. It doesn't require any additional water, as the

fermentation process provides all the necessary fluid and the pH (acidity/alkalinity) level effectively sterilises the product.

Today Goodbugs fields 16 products. Creating the different recipes has involved finding tasty ingredients and a good deal of local networking. The couple has spent the past five years developing a range of probiotic foods with seductive names like 'Ginger Ninja', 'Beeter Be Good' hot vegan 'Kiss me Kimchi' and 'Zesta Fermented Pesto'.

“We’re really not interested in supermarkets, they’d just undercut us

Honey sourced from Raglan-based Hunt and Gather Bee Co flavours 'Sweet As' honey-mustard sauerkraut. Horseradish from their own garden puts the teeth in 'Horse Bites'.

They also make a range of juices, which come from the by-products of the sauerkraut process.

Foremost among local suppliers is Tony Cato who runs Pirongia Mountain Vegetables and provides the basic product - 500 kilograms of spray-free cabbages every three weeks - a total of around 9000kg a year. On top of that they process 100kg of organic basil, spinach and kale a year, which comes from Tomtit Farm at Matangi, and other organic vegetables from Suncakes Gardens near Whatawhata.

“We are super lucky to have good relationships with our growers and especially with Tony. The fact that he is spray-free is important to us,” Marea says.

“Because we are small-scale, we can make new recipes in small batches. It gives us the opportunity to be a bit experimental. We spend a lot of time trialling new flavours, and when we are in the markets people always want to know what’s new.”

GoodBugs products go out through the Farmers’ Markets in Hamilton, Cambridge, Tauranga, Grey Lynn and more recently a new site at Kaipaki, also near Hamilton. They pile their products and four children into a 9-metre Fiat Ducato mobile home and tour the markets over the weekends.

“Apart from Fresh Choice and Bin Inn in Te Awamutu we’re really not interested in supermarkets, they’d just undercut us.”

Marea says GoodBugs has the capacity to double production within the confines of their existing facilities and is keen to boost their Subscription Box offering to rural deliveries. GoodBugs gets its glassware from China, as no New Zealand company made the necessary containers, and it is currently going through a rebranding, which will mean outsourcing label printing which is currently done in-house. ●

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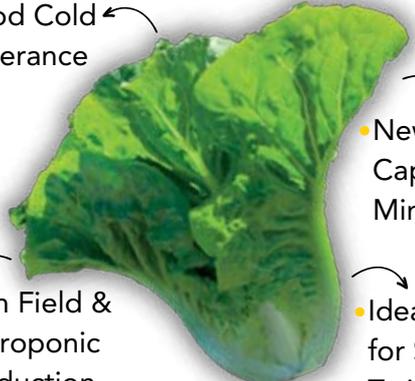
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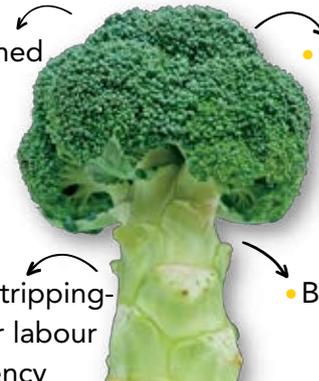
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BOLD AND ADAPTABLE: SMALL GROWER KEEPS GOING WITH HELP FROM INDUSTRY CHARACTERS

Geoff Lewis

Photograph : Trefor Ward



Michelle and Edward Lee of Lee Wang Hothouse, with his parents who joined them from Taiwan to help grow the business

Edward (Yujen) Lee and his wife Michelle (Yuting) run Lee Wang Hothouse Ltd in Pukekohe, and can put new meaning into 'learning from the ground up'.

Edward arrived in New Zealand from Taiwan as a student in 1996. There, he worked in the grocery trade and in service work. His parents, Pao-Chu Lee Wang (mum) and dad, Wen Chao, came from six to seven generations of outdoor vegetable growers.

"My parents and wife encouraged me to step out, my English was not good, it was another world. Our business started in 2009 right after the Global Financial Crisis. I became a resident. My parents decided to come, bring their skills and grow roots in New Zealand society. We purchased a two-hectare property with two older-style plastic tunnel houses. The previous owner had grown tomatoes.

"We continued growing loose-run tomatoes and learned from our mistakes. We even had to learn where to deliver the tomatoes. My parents' experience was very important as I had never worked with tomatoes. But their experience was growing outdoors. Indoors is very different."

Edward joined Tomatoes NZ and luckily came across some of its 'characters' including Anthony Tringham from The Curious Croppers. He also met NZ Hothouse Ltd managing director Simon Watson - by coincidence in a coffee shop - who helped Edward and Michelle develop planting and marketing programmes.

Nowadays the production from Lee Wang Hothouse goes out through NZ Hothouse and Progressive Enterprises supermarkets.

"We grew tomatoes for 14 years. It was always a struggle to make a profit. The critical moment came when prices for tomatoes plunged from \$135 per crate to \$10-\$15 per crate.

"It almost gave me a heart attack, but crisis drives opportunity. The cost of labour was too high. We had to learn to grow for the market."

This prompted a decision to invest in a new 1700 sqm glasshouse and a move to growing cucumbers as the primary crop. Annual production of cucumbers is now more than 18,000 crates.

“
I really want to do something in New Zealand, we don't want to leave. We want to provide hope for the younger generation

While returns from Lee Wang Hothouse have increased slightly, overheads have increased massively, and they face the same struggles as many growers both indoor and outdoor - the labour shortage, the cost of gas for heating which has soared from \$7 to \$12 per gigajoule. Rockwool growing substrate has almost tripled in price. World events have resulted in huge increases in shipping costs and pushed the cost of fertiliser up from \$50 to \$100 a bag.

Lee Wang Hothouse has employed good management, good marketing and new technology in an attempt to reduce operating costs and increase production, Edward says.

It would help if the government could see from the point of view of small growers, and focus on industry, he adds.

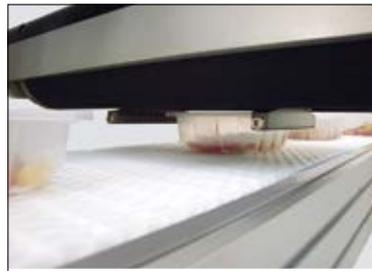
"If big growers are forced to import, that hits the smaller growers. I really want to do something in New Zealand, we don't want to leave. We want to provide hope for the younger generation."

Peak production runs from September to the end of April, and Lee Wang Hothouse employs three full-time staff who work alongside Edward, Michelle and his parents.

Stefan Vogrinic of Grower2Grower helps Lee Wang Hothouse as a technical advisor. He is a co-opted member on the Tomatoes NZ board, a former tomato grower, and has worked with Edward for more than ten years.

"Edward layers his crops similar to a long crop of tomatoes. This makes it much easier to grow and control the crop rather than the traditional 'umbrella' system. A further advantage is that harvesting is done from the ground up, which reduces picking time. He also treats his staff well and gets quality work, which is to his advantage.

"I think Edward, as a small business owner, has shown great adaptability and demonstrated a bold approach by converting old greenhouses and building a new greenhouse," Stefan says. ●



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GREAT SOIL, BUT WAIPĀ FLOODS FORCE RETHINK

Geoff Lewis

Photographs : Trefor Ward



The Waipā river overflowing its banks and flooding cornfields

Pirongia vegetable grower Tony Cato is looking for a new piece of land.

After January's Big Wet and his seventh flood in the past 18 months, he's had about enough of water.

Tony runs Pirongia Mountain Vegetables, a family-based small-grower enterprise which supplies the Farmers' Markets at Tauranga, Cambridge and Hamilton.

He leases 16 hectares of ground up from the Waipā River. You couldn't ask for better soil. Its deep rich loam is rocket fuel for anything with roots and leaves.

But the Waipā is a fickle creature, and to be honest, Tony admits, some older locals had looked a bit sideways at him when he started growing there.

On 1 February, after days of rain, the Waipā was in flood. Again. Hedgerows appeared like islands. The harvesting equipment was marooned. The late potato crop was boat access and ranks of broccoli march into a lake.

Some cheeky locals had even turned up with jetskis to take advantage of a de facto recreation opportunity offered over what used to be gardens.

Over several years and previous floods he had marked out 'high tide' marks - furrows in the soil that show how far he could plant down the slopes, but this year has sunk the newer one cut even further up the slope.

The bottoms had been used for hay, but the repeated inundations have destroyed the grass and reseeding is too expensive.

Late January was his first flood for 2023 after six such inundations last year. Tony has leased for a certain period, so that means finding something else to do with the land. But he also needs to move somewhere else.

"I pick the seedlings up from the grower every two weeks so I have to find somewhere else to put them."

Finding new land is not made any easier by recent changes to land-use rules.



Rising flood water threatens Tony Cato's broccoli field

"If I wanted to supply the big supermarkets I'd have to go through the resource consent and land-use changes."

Originally a motor mechanic with a background in the construction industry, Tony took the whole growing business over from his dad Richard about five years ago, and since then the business has been rebranded from Catos' Potatoes to Pirongia Mountain Vegetables.

“
If I wanted to supply the big supermarkets I'd have to go through the resource consent and land-use changes

Tony prides himself on a sparing use of chemicals. Weeds are kept to a minimum with a lot of tillage. Drawing on his mechanical aptitudes, Tony modified an existing machine to create a soil vibrator which loosens the weeds, aerates the soil and annoys the heck out of the bugs by turning their homes upside down.



Tony Cato packing dried garlic flowers and garlic bulbs

Tony says when it comes to vegetables, the big thing is flavour. That's what keeps bringing the buyers back - the chance to experience fresh produce with taste.

"To keep the flavour we need to keep the soil moving. In large-scale farming the soils often become depleted. As long as we can keep the veges growing and our vans full, we can't get enough product."

Of the 16ha about 4ha is in vegetables - yellow-fleshed Anuschka potatoes, broccoli, cauliflowers, cabbages, silverbeet, cos lettuce, garlic, kumara, pumpkins, sweet corn and a couple of varieties of Chinese cabbage.

In a recent innovation he's been supplying Hamilton-based fermented foods maker GoodBugs with 300 kilograms of spray-free cabbages a fortnight.

"It was a bit of foresight. An alternative market. We grow cabbages almost all-year-round but not so many over summer, but with the weather changing it's worth the risk. It doesn't matter what the cabbages look like, and it's a relationship that works well."

Meanwhile, the Farmers' Markets are doing well due to the growing public appetite for quality produce, and a more flexible production period compared to bigger growers, Tony says. ●



HAWKE'S BAY HORTICULTURE TAKES A MASSIVE HIT IN CYCLONE GABRIELLE

Bonnie Flaws



On 19 February, 5 days after Cyclone Gabrielle hit, the clean-up is well underway with support from the New Zealand Defence Force

At 8am the morning after the cyclone, when everything had gone quiet, Brydon Nisbet called his tenant in Puketapu to check on the state of his apple block.

He was expecting to hear that the high winds had blown all the apples off the trees during the night. Instead to his horror, his tenant, a single mother of three, was on the roof of the house as floodwaters were rising around her.

"She was up there for seven hours. Once it had come down they made their way over orchards to a house on a hill where they stayed until Thursday when they were helicoptered out," he said.

But the bad news didn't stop there.

Brydon is chair of the Hawke's Bay Fruitgrowers' Association (HBFA) and an apple grower. He has a few blocks around the region. One, in Puketitiri was totally fine, but the two in Puketapu had both been badly impacted.

"A little block opposite this one that goes right out to the stopbank [of the Tutaekuri River] is basically flat, completely annihilated. But this one can be salvaged."

While the apple trees are still standing, and have fruit on them, he now has to get the silt away from the trunks or they will suffocate and die. In a do-or-die operation he's brought in diggers in an attempt to save the trees. If he does manage to save them, he might be able to salvage 40 percent of the crop.

Speaking with his industry cap on, he says growers in the broader sector have had a range of experiences.

"There are lots of people still trying to make that decision about what they are going to do. Then there are ones where there's no hope, like my little block, and you just walk away and try to clean it up at a later date. Then there's blocks that just got flooded but didn't have river silt come through them. Just surface flooding. Those blocks have pumped water out so the ground can dry, but no issues with silt."



The flood waters in the Hawke's Bay area following Cyclone Gabrielle

While it's too soon to understand the full extent of the impact, Brydon says it is clear there is a percentage that has been badly affected.

"However, there is a significant portion of the sector that's still harvesting and it's business as usual," he's keen to point out. Many growers were completely unaffected and are busy picking and packing, as harvest is in full swing.

"We need those good news stories right now," he says.

Catherine Wedd, a former apple industry director, said the cyclone couldn't have come at a worse time – everyone was in mid-harvest. Not only have crops been lost but so have years of investment and infrastructure, technology and innovation.

"Some of the apple blocks wiped out were IP (Intellectual Property) varieties which have been bred specifically for the global markets to attract a premium. Other blocks have been set up for robotics, as the apple industry has been innovating significantly.

"There will be some big decisions over the coming months, on rebuilding and replanting crops. Our horticulture industry drives the Hawke's Bay economy and provides jobs for so many families. The industry will need significant support to rebuild," she says.

“There are lots of people still trying to make that decision about what they are going to do

Catherine, who is speaking to growers every day, says many are determined to get through. The industry is strong and resilient.

"It's important we continue to promote the New Zealand apple story to our international customers to ensure they maintain confidence in the industry here, as we produce the best apples in the world," she says.



HMNZS Te Mana crew help clear silt from an orchard in Havelock North on 19 February

Berry Farms NZ, part of RD8 Fresh Produce Group, had both of its farms hit by the floods. Its Hastings farm was hit harder by water, which ranged from knee-deep to shoulder height. Sheds and the owners' home was wrecked, says general manager Johnny Milmine.

“**There will be some big decisions over the coming months... The industry will need significant support to rebuild**

“The irrigation shed and all electrical pumps and systems were wrecked, which meant we could not irrigate. The silt water also blocked the drippers, which means our entire raspberry farm has been wiped out.”

Its other farm in Bay View was also affected and only about 50 percent was salvageable. To make matters worse, they can't start harvesting because they have no way to power the coolstore, and transport remains a problem.

“Guidance from MPI (the Ministry for Primary Industries) and retailers is coming through. At this time of the year we would be just starting our second harvest cycle, which would see over 120 pickers onsite. These people are now

either jobless or hopefully somewhere else. It will take a full year for us to be back to where we were prior to the storm,” Johnny said.

While Hawke's Bay is most well-known for its summerfruit, apples and pears, a lot of vegetables are grown in the Bay - tomatoes, sweet corn, peas, processed beans, leafy greens, onions, squash - mostly for export. The region is also home to vegetable growers and processors Wattie's and McCain Foods.

Agronomist Derek Ferguson has been conducting testing and assessments on behalf of his clients in the badly affected zone between the Ngaruroro River up to the Tutaekuri River, and also behind Awatoto on the waterfront down to Meeanee, about 6000 hectares at a rough calculation, he says.

“This area between Meeanee and Awatoto has a contaminant problem because of the leaking sewerage [from the damaged wastewater plant], the fertiliser works and the BioRich facility.”

This infrastructure was all completely underwater in the aftermath of Gabrielle. There will be a lot of testing going forward, he says.

There are different types of silt affecting different places, some of it sandy but a lot of it more composed of clay. Some of it would be able to be incorporated into topsoil so



Defence Force helicopters landing in Hawke's Bay to evacuate people and animals

growers could get a cover crop in and soil biology going again, even if it is very deep silt, he says.

"Those assessments need to be made paddock by paddock. Some have silt of various types and depths, and some have the top soil stripped depending on the location."

On the whole he says vegetable operations have been hit quite badly, and of course it has knocked growers pretty hard too. But they are quite pragmatic and focussed on what they can still make an income from, as well as any immediate work that needs doing, Dereck says.

A spokesperson for the Hawke's Bay Vegetable Growers' Association estimated that about 2000 hectares of vegetables and cropping has been entirely decimated.

The loss of direct income from that 2000ha, more than 50 percent of total production, is in excess of \$30 million. Sixty thousand tonnes of crop, of which 55,000 tonnes is edible vegetables, has been destroyed by Cyclone Gabrielle, they say.

A December 2022 update on the HBFA website written by Brydon Nisbet for growers, in what was already an incredibly wet summer, seems a fitting way to end this account of the impact of Cyclone Gabrielle:

"I recently picked up the book *100 Harvests: A History of Fruit Growing in the Hawke's Bay* which was written by Rose Mannering to celebrate HBFA's centenary in 1999. While thumbing through this book, I reflected on some of the immense challenges our industry has previously navigated. I found former HBFA president J H Milne's account of the 1936 season particularly poignant when he wrote "This year major calamities, including a destructive gale, a frost, and low export prices seem to be more than we can bear."

"For additional context, the pre-season export forecast for 1936 was for 200,000 cases - the quantity exported was 9,035 (less than 5 percent). The point is that our industry is resilient, we have overcome challenges before and by pulling together, we will overcome them again." ●



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RECOVERY FROM DEVASTATING FLOODS IS POSSIBLE

Elaine Fisher

Photographs : Paul Heywood



A digger operator used a spike to windrow debris in the 4ha orchard of Envy™ apples where most of the trees were flattened by flood water and silt

Growers can recover from severe floods if they clear silt as soon as possible after the inundation, says Riwaka grower Paul Heywood, of Heywood Orchards.

Paul knows this is true because he and his family brought blocks of their orchard back into production from the floods caused by Cyclone Gita in February 2018.

“However, what we experienced was nothing compared to the scale of the devastation Cyclone Gabrielle has caused in the Gisborne and Hawke’s Bay regions. I feel deeply for growers there, especially those who have lost everything. It is heart-wrenching.

“They need all the help and support they can get. Some may be able to recover from this, but I fear others may not. You only grow one apple crop a year and if you can’t harvest and sell it, that is devastating. It’s your only chance to make an income that year.”

In 2018, for two and a half hours, Riwaka experienced a localised cloud burst which brought torrential rain, causing the nearby Jordan Creek, which had become blocked, to send silt and debris cascading through kiwifruit and apple blocks on the Heywood orchard. The same storm caused severe damage to the Takaka Hill Highway – closing it for a week. It has taken four years to repair both the orchards and road to their original condition.

“

The important thing is to prioritise what is worth saving and spending money on

In one apple block, most trees were flattened but in another, trees were standing in deep silt. “We decided to walk away from the flattened orchard and concentrate on what we could recover,” says Paul.



A skilled bobcat operator cleared silt and debris into the centre of the laneways, opening access to the trees



These trees, buried deep in silt and debris, were saved by clearing away what the flood left behind



The scion on these trees began to root after being buried deep in silt and debris

"Established growers know that the only thing to do with an orchard full of silt is to bring in a good contractor and remove everything straight away. My brother Mike and I set to work to fix the flood damaged blocks, leaving our sons Evan and Scott and staff to harvest the apple and kiwifruit crops not affected.

We were fortunate that we had a very skilled bobcat operator who worked tirelessly to clear silt into the centre of the laneways, giving us access to the trees."

Fruit above the flood level was harvested where possible, and diggers were brought in to clear silt from around each tree. "The scion was starting to root and you don't want that as the rootstock controls the vigour of the trees, so we had to get back to original ground level as quickly as possible."

The silt also had to be carted away. Although it had come from hillsides covered in native bush, not production forestry, the flood waters washed down all the woody debris from the forest floor together with mud from multiple slips.

Once the 4ha orchard block had been saved, attention turned to the other 4ha block where most of the Envy™ apple trees had been flattened. The orchard was covered in flattened trees, poles, wire and the cloth that trees had been draped with.

“We had a very skilled bobcat operator who worked tirelessly to clear silt into the centre of the laneways, giving us access to the trees

"Initially we cut some of the wire, but soon found that was not the best thing to do. We brought in an experienced digger operator who used a spike to windrow the debris. When that was done, I spent days on a hired digger, using



Some of the estimated 7000 cubic metres of silt and debris which washed into a block of almost ready to harvest apples on the Heywood property in 2018



A skilled bobcat operator cleared silt and debris into the centre of the laneways, opening access to the trees



Debris from around the trees was removed using a digger



the wire to drag trees, posts and drupe into piles to be burnt. Undamaged posts were also salvaged."

The block was replanted, and this season will produce a commercial crop of apples.

The Heywood family also cleared the Jordan Creek, the cause of the flooding to their own and neighbouring properties. "The Tasman District Council had refused to clear the creek, which was overgrown with trees. We had planned to do it ourselves after the apple harvest. Hindsight is wonderful. If we had done it earlier, the flood wouldn't have been as bad."

That 2018 flood was just one of many adverse events, including hail, floods and fires, to impact the Heywood family orcharding business which had its beginnings in 1935. That was when Paul and Mike's parents Arthur and Lilius Heywood, purchased a small block of land to farm fruit and tobacco.

Paul and Mike continued their parents' tradition when they took over the business in the 1960s, managing the transition from tobacco to kiwifruit and apples. Now with their respective sons Evan and Scott also involved, the orchard business continues to expand.

The unpredictability of orcharding is something growers learn to live with, says Paul. "You never take the good seasons for granted because you know the next one may not be as favourable."

One way of coping with the stresses of an adverse event is to keep busy. "When our orchard was hit with a cyclonic hailstorm one March in the 1980s, we picked and packed granny smith apples to provide work for our staff, even though it made no economic sense to do so. We felt it was important to keep everyone busy."

“
The Tasman District Council had refused to clear the creek, which was overgrown with trees

That kind of resolve and resilience Paul believes, is thanks to the fortitude of his parents and grandparents, and is the same strength of character which he sees in intergenerational orcharding families, particularly in the Nelson region.



Once this 4ha block was finally cleared of flood damage, replanting began

"We have much to thank our forebears for, as they weathered tough times and taught us how to do the same."

It's also the fortitude growers in the Hawke's Bay, Gisborne, Pukekohe, Dargaville and Bay of Plenty regions, all impacted by Cyclone Gabrielle, will need.

"Damage to your orchard is terrible, but if you have

material damage insurance, recovery is a little easier. The important thing is to prioritise what is worth saving and spending money on.

"However, what is so much worse is losing your home and everything in it. I don't know how I would cope with that. My heart goes out to everyone who has lost their home in these floods." ●



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HORTICULTURE TRULY PART OF SANDY'S DNA



Elaine Fisher

Given that Sandy Scarrow has well known and talented horticulturalists in her family, it seemed almost destined she would make a career in the industry.

"My maternal uncle was James McPherson who did his apprenticeship at Kew Gardens in London and returned to New Zealand to become director of the Christchurch Botanic Gardens," says Sandy, who today is the managing director of Fruition Horticulture and a member of Women in Horticulture.

"It's James we have to thank for the mass planting of daffodils in Hagley Park. James also became a television gardener in 1966 with a weekly programme, Gardening Quarter."

Sandy's father Eion Scarrow presented the gardening show Dig This on New Zealand television from 1972 until 1986. While Sandy says she has been "in the horticultural industry since a baby in the bassinet under the propagating bench" the industry wasn't her initial choice when it came to tertiary studies.

"I started management studies, then went to Massey University to do a veterinary degree before I came to my senses and switched to a horticultural degree, which was much more appropriate for me.

"From the start I had a strong sense that I wanted a career in production rather than amenity horticulture. I wanted to grow healthy food for the world."

When Sandy graduated, New Zealand was in the grips of an economic crisis with high unemployment and government departments shedding staff. "It was a really tough labour market, but I was fortunate to be offered a role with MAF (Ministry of Agriculture and Fisheries) advisory services division in either Alexandra or Whakatāne. As it was close to home, I chose Whakatāne."

That decision also helped shape Sandy's future career path. The Eastern Bay of Plenty had a booming horticultural industry, which included asparagus growing and was emerging as a strong kiwifruit region with new plantings and post-harvest facilities being established.

"Kiwifruit was well established in the Bay of Plenty but people thought Ōpōtiki was a backwater for the industry and didn't initially realise the potential the area had for growing fantastic crops and incredible yields. We were all learning together, how to successfully grow kiwifruit."



Sandy Scarrow, managing director of Fruition Horticulture

Keen to immerse herself in the industry, Sandy made the move to Tauranga to become part of a dedicated team of horticultural consultants.

By then she was working for Agriculture NZ Ltd, owned by PGG Wrightson, which went on to sell its pastoral consultancy business to its staff. "The horticultural consultants had 'flown under the radar' and were not offered the same package. We wanted something similar and negotiated a management buy-out."

And so, Fruition Horticulture was born. While Sandy says it was a relatively easy way to begin a new business, it came with its headaches too. "Early on it was tough and my business partner Ruth Underwood and I often worried about paying staff wages, something we had not had to consider when working for a government department or large corporate like Wrightsons."

Fruition Horticulture Bay of Plenty, still owned by Sandy and Ruth, initially employed one other consultant and an office manager. Today the business has a full-time equivalent staff of 20 with, depending on demand, up to 40 more employed in part-time roles throughout the country.

"We have established long-term, and often very deep, relationships with growers and this is among the highlights for me of my career."

As well as hands-on consultancy advice, the business has made a name for itself as an innovator in the industry with a strong focus on sustainability. "The people, profit, planet model is at the forefront of our thinking," says Sandy.

Fruition Horticulture is known for the leadership it takes in training people at all levels within the industry, and has the contract to deliver the Vakameasina programme for Recognised Seasonal Employer (RSE) scheme workers.

It has developed and delivers the Fruition Diploma in Horticulture Production, delivers the Lincoln Diploma in Horticulture and other short courses. Fruition partners with Te Pūkenga (formerly the Primary ITO) to deliver tuition for New Zealand Certificate in Horticulture to horticultural apprentices.

“
If organisations want to attract and retain the talent that is out there, they need to seriously reflect on their organisational culture

One initiative Sandy is particularly proud of is the Agrecovery programme which today provides free recycling for plastic containers from more than 3000 of the most common agri-chemicals, animal health and dairy hygiene products sold into the New Zealand market.

"We got funding to initiate that project from the Ministry for the Environment and carried out a thorough analysis of how it should operate. We were determined that the plastic be recycled in New Zealand rather than shipping our problems off to the third world. Today the levy paid when agri-chemicals are purchased funds the scheme and millions of kilograms of plastic have been recycled nationwide."

In the last 35 years Sandy has worked alongside kiwifruit growers as they experienced the industry's highs and lows, and in 2023 she is concerned for growers of green kiwifruit.

"Up to half of these growers are facing an income below the cost of production this year, which is incredibly hard for them. I am also really concerned there might be a knee-jerk reaction in the form of a challenge to the industry's single desk marketing structure. The single desk is critical to the success of the industry and needs to be protected."

Looking ahead, Sandy is excited to be working alongside iwi and hapū groups seeking to develop their land with the goals of establishing long-term income, education and employment opportunities alongside caring for the land.

Sandy who thoroughly recommends a career in horticulture to young people, young women in particular. Having said this, Sandy also raised concerns expressed by some young women about the sexism that still exists within some organisations.

"If organisations want to attract and retain the talent that is out there, they need to seriously reflect on their organisational culture. Allowing sexist remarks in the boardroom and/or the tearoom, or turning a blind eye to other forms of sexual harassment (or racial harassment) is not creating a positive workplace culture. Such behaviour needs to be challenged at all levels within the industry."

Sandy is particularly encouraged by the young women coming through into the industry. "We have a great team and I see a range of young women stepping into roles throughout the industry and contributing so well - it's exciting for them and it's great for the industry." ●

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

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GROWER-LED INNOVATION PROVES ITS WORTH IN PUKEKOHE

Glenys Christian



Onion drying machinery was able to be back in use quickly after the recent heavy rains

Pukekohe grower learnings from a big flood in 1997 proved their worth during recent weather events says AS Wilcox production manager, Simon Wilcox.

“Then there was literally mud in the streets, but this time none,” he says.

Over 200 millimetres of rain fell on areas to the west of the town on 27 January, then early the next month when growers were crossing their fingers for three weeks of dry, sunny weather, Cyclone Gabrielle brought a similar amount to the east. Both came on top of an already very wet growing season, resulting in damage to onion and potato crops. There’s also been a lot of extra work to correct soil movement on-farm, with additional costs of upwards of \$1000 per hectare to rework already cultivated fields.

But they were saved from more serious impacts because of silt traps they had installed over the last 20 years. They are now part of the design process for new farms, with their capacity and functionality improved since the Franklin Sustainability Project was launched in the late 1990s, along with an integrated stormwater management system for parts of Pukekohe Hill.

“Big is not necessarily better,” Simon adds. “Ultimately growers have an inherent understanding of their land and how water moves across it.”

They are also using management techniques for in-field mitigation of soil erosion such as wheel track ripping and raised driveways.

“They are all tools in the toolbox and you don’t need every tool to do the job. It’s a case of picking the right one.”

Cover crops are being used by many growers and A S Wilcox favours oats or annual grasses.



Grower Peter Reynolds in a mustard cover crop

“There is a trend towards using mixed species, but that depends on growers’ cropping systems and what benefit there will be.”

Riparian planting along streams where they run through cropping land has also reduced soil erosion, benefitted the local ecosystem, and reduced water temperatures.

“**You don’t need every tool to do the job. It’s a case of picking the right one**”



“We’ve made good improvements but there’s still more to do,” he says.

One issue the Pukekohe Vegetable Growers’ Association (PVGA), of which he’s vice president, had expressed frustration about was Auckland Council’s lack of maintenance of local drains since the formation of the Supercity. It pushed hard after the first rain event, resulting in rapid action removing weeds and rubbish, which meant fewer problems during Cyclone Gabrielle.

“We appreciate the council’s immediate response and now we want to look to the medium to long term,” he says.

The PVGA had led discussions with the council on a catchment approach, which it believes would be the best future option.

“People have learned quickly that we’ve experienced climate change but we need to build on that so we’re more resilient.

Peter Reynolds from Reynolds Produce, which crops over 200ha around Tuakau and Pukekohe says that with soil erosion mitigation strategies it has put in place, “no silt leaves the farm”.

Before the Franklin Sustainability Project was implemented after floods in the late 1990s some growers had dug pits out in the corners of their cropping paddocks to catch washed off soil.

“But after that we put thought into it and got serious,” he says.

“We kept it practical and concentrated on what growers could build themselves, because if the council got involved they would have been very prescriptive.”

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A ute shows the height of soil already cleared from a bunded headland trap

On their Tuakau farm which has six silt traps, one which services 15ha is 25 by 10 metres and three metres deep. Over one metre of silt had been collected in it in late February, which will be cleared out when weather allows and put back on the farm. Shallow bunded headland traps which are 50m long and 10m wide also ensure no silt loss off cultivated paddocks. Already that collected silt has been scraped off and piled up by the eight-metre headland ready to be returned to paddocks.



We kept it practical and concentrated on what growers could build themselves, because if the council got involved they would have been very prescriptive

Cover crops have been used for many years, mainly mustard. Around 50ha a year is grown, which is rotary-hoed back into the ground. Other options for this include grain crops or pasture.



Peter Reynolds with machinery drying onions in the field

“We are really looking after our soils,” Peter says.

“If the ground had been left fallow there would have been a lot of run-off, with a huge amount of silt going into neighbouring properties or onto the roads.”

Riparian planting of natives along streams and around cropping ground borders has been the answer on some of their farms, helping to improve water quality and also attract birdlife.

But he’s not stopping there.

“We’re going to learn a lot out of this,” he says.

Already Peter is planning to enlarge a silt trap in a cultivated paddock, which he counts himself fortunate to have ripped the evening before Cyclone Gabrielle was predicted to hit.

There had already been much discussion amongst growers and swapping of ideas after the two rainfall events as to which soil management strategies had worked best for them.

Hira Bhana, director, Bharat Bhana, says full silt traps on cropping land prevented newly built houses in some parts of Pukekohe being flooded and the total damage bill running into the billions of dollars.



A silt trap on Peter Reynolds' Tuakau farm, photographed in February after high rainfall and then photographed again after clearing on 23 February

"But no one on either council or in the media has mentioned that growers have done a brilliant job," he says.

“**People have learned quickly that we've experienced climate change, but we need to build on that so we're more resilient**

They knew what they could and couldn't do and had learned a lot over recent years, reflected in Franklin Sustainability Project guidelines being a living document.

"When we first started we dug small silt traps, but if they're overflowing they're not big enough, so we've made them deeper and wider."

The company also grows 200ha of mustard as a cover crop and around 20ha of oats, along with some annual grasses cut for silage then cultivated back into the soil.

"They don't like to see their topsoil going out their drive and away," he says.

"We can't afford to lose it. If we haven't got any topsoil we're history, as it's our livelihood. There would only be clay otherwise."

He's hopeful that ground for early crops will be able to be readied by mid-May.

"If the weather behaves itself for the next seven weeks we'll be back to normal." ●



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TOUR GIVES CROSS-COUNTRY VIEW OF GROWING CHALLENGES

Kristine Walsh



Sustainability and consistency of supply drove the company's decision to build its 3.5ha covered greenhouse

Steady drizzle meant there were no boots on the ground, but around 40 guests got a bus-side view of major grower LeaderBrand's Gisborne operation.

Organised as part of the launch of the new *Aotearoa Horticulture Action Plan: Growing Together 2035 (AHAP)* in early February - before Cyclone Gabrielle hit the region - the tour looped through the company's extensive linked farm operations, and swooped past its workshop, nursery and covered cropping sites.

But with time short, visits to the city-based headquarters, packing facility and massive salad house were off the itinerary.

Along the way, chief executive Richard Burke gave a running commentary on everything from how the company pivots to meet the market, to how it deals with weather conditions.

As many guests were from out of town, they were particularly interested in how LeaderBrand - which grows in Gisborne, Pukekohe, Matamata and Chertsey (Canterbury) - works to manage farms in different conditions.

The Pukekohe farm being on a hill, for example, meant it escaped the flooding that inundated the Auckland region at the time, but it was tricky to hold soil on the sloping ground.

Back in Gisborne, on the other hand, LeaderBrand's location on the Poverty Bay Flats means getting rid of standing water is a continual challenge that requires big investment in drainage systems.

All that investment does not mean it is immune to weather conditions, said Richard, pointing at the portable irrigation systems that had been dormant throughout the unseasonably wet summer.

But it does mean it has to be diligent to ensure consistency of supply for its large, mostly supermarket based, domestic market.

Established in 1975 by Gisborne grower Murray McPhail, LeaderBrand remains family-owned and today grows over around 3500 hectares across its four locations.

Included in that is some 400ha of grapes - sauvignon blanc, with smaller amounts of pinot gris and chardonnay -from which the company has developed a sizeable winemaking business, with the intent to rotate the land by turning vineyards into vegetable production after 15 to 20 years.

"It works for us in that the harvest times mean we don't have to drive over wet land in winter, and it helps make good use of our year-round labour force," Richard said.

"The only problem is it's going so well that our grape guys don't want to let the land go."

While LeaderBrand's across-range production is large, it has a focus on future-forward farming, and with partners like Countdown and Plant & Food Research, works to measure and mitigate its impact on the environment.

Richard told guests that both sustainability and consistency of supply drove the company's decision to build its 3.5ha covered greenhouse, with a further 7ha due for completion.

"This is where the rubber hits the road in terms of our ability to experiment with things like electric harvesters -



On a tour around the company's Gisborne operations, LeaderBrand chief executive Richard Burke outlined strategies for dealing with everything from market conditions to the weather

which we think will soon be mainstream outdoors - and all the other technologies that are part of our Future Farming project."

But he had a bit of sage advice as to what not to do: "Don't build a major development with European components, and a European construction team, in the middle of a global pandemic." ●

An advertisement for Duratough Greenhouse Film. The background is a photograph of a long, covered greenhouse structure under a blue sky with clouds. The Redpath logo is in the top left. The main text 'Duratough Greenhouse Film' is in large, bold, red letters. A yellow starburst graphic says 'CHECK OUT THE SEASON SPECIALS ON OUR WEB SITE'. Three red banners at the bottom left list benefits: '20% longer life', '10% thicker (215 micron)', and '0% more expensive!'. The contact information 'Freephone: 0508 733 728' and 'www.redpath.co.nz' is in the bottom right.

Redpath **Duratough**[®]
Greenhouse Film

CHECK OUT THE SEASON SPECIALS ON OUR WEB SITE

20% longer life
10% thicker (215 micron)
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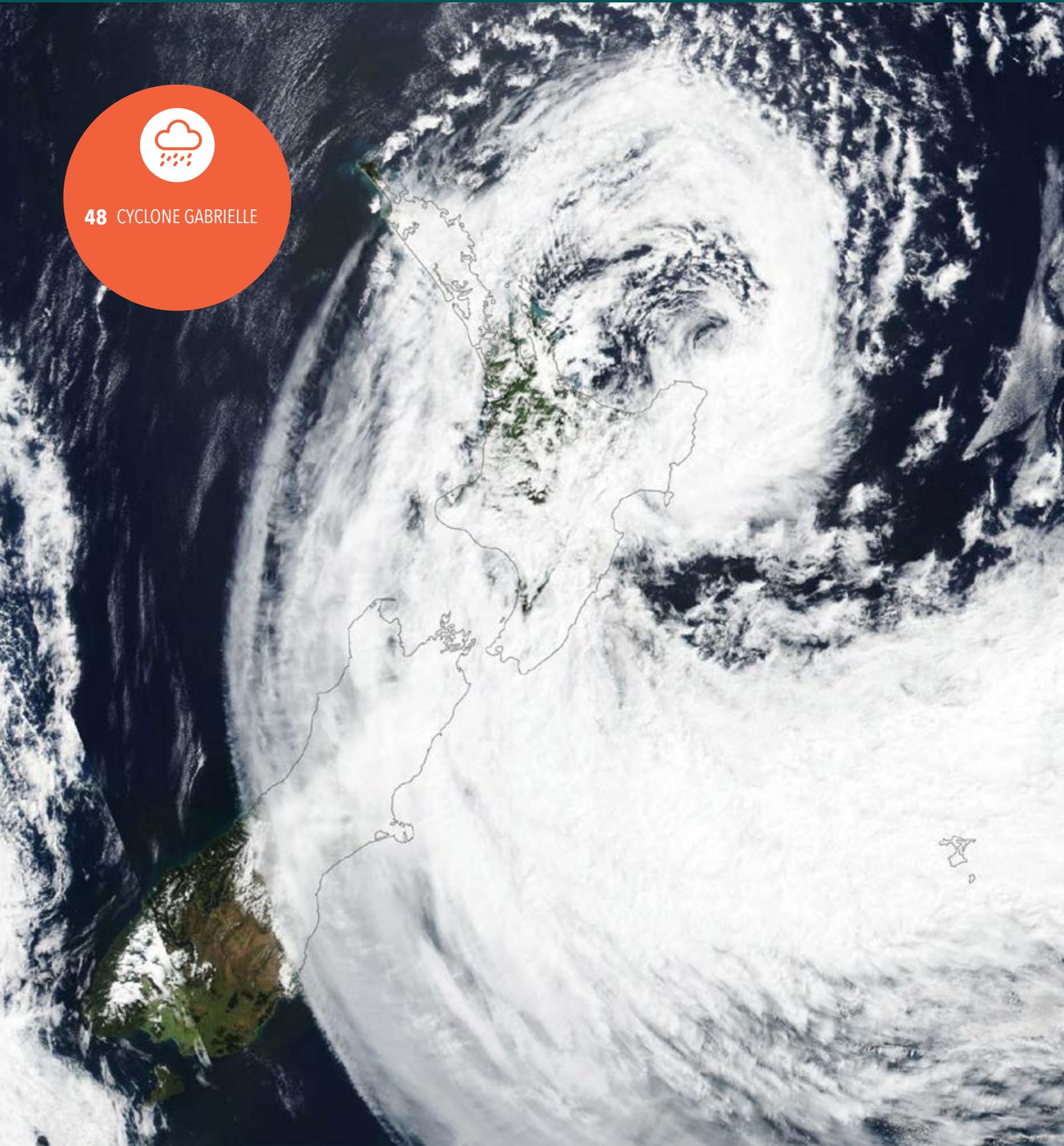
TECHNICAL



THE LATEST INNOVATIONS AND IMPROVEMENTS



48 CYCLONE GABRIELLE





TAKING VEGETABLE PRODUCTION TO THE NEXT LEVEL

Mike Nichols



Lettuce grown in Belgium with mobile gulleys, a system yet to be fully exploited in New Zealand

Some 30 years ago I regularly took a group of Massey University horticultural students to visit the fresh tomato industry in Ōtaki. Then almost overnight, the industry disappeared. This was not due to some major environmental influence, because Ōtaki is an ideal district to grow tomatoes. The sudden demise was solely due to the development of large 10-hectare tomato greenhouses in Auckland.

Back then, the greenhouse tomato was normally produced in New Zealand for the winter and spring market. Summer production was primarily dependent on outdoor tomato growers, but the demand for reliable high-quality tomatoes year-round spelled the demise of the Ōtaki industry.

Vegetable production as we have known it is clearly going to have to find new methods to respond to climate change. The answer for many fresh vegetable crops is going to be protected cultivation (i.e. greenhouses). So will vegetables price themselves out of the consumer's price range?

I recall a lecture given some 70 years ago by a certain Professor Hudson who demonstrated the importance of the environment and of grower knowledge on horticultural crop production (Figure 1).

He demonstrated that the most successful growers produce the biggest crops due to adequate capital and greater knowledge (that is, making less mistakes than the other growers). The record yield (produced by the top 10 percent of growers) could be defined as a good luck bonus, due to exceptional weather conditions. There was also a genetic potential (of which more later) (Figure 1).

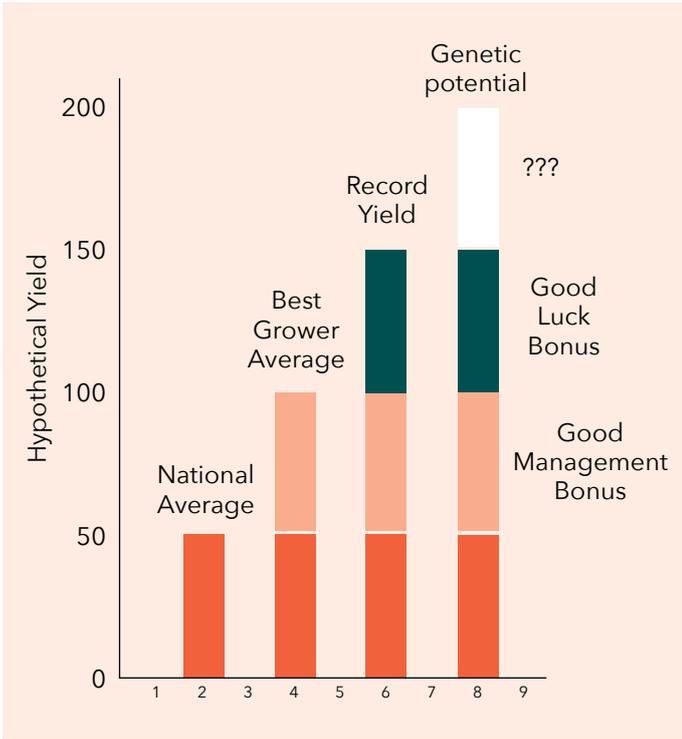


Figure 1: Hypothetical horticultural crop yields

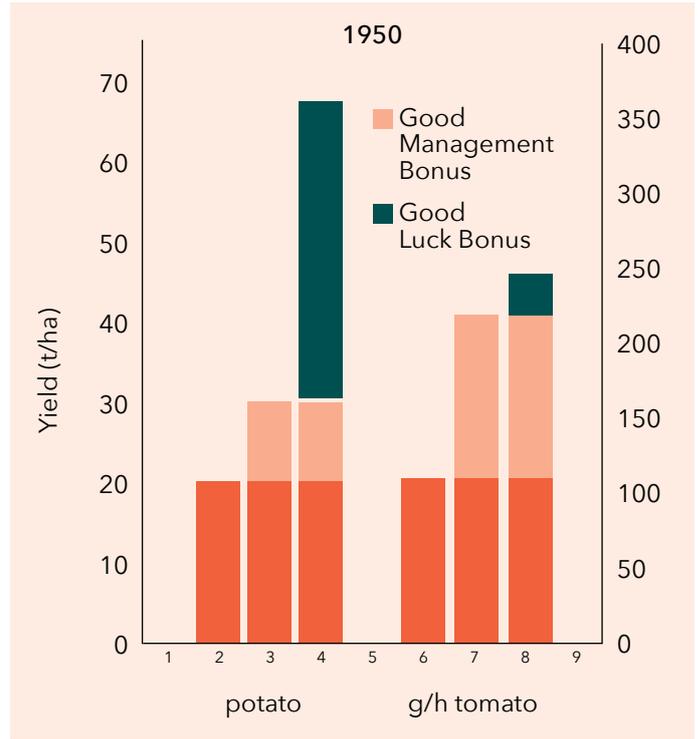


Figure 2: Actual yield data (1950) of field crop (potatoes) and greenhouse crop (tomatoes). Note: the yields for the two crops have a different scale

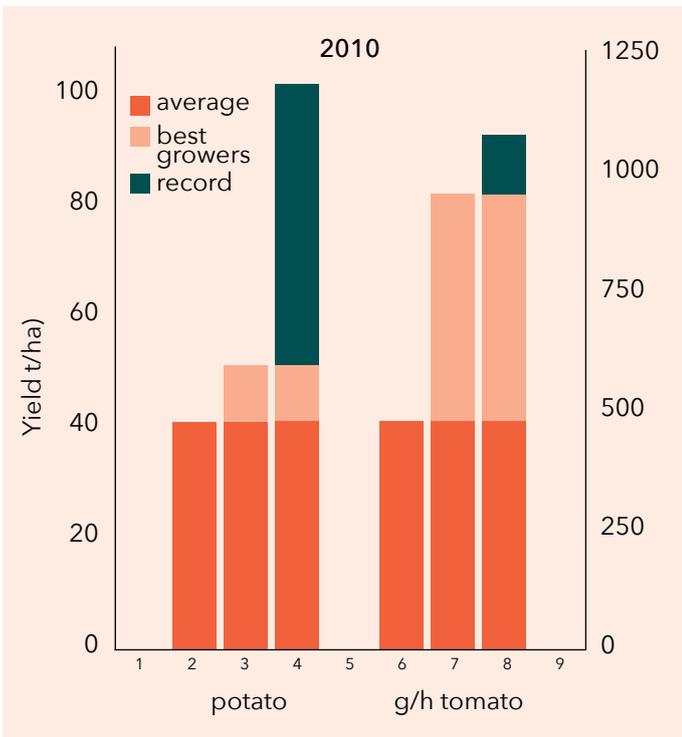


Figure 3: Yields of potatoes and greenhouse tomatoes in 2010

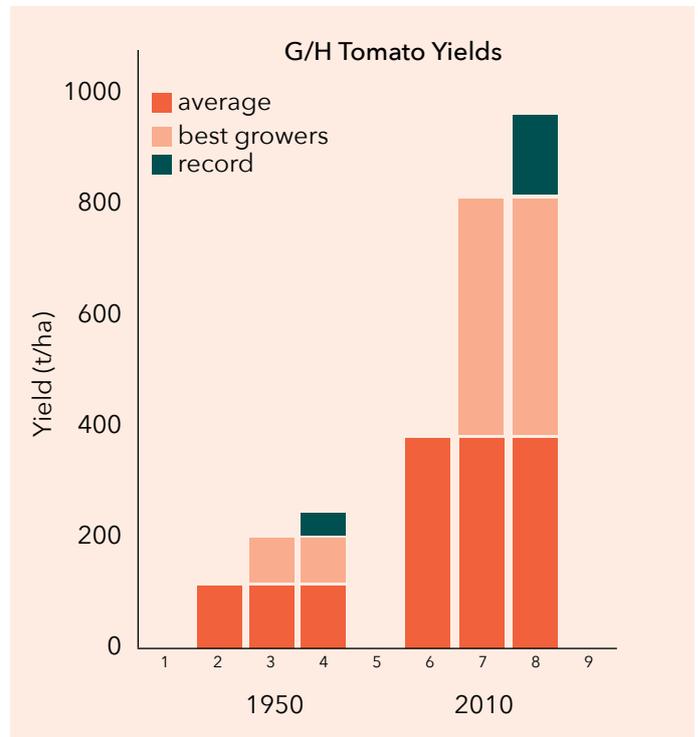


Figure 4: Comparative greenhouse tomato yields 1950 and 2010

Professor Hudson then compared the yields of an outdoor crop (potato) with that of a greenhouse crop (tomato). However, the gain from knowledge for the outdoor crop is considerably less than the gain from having an exceptionally good growing season (Figure 2). This accounts for the record crop, while in the greenhouse,

the weather is controlled to a reasonable extent by the more knowledgeable growers, therefore the record yield increase is much smaller.

One might expect the same yield pattern in 2010 (Figure 3), but the yield in the greenhouse tomato crop has in fact increased significantly (Figure 4).

Productivity has increased four times due to a combination of factors, including improved genetics, more modern greenhouses, improved environmental control, improved pest and disease management, and hydroponics, which has ensured minimal water and nutrient stress.

“

With the availability of labour being an increasing issue, greenhouse production has its benefits, providing a warmer and more protected environment for workers

Hydroponics is probably the key factor, as it is impossible to ensure that plants growing in soil are unaffected by moisture and nutrient stress.

In fact, New Zealand soils (with a few exceptions) are recent soils that have developed from volcanic activity. They can suffer from a deficiency of critical elements for plant growth and also for animal health. For example, the pumice soils in the North Island are deficient in cobalt. In general, New Zealand soils tend to be low in selenium, iodine, zinc, chromium and boron.

Most vegetables will respond to protected cultivation cropping and hydroponics by producing more rapid growth and better quality crops, so the question is not what can be grown in this manner, but the economics of the operation. Environmental constraints may also play a role, for example, leeks can be grown outdoors in the soil, but are labour intensive to harvest, and require considerable washing to remove soil from the roots. They are cleaner to harvest when grown hydroponically.

The past winter and spring have seen major problems in many parts of New Zealand with crop harvesting and cultivation due to unseasonal rains. Global warming predictions for the increasing occurrence of extreme weather conditions have influenced the steady transfer of vegetable crop production into greenhouses. With the availability of labour being an increasing issue, greenhouse production has its benefits, providing a warmer and more protected environment for workers.

The production of crops for processing (peas, beans and sweet corn) may not follow this trend. However, more and more lettuce is being grown in greenhouses (for example, LeaderBrand in Gisborne), while most herbs are now grown hydroponically, usually in greenhouses. Many other crops could also be grown in this manner, including celery - which would respond to Nutrient Film Technique (NFT) and the reduction in the need for fungicide sprays. Salad onions also grow well in NFT hydroponics.

Several potato growers now market gourmet potatoes which are field grown. It is possible to produce a very high



Most vegetables will respond to protected cultivation cropping and hydroponics by producing more rapid growth and better quality crops

quality gourmet potato using aeroponics, which allows the harvesting of tubers as they mature on a daily basis over an extended time scale.

The mobile gully system of vegetable production has never been fully exploited in New Zealand. By using mobile gulleys, we could produce at least double the yield per hectare, and using greenhouses maybe as much as three times the crop.

“

Vegetable production is clearly going to have to find new methods to respond to climate change

The habit in supermarkets of cutting some vegetables into halves (and wrapping in plastic film) should be unnecessary. It should be possible to produce smaller cabbage, broccoli, and cauliflower. Mobile gulleys should make this possible, combined with (of course) a breeding programme.

Where to from here?

These changes, extreme though they may appear, are but a step away from the development of plant factories (also called vertical farming) in which crop production occurs year-round in the town and cities where the food is to be consumed and thus distance from market is no longer a factor. The plant factory will be far more productive than in the field or the greenhouse, will be lit by LED (light-emitting diode) lights with some crops receiving light for 24 hours to obtain greater productivity. Accurate control of temperature, humidity, air movement, CO₂ level etc will ensure that plants are able to achieve their genetic potential. This type of production has already begun in New Zealand, with year-round strawberry production in Foxton by 26 Seasons. ●

CYCLONE GABRIELLE



Georgina Griffiths : MetService meteorologist

National State of Emergency declared

A nationwide State of Emergency was declared on 14 February, as Cyclone Gabrielle lashed the North Island – only the third time such a declaration has been made in New Zealand’s history.

The declaration was issued to support six regions that had already declared a Local State of Emergency: Northland, Auckland, Tairāwhiti Gisborne, Bay of Plenty, Waikato, and Hawke’s Bay.

This cyclone was a **very** intense system even after coming out of the tropics, with an analysed central pressure of 965hPa (see MetService expert forecaster hand-drawn analyses in Figures 1 and 2). With such a deep central pressure, this system produced a large area of severe gales, dangerous seas and extreme swells of 9-12 metres, as well as a significant storm surge (of at least 0.5m) along the northern and eastern coastline of New Zealand.

In addition, **extreme rainfall totals** (approximately 200–500 millimetres of rainfall) affected all northern and eastern areas of the North Island, resulting in loss of life, widespread and unprecedented flooding, and an extreme number of slips across the motu. Many rain gauges across the north and east North Island recorded near to, or more than, **half their annual rainfall total** in just the first 45 days of the year (see Figures 3, 4 and 5).

MetService forecasters had issued multiple Red Heavy Rain Warnings and multiple Red Wind Warnings, well in advance, for this cyclone. Red warnings are reserved for only the most impactful weather systems, which are expected to cause loss of life, significant impact, and significant disruption.

Cyclone Gabrielle has certainly delivered an unprecedented blow to the North Island, and from us here at MetService to you out there cleaning up, at home or on the farm, **kia kaha.** ●

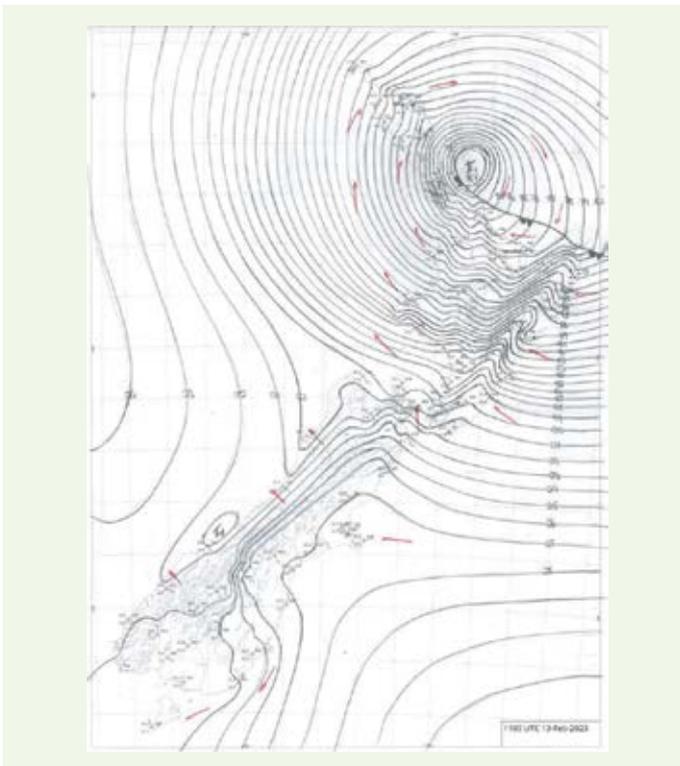


Figure 1: A hand-drawn weather map at midnight Monday 13 February 2023, showing extremely tight isobars around Cyclone Gabrielle (marked as L) as it lay just to the east of Great Barrier Island and Coromandel Peninsula

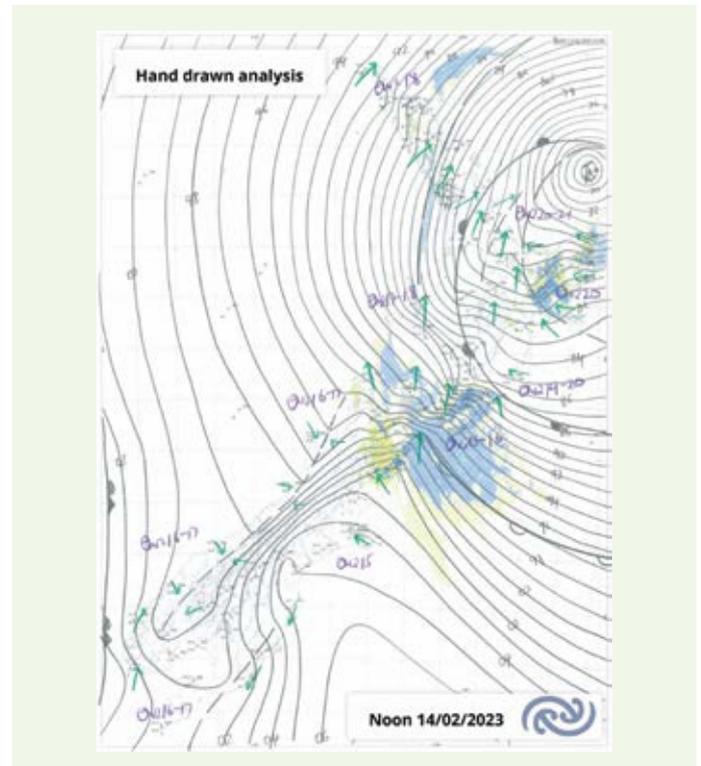


Figure 2: A hand-drawn weather map at noon Tuesday 14 February 2023, showing the position of Cyclone Gabrielle just north of East Cape. In this analysis, rainfall as seen on radar is coloured blue

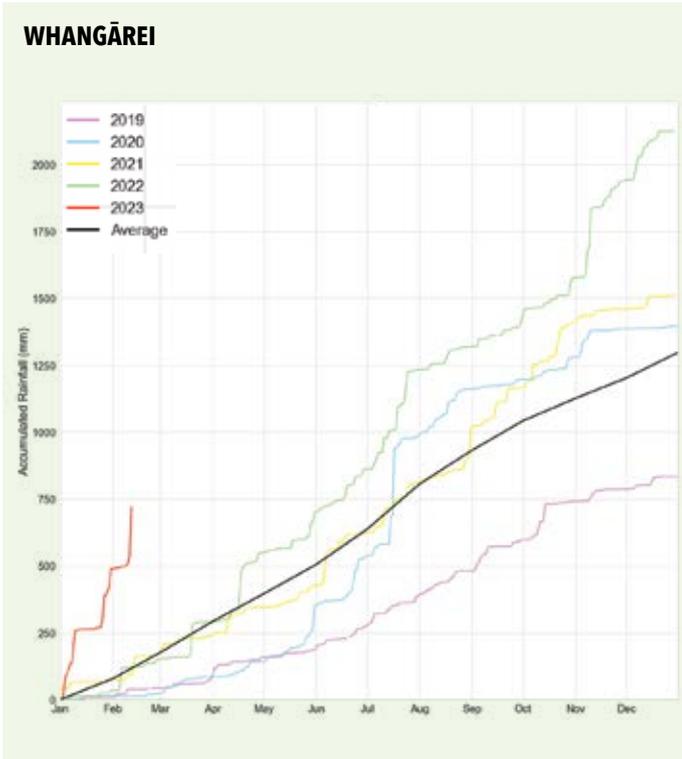


Figure 3: Whangārei Airport annual rainfall accumulation (mm) for the last five years (2019 to 2023). The annual average rainfall accumulation is shown in black. The year-to-date rainfall accumulation (722 mm) as at 9am 14 February 2023 was over half (56 %) of the usual annual rainfall tally, just 45 days into the year

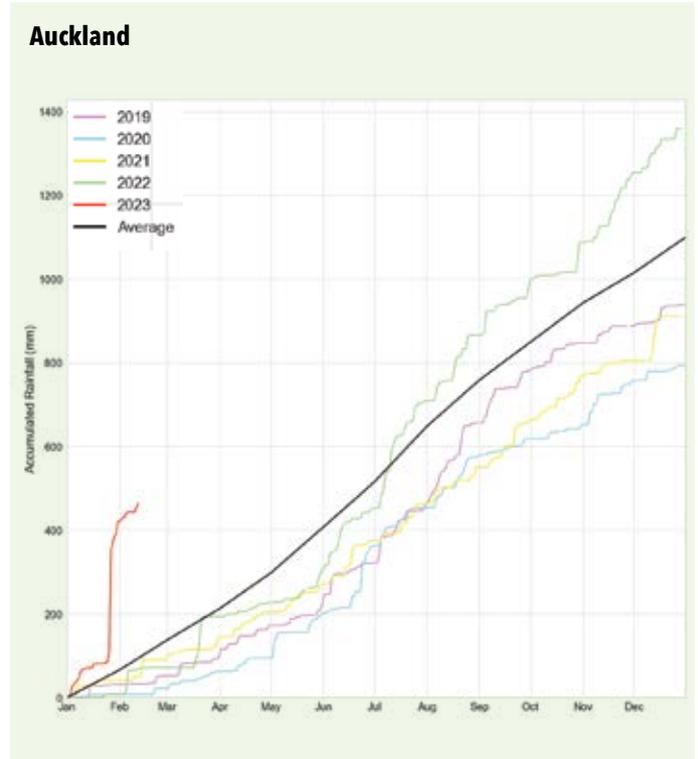


Figure 4: Auckland Airport annual rainfall accumulation (mm) for the last five years (2019 to 2023). The annual average rainfall accumulation is shown in black. The year-to-date rainfall accumulation (540 mm) as at 9am 14 February 2023 was around half (48 %) of the usual annual rainfall tally, just 45 days into the year

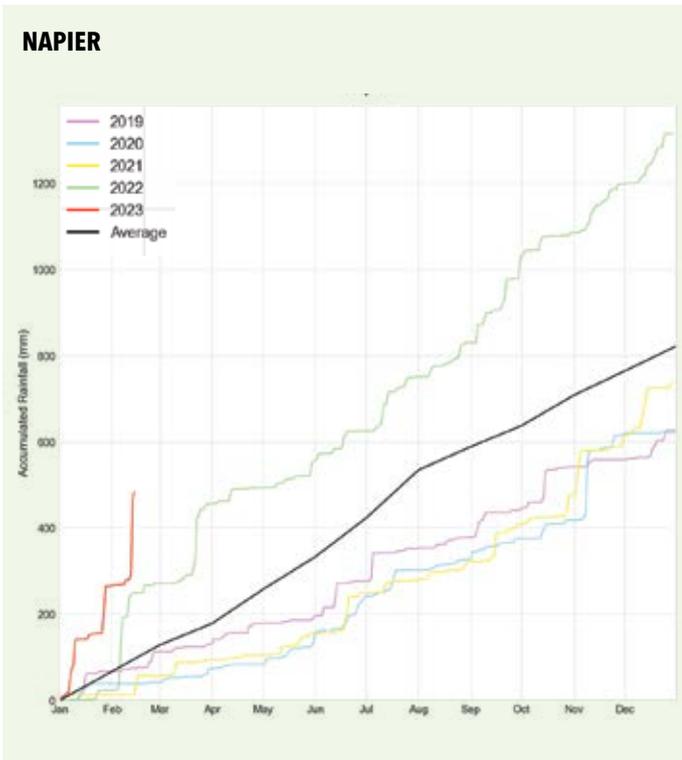


Figure 5: Napier Airport annual rainfall accumulation (mm) for the last five years (2019 to 2023). The annual average rainfall accumulation is shown in black. The year-to-date rainfall total at Napier Airport was 483mm, or 60 % of the usual annual rainfall tally, just 46 days into the year

CYCLONE GABRIELLE PRODUCED:

-  A LARGE AREA OF **SEVERE GALES**
-  **EXTREME SWELLS OF 9-12 METRES**
-  **EXTREME RAINFALL OF APPROXIMATELY 200-500 MILLIMETRES**

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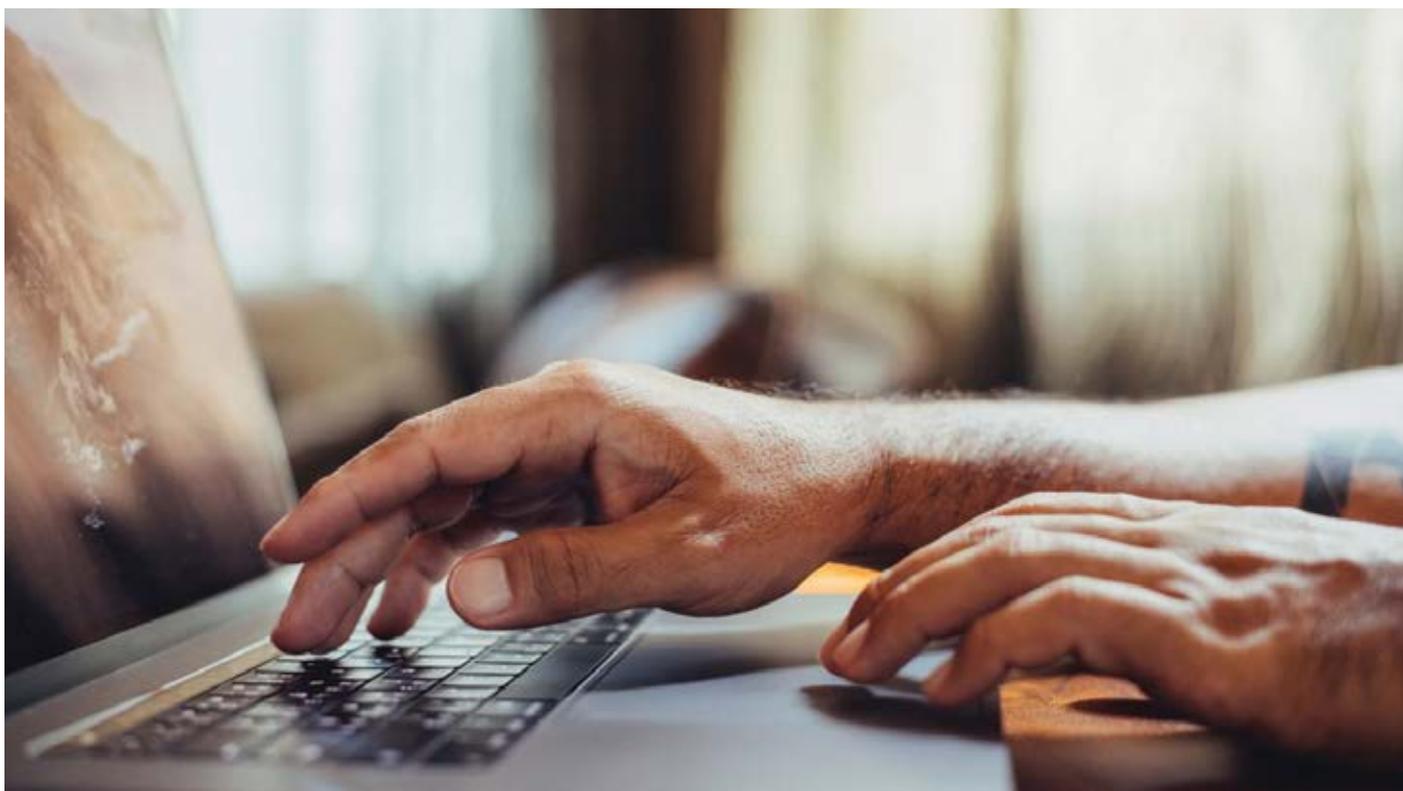


MetService



MANAGING YOUR EMISSION UNITS IN THE NZ EMISSIONS TRADING REGISTER

Supplied



The Environmental Protection Authority (EPA) has put together guidance to help you with the industrial allocation process. This three-part series explains industrial allocations and how to set up an account in the New Zealand Emissions Trading Register (December 2022 edition, page 61) and provides a guide to the application process (February 2023 edition, page 44).

This is the final article in the series. Part 3 explains the Emissions Trading Scheme (ETS), how to transfer units in the New Zealand Emissions Trading Register (the Register), and provides tips for managing your account.

The Emissions Trading Scheme

The ETS is a market-based approach for reducing greenhouse gas emissions. The ETS puts a price on emissions by charging certain sectors of the economy

for the greenhouse gases they emit. Participants in the ETS that sequester (store) carbon earn units from the government that they can sell on the market.

The government also provides an allocation of emission units for activities that are emission-intensive and trade-exposed. It recognises that ETS costs might affect the international competitiveness of some businesses, like growers of fresh tomatoes, cucumbers, capsicums and cut roses.

Emission units

Emission units, sometimes called 'carbon credits' or 'carbon units', are traded between participants in the ETS. An emission unit can either represent one metric tonne of carbon dioxide, or the equivalent of any other greenhouse gas.

Emission units are created by the New Zealand Government and allocated to organisations and individuals participating in the ETS. These are called New Zealand Units, or NZUs.

New Zealand Emissions Trading Register

If you want to hold and trade emission units, you will need to have an account in the Register (outlined in the December 2022 edition, page 61). This is managed by the EPA.

The Register acts like a bank, but it holds emission units instead of money. The Register is where you can store units and transfer them to other holding accounts when trading.

Just like online banking, you can check your balance of units at any time. You can also see your transactions of units from one account to another, like a bank statement.

You have applied for your units - now what?

Once you have applied for an allocation of units, you will be notified by the EPA when they are in your account in the Register.

What you do with them is up to you. Units have a market value; you can transfer them in the Register to someone who needs units to meet their surrender obligations, or there are traders and intermediaries who can trade units on your behalf.

It is important to note that the Register does not currently record information about the price or financial value of emission unit trades. The EPA is unable to transfer units on your behalf; and the Register does not provide a way to exchange cash for units traded.



The EPA has created a series of guides and videos to help you manage your account. You can find these on their website: www.epa.govt.nz/register-guidance

Five tips for managing your Register account

 **Tip 1:** Just like online banking, keep your password secure and make sure your contact details are up to date.

 **Tip 2:** It is recommended you have at least two people on your account who are authorised to operate the account, including preparing transactions. This ensures there is a backup in the case of unexpected absences, and that you are aware of reminders or information related to your account. You can also set up preparer and approver roles as part of a two-step approval process to provide additional security around transactions.

 **Tip 3:** You are legally required to keep good records. This includes the information used to prepare your application, documents about the crops you produce, sales and inventory records.

 **Tip 4:** If you stop producing your crops and have received a provisional allocation of units, contact the EPA within 20 working days via 0800 254 628 or info@epa.govt.nz. Make sure you complete a closing allocation application in the Register and repay any units owing to the EPA. Both steps must be done within 20 working days.

 **Tip 5:** For the latest news and information about the ETS and the Register, subscribe to the EPA's regular *ETS Update* newsletter via their website. ●

Need help?

If you are unsure what to do, please talk to the EPA.
Call **0800 254 628**
Visit www.epa.govt.nz/register-guidance

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SVS TOOL DEVELOPMENT UPDATE

Andrew Barber and Henry Stenning : Agrilink NZ

The plant-soil nitrogen system model that will underpin the future Sustainable Vegetable Systems (SVS) nitrogen management tool, N-Sight, is now in a testable state. The next iteration of the tool is mostly complete, though further climate data and leaching sub-models are yet to be finalised.

The SVS team will shortly be ready to test the practical application of the tool with growers from across the country. The results of these tests will both inform further development and be used in a series of case studies. The case studies will form part of the tool's rollout in June once the user interface has been completed.

“

The most advanced level of the tool uses previous crop information to begin accounting for crop residue

Test data will come from the information already collected as part of SVS's regional monitoring, as well as from case studies currently being organised with growers around the country. These case studies will test what information growers will be able to provide, from the most basic through to drilling down into more detail with soil testing and estimated crop residues. Most importantly, the testing will determine how the tool can be used on farm to assist with nitrogen application decision making.

Understanding the variability caused by climate and crop variety is critical to ensuring the model works across the majority of real-life circumstances, therefore this testing will take place across the country. A Canterbury potato or cauliflower has different nitrogen application requirements (rates and timings) than one grown in Pukekohe, with these requirements dictated by a variety of factors (crop, climate, ground conditions, soil types). The model needs to be able to account for this and predict nitrogen availability and uptake to a reasonable level of accuracy to ensure its suitability across the industry in as many applications as possible. Keeping in mind that the model is being used to forecast nitrogen demand and supply, and that in-season soil nitrogen measurements (e.g., N Quick Tests) ground truth how the season is actually tracking.

The next phase of testing

Part of this next phase of testing will be better understanding how growers currently make nitrogen application decisions, and what information they currently collect and use to make these decisions. Because growers operate across such a huge variety of circumstances in a highly diverse industry, with huge differences in operation sizes, types of rotations and crop mixes, the tool needs to be able to account for a large variation in available input information. Some operations may have the capacity to tune the guidance, for example by conducting in-season soil tests or estimating the average quantity of residue left behind by a previous crop, while other operations simply will not have the time or staff to do so. This reality has been incorporated into the tool, which starts at the most basic input level, and then has multiple levels of optional input data available for the grower to drill down into. A recent workshop showed that once you present the basic information, people's natural enquiring minds guide them towards drilling further into the more detailed levels, for example collecting and entering soil tests and crop residue information.

The basic level consists of the most readily obtainable information: location, crop/variety, planting and harvest date, plant population/target yield. Converting yield in number of heads to tonnes per hectare, required by the model to estimate biomass, was worked on last year and will be an area of focus for the case studies.

“

Level two of the tool has more granular inputs

Some level of uncertainty is inherent to every prediction. Even the gold standard in determining soil nitrogen content - laboratory mineral nitrogen tests - have some degree of uncertainty attached to the results. To reflect this, the tool displays this uncertainty around its predictions, which narrow as the level of information fed into the tool increases.

Level two of the tool has more granular inputs. These include potentially mineralisable nitrogen (hotwater N test), the number of side dressings, and any mineral nitrogen soil test results and their dates. Uncertainty



Figure 1: A prototype version N-Sight. This will be used to test the SVS model and assist with the development of the next version, which will be made available for wider use in June 2023

around the model predictions diminishes with each soil test as measured results (with their own uncertainty) replace modelled numbers.

The most advanced level of the tool uses previous crop information to begin accounting for crop residue.

SVS N-Sight Outputs

The key outputs are a nitrogen budget, partitioning all the flows going into and out of the vegetable system, and guidance on the nitrogen fertiliser application rate. A time series graph shows the soil-plant nitrogen balance, the uncertainty surrounding the soil nitrogen curve, and

the planned fertiliser applications. If an in-season mineral nitrogen test is specified in the second input level, the soil nitrogen curve resets based on this latest measurement, ensuring that the model accounts for any change and updates the guidance to get the crop through to harvest.

It should be noted that the tool is at an iterative testing phase, which will evolve to match user experiences and will shortly have a user-friendly front end. Therefore, it should be expected that the list of inputs described above, as well as the format of results, will change by the time the tool is released. ●

PRODUCT GROUPS



ALL THE LATEST NEWS FROM YOUR PRODUCT GROUPS



60 INVESTIGATING
OPPORTUNITIES





WHAT A START TO 2023!

Gemma Carroll : Potatoes NZ Inc. communications & engagement officer with assistance from Emily Pope and Andrew Barber

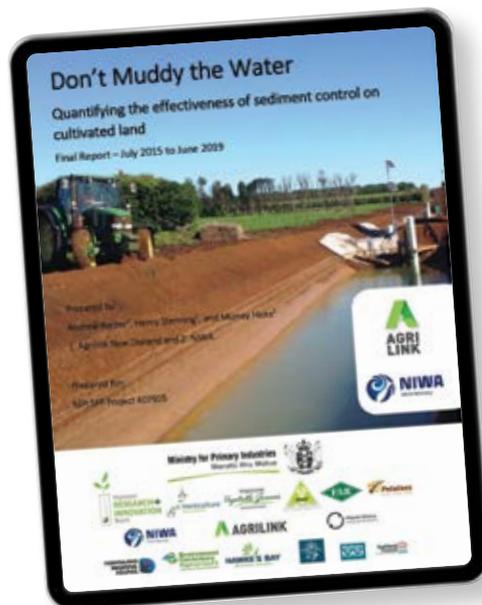
Our growers in Pukekohe experienced 265mm of rain washing away valued crops in a matter of hours in January. Then to follow on the heels of the flood, Cyclone Gabrielle wreaked havoc across the motu, with the full impacts not yet known.

Despite the recorded rainfall in Pukekohe for January being around 300 percent of the normal average, resilience was seen in the practical advances made in managing soil and water movement.

The vegetable industry has made considerable progress over the last 25-plus years, not least in the area of erosion and sediment control.

Growers, councils and the wider horticulture industry have worked closely together since Pukekohe's large 1997 storm, resulting in the formation of the Franklin Sustainability Project and an Integrated Stormwater Management System for parts of Pukekohe Hill.

Other initiatives have included the industry's *Don't Muddy the Water* programme, Vegetated Buffer Code of Practice, and Farm Environment Plans, all of which have resulted in a significantly more sustainable growing system.



POTATO OF THE MONTH: LILY ROSE

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Farm gates couldn't hold back the flood waters in Pukekohe during January

While there was sediment and onion in drains with the January flooding, the soil loss was significantly less than experienced previously, despite the storm being on top of Auckland's wettest month ever, dating back to 1853 and the beginning of records.



Our growers in Pukekohe experienced 265mm of rain washing away valued crops in a matter of hours in January



As council roads, drains and stormwater pipes failed to cope with the deluge, growers' integrated stormwater systems, correctly sized culverts, drains and sediment retention ponds, for the most part, seemed to work.

This can be attributed to the great work of growers, years of grower financial investment, industry research and a commitment to mitigate sediment loss and minimise the effect of these events. It means that New Zealanders can enjoy local, fresh, healthy, sustainably produced vegetables.

With extreme weather events, urban sprawl and seemingly endless red tape, the challenges of growing potatoes commercially in New Zealand are not set to become easier. This is why we ask that growers participate in our meetings and events, as an opportunity to engage with our team and to ensure our organisation is heading in the right direction with our activities, and maintaining the security and sustainability of the New Zealand potato industry into the future.



We have added a number of 2023 events to the Potatoes NZ Inc (PNZ) website, the first round being late March with Research & Development breakfasts in Canterbury and Pukekohe. To find out more about these, the grower insight meetings and the big winter conference, please visit our events page potatoesnz.co.nz/news-info/events/

Also in January, the PNZ board accepted the resignation of PNZ chief executive, Chris Claridge.

Chris has been in the role for seven years, and has significantly changed the way the organisation operates. In this time, he has brought a number of operational and technical services inhouse and there has been a significant increase of levy money dedicated to research and development.

The chair and board appreciate the achievements of the organisation during Chris' tenure and wish him well for his next endeavours. He will stay on as chief executive until the end of April.

We hope to have some farewell thoughts from Chris next month, upon his departure.

The board remind grower members that the Levy Order vote will be held in mid-2024, dates to be confirmed. By that time there will be a new chief executive and a new chair, due to board rotations.

The board consider this refresh in 2023 to be a timely opportunity for the organisation to successfully support the New Zealand potato industry in the next Levy Order period. ●



Remember we are just a phone call away on **0800 399 574**.



In addition, the Rural Support Trust have rural advisors and support across the country for wellbeing, business advice and to connect farmers with the best financial assistance where possible. Call RST **0800 787 254**.

2023 EVENTS



PNZ R&D BREAKFAST CANTERBURY



PNZ R&D BREAKFAST PUKEKOHE



GROWER INSIGHT MEETING PALMERSTON NTH



GROWER INSIGHT MEETING PUKEKOHE



PNZ INDUSTRY CONFERENCE



GROWER INSIGHT MEETING PUKEKOHE



GROWER INSIGHT MEETING CANTERBURY

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SUPPORT FOR TOMATO GROWERS AFFECTED BY FLOODING

Dinah Cohen : Tomatoes NZ Inc business manager

I have tried to make phone contact with all fresh tomato growers based in the areas that saw extensive flooding in late January and again after Cyclone Gabrielle. For the most part, tomato growers were able to cope with the record-breaking rain that has fallen on top of already saturated land and waterways.

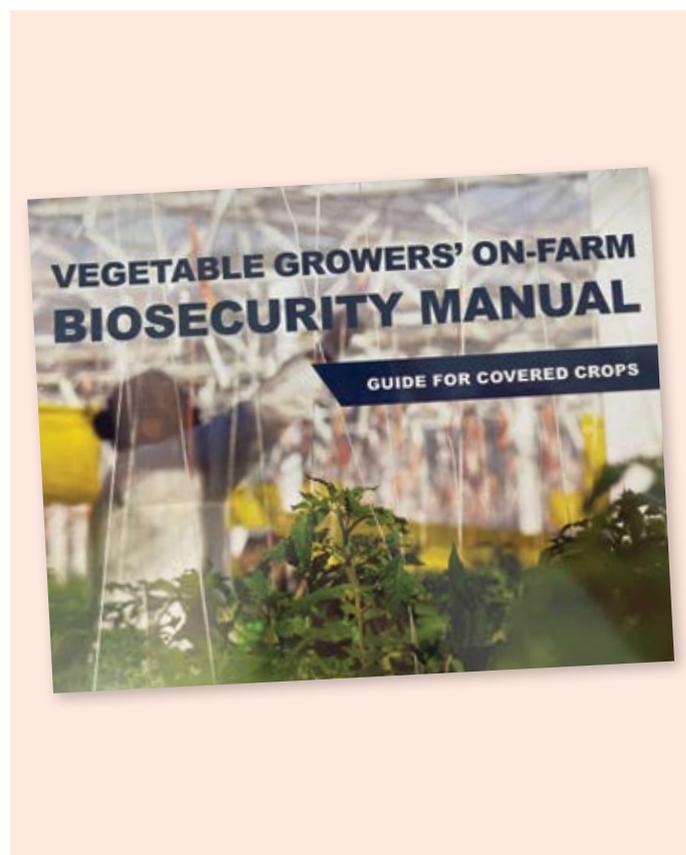
For those that did have damage to their properties, I was able to direct them to some support. If you need help as a result of flooding, please do let me know. Various relief funds exist which I can direct you to. You can also check out the dedicated page on the Horticulture New Zealand website here: www.hortnz.co.nz/compliance/flood-support/



In the coming weeks, if your plants had roots under water, it will be necessary to keep a check for disease. As you will know, stress on plants can take some time to show, but can be alleviated by using the right product. Reach out to your fellow growers or a consultant for advice if you spot anything different. With the warm humid conditions in the South Auckland area and beyond, infestations of pests could also get out of control very quickly. Make sure all those working with your plants are particularly vigilant and get on top of pests as soon as they appear to avoid plants being overwhelmed.

Hygiene materials available to growers

We have a useful poster *Greenhouse Hygiene Measures* and booklet *Vegetable Growers' On-Farm Biosecurity Manual*. These publications are not new but they are still relevant, and available to any grower that would like copies. Please email dinah.cohen@hortnz.co.nz with your address and how many copies you would like.



Tomato prices

Most growers have been happy that tomato prices have stayed high over the summer season. As you will know there are lots of reasons behind this. While the prices paid by consumers at supermarkets are not the prices received by growers, here is the latest from the Consumer Price Index. ●

Recommendations for STAFF on Greenhouse Hygiene Measures



KEY ADVICE:

- Vigilance – ensure all staff are aware of plant virus symptoms and report anything unusual.
- Establish good hygiene practices and processes: **START CLEAN – STAY CLEAN.**
- Limit visitor access.
- If something looks wrong, report to MPI 0800 80 99 66 and get it tested.

- ✓ Wash your hands thoroughly before and after visiting the site and spend plenty of time on the disinfection mat (simply walking over it is not enough). Make sure everything you take into the greenhouse is disinfected.
- ✓ Wear either disposable coveralls and shoes/boots, or assigned clothing that is regularly laundered (60 C plus with oxy laundry powder) and that is specific to sites or compartments. Different colour clothes could be assigned to different parts of the site, especially if disease is present. Shower and change entire work gear before entering uninfected areas again during the same day.
- ✓ Only work in one greenhouse section on any one day. If you do need to cross over into another section, repeat the procedure that applies when entering the greenhouse. The same applies when leaving and re-entering the greenhouse, for example after visiting the canteen.
- ✓ Tool hygiene: have at least two sets of tools that can be switched out and disinfected with each row. Use fresh gloves for each row. Disinfect tools and gloved hands between each plant.
- ✓ Inspect the plants regularly, and if you notice anything unusual about a plant, report it immediately to MPI (0800 80 99 66).
- ✓ When taking samples, make sure all sampled material is double-packed. Disinfect the outside of the packaging.
- ✓ Follow the site's instructions on the wearing of workwear when leaving the greenhouse. Wash your hands and disinfect your shoes. Take off any disposable coverings and dispose of these and any plastic bags that have been used.

- ✗ Do not visit any other tomato farms or sites on days when you are at your employer's farm or site. Do not bring plant material or fruit onto the farm, including tomatoes from elsewhere in a packed lunch.
- ✗ Only use disposable paper tissues and dispose of them immediately after use. Do not put tissues in your pocket.
- ✗ Do not take a mobile phone, laptop or pen and paper with you into the greenhouse. If you need to take a phone with you into the greenhouse, make sure it is in a sealed and disinfected plastic cover. Disinfect any items you have taken into the greenhouse prior to exiting.
- ✗ No jewellery or watches may be worn in the greenhouse. Glasses should be cleaned with a disinfectant wipe before you enter the greenhouse.

What can I do at my greenhouse?

Strict hygiene measures are the only way to prevent an infection, and minimise spread. Set up and follow a greenhouse hygiene and disinfection protocol for staff and visitors, and minimise who can go into the greenhouse.

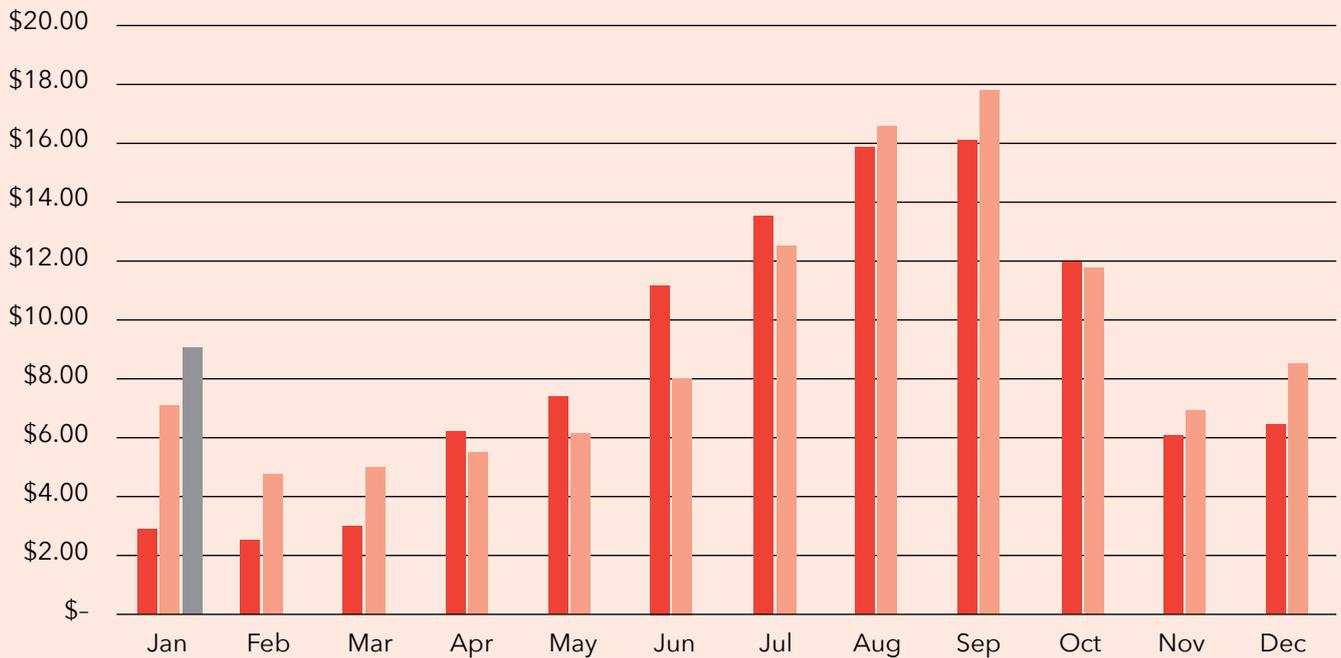
Who can I contact for more information?

Contact us on 0508 467 869 or visit our website www.tomatoesnz.co.nz/biosecurity/. If you think something looks wrong in your greenhouse please contact MPI on 0800 80 99 66.

APRIL 2021

Tomato Price Fluctuation

■ 2021 ■ 2022 ■ 2023





INVESTIGATING OPPORTUNITIES FOR ONION WASTE

Grace Petersen : Onions New Zealand summer student

The 2023 onion growing season has been a challenging one for growers – and an interesting one for me as a new person in the industry. Onions New Zealand has started a project looking at adding value from waste and I was very privileged to be selected as the summer student to undertake this work.

My name is Grace Petersen and I have just completed my Bachelor of Science in Human Nutrition and am about to start my Master of Applied Science in Advanced Nutrition Practice during 2023. Living on a sheep and beef farm in Hawke’s Bay and working for many seasons in a crop monitoring role for the apple industry has provided me with a real appreciation of the value of the horticulture sector to our region and New Zealand.

“

One thing is clear, converting onion waste into an added value product has the potential to increase the resilience of the sector by increasing and diversifying income streams

Understanding added value potential

The Onion Waste Stream Project will complement work for the Sustainable Food and Fibre Futures (SFFF) Humble to Hero programme, which is aimed at differentiating New Zealand onions from those produced in the rest of the world.

The project has been structured using a series of interviews with growers to gain an understanding of the volumes and characteristics of their crops and the underutilised waste that is generated following harvest.



This waste, or unmarketable onions, means growers incur an economic loss for a percentage of their crop. I am currently in the process of finishing grower interviews, collating the information and analysing the results, to understand the potential for added value from those products that are currently waste streams.

New consumer opportunities

Although onion is one of the few ingredients consumed daily in most households, it is typically labelled as a time-consuming ingredient to prepare. Many meals, snacks and sauces require onion as one of the key flavour ingredients, and some consumers now switch the whole onion out for a dried powder alternative. This is an opportunity for New Zealand’s onion growing industry, as onion powder includes the bulb and can also include dehydrated onion skins, leaves and roots.



Onion juice is another solution that the industry could look at for waste utilisation. Thanks to the high amounts of vitamins, minerals and antioxidants, such as vitamin C and quercetin, onion juice has been shown to be beneficial in health aspects such as immunity function, and to fight off inflammation within the body. Other options include a quercetin rich extract derived from onion waste which could be looked at as a nutritional supplement for human health. Quercetin is found in higher concentrations in the onion skin rather than the onion bulb itself, and is known for its many health benefits such as reducing the risk of some cancers and supporting sports recovery and performance.

Grower feedback

It has been very humbling to have growers give me their time in what is a busy time of the year, and a particularly challenging season when the weather has impacted heavily on crop yields and survival. I have really appreciated the fact that growers have still taken the time to talk with me while they have been trying to deal with other issues on the farm.

It has been interesting to understand a couple of the key issues raised by growers. In many cases, growers understand the opportunity inherent in turning waste into a product that has value, but making it a reality is an entirely different challenge. In some cases, it is a cost for growers to have their waste removed into other uses like feed for the livestock sector. One thing is clear, converting onion waste into an added value product has the potential to increase the resilience of the sector by increasing and diversifying income streams.

Growers recognise the opportunities in turning onion waste into a product that has value

Next steps

I am now going to spend some time with the team at Onions New Zealand to understand the information gained from grower interviews and the enthusiasm of growers to do some more work in this area. It is interesting to note that other horticulture sectors are also looking at these types of opportunities and some collaboration may be possible here as well.

Many thanks to all of you that have given your time and insights into my work. I head back to university at the end of February, but I will be working with the team at Onions New Zealand to ensure that the results of my project are communicated back to the sector. I am keen to stay connected with the sector and look forward to seeing further outcomes from my work. ●



LEARNING TO PUT YOUR TRUST IN CROP SCOUTING

Antony Heywood : Vegetables New Zealand Inc. general manager

On 26 January Vegetables New Zealand Inc (VNZI) held a crop scouting workshop at the Pukekohe Demonstration Farm, facilitated by renowned entomologist Graham Walker from Plant & Food Research. Over 40 growers, their staff and support industry people attended the workshop to hear and learn from Graham's extensive 30 years of experience in New Zealand and internationally.

Olivia Prouse and Stuart Davis added their experience to the workshop in the areas of agronomy and other research supporting Integrated Pest Management (IPM) approaches; namely the 'A Lighter Touch' research programme.

The target crop for the day was lettuce, because this was the crop being grown at the Demonstration Farm. Graham's focus was typically on the pests that would damage commercial lettuce production. He was confident that the data to prove that IPM for lettuce was working for growers was sufficient to argue that no grower should be calendar spraying. Moreover, to do so would defeat the IPM balance by destroying the beneficial insect predators. Graham was categorical in his assessment of IPM for lettuce - all you needed was contained on one sheet. Identify three caterpillar pests, know what eats them and then trust in scouting to measure the balance between pest and predators. The key activity for the workshop was to have the growers crop scouting for pests. Understanding the entomology of the pest and then applying that to a decision matrix. Graham was at pains to explain that the grower had to crop scout, crop scout and crop scout.

What was significant from a VNZI perspective was the turnout of growers to the workshop. If this learning and knowledge can be transferred back to the farms, IPM will be alive and thriving in New Zealand growing systems. ●



Entomologist Graham Walker from Plant & Food Research explains crop scouting to 44 growers



Workshop participants crop scouting lettuce at the Pukekohe Demonstration Farm



'UNDERESTIMATED' SLUGS UNDERMINING PROFITABILITY

Ironmax Pro®, the tough 'soft' slug and snail bait, taking back ground for growers

It turns out, slugs are not that sluggish. Mike Goodwin, UPL NZ Ltd Central South Island regional manager, warns the potentially devastating pest is capable of travelling further, and multiplying much faster, than people realise.

With peak slug season approaching, he says vegetable seedlings are especially vulnerable. "Damage to plants can happen quickly. Slugs are a vastly underestimated problem."

Slugs flourish year-round in New Zealand, peaking in autumn and spring. They are capable of producing 300 to 500 eggs in their 13-month lifespan. In the right conditions, populations can explode.

Grey field slugs (*Deroceras reticulatum*) and their close relation brown field slugs are significant pests across a broad range of crops, and are especially hard on lettuces and vegetable brassicas. Mike says if unchecked, they have the potential to wipe out an entire crop.

He says the first step in effective control is monitoring. He advises putting down a slug mat. "Leave it there overnight and check it next morning. One slug per square metre already signals a problem, and action should be taken immediately."

The newest slug protection tool for growers is next generation Ironmax Pro. BioGro accredited, Mike says it is not only gentler on the planet, but it has the efficacy of industry leader Metarex Inov®.

"There's definitely demand for products that are safer for the environment and for people. At the same time, no-one wants to compromise on performance, and Ironmax Pro certainly doesn't.

"The product's low odour and low dust has been welcomed. Growers have noticed there's not that distinctive smell. It's more pleasant to work with, and easier on gear. At the same time, its ability to knock down slugs is equal to the very best."

Ironmax Pro also has a withholding period of just one day.

Ironmax Pro manufacturers, De Sangosse, are global leaders in slug and snail bait technology. The product features their breakthrough Colzactive® technology made up of specially selected rape seed oil extracts. This facilitates rapid detection by slugs and enhances the Ironmax Pro bait's attractiveness, taste, and the speed at which it works compared to other slug baits.

Research shows slugs actively prefer feeding on Ironmax Pro to feeding on seedlings. That enjoyment is short-lived.



Ironmax Pro contains the optimised active ingredient 24.2 g/kg ferric phosphate anhydrous, (IPMax). A natural component of soil, in Ironmax Pro it works as a stomach poison and is fatal once ingested. The slug's digestive gland (a vital organ) becomes overloaded with iron impairing the digestion process and ability to process food. Feeding stops almost immediately.

Manufactured using a unique wet process manufacturing, Ironmax Pro is very rainfast. In addition, it is Integrated Pest Management (IPM) friendly and has limited impact on beneficials, including earthworms and the slug predator carabid beetle. This makes Ironmax Pro an exceptional low hazard environmental solution. Ironmax Pro has excellent ballistic properties and a recommended application rate range of 5 to 7 kg/ha. ●

Talk to your technical representative for further details on Ironmax Pro.





NEW CULTIVATOR BURIES STONES, CLODS AND RESIDUE



ALPEGO Inversa working in stony soil



Soil profile shows stones at the base of the seed bed and fine soil in the seeding zone on top after cultivated with the ALPEGO Inversa

ALPEGO has developed a unique rotary cultivator named Inversa which buries stones, clods and trash leaving only a fine seedbed on the surface. This facilitates seed planting and germination as well as allowing harvesting machinery to work more efficiently and reducing crop damage from bruising during harvest - especially important for root crops.

ALPEGO has achieved this building on their experience manufacturing traditional rotary hoes, by simply reversing the gearbox so the rotor works in reverse, cutting upward rather than downward. The stones, clods and residue are lifted up and over the rotor and placed at the rear of the machine and to the bottom of the seedbed, while the lighter and finer soil is left on the top.

The ALPEGO Inversa IZ model has a maximum 280Hp rated central drive gearbox. This cultivator does not require a large tractor, working perfectly well behind a smaller 120Hp tractor. The gearbox is unique to ALPEGO as it drives the rotor from the centre, unlike traditional rotary hoes which drive from the side. ALPEGO claims this provides a number of benefits such as a lower power

requirement and stronger rotor support (as the rotor is secured at both ends and in the centre.) This also means fewer moving parts so lower maintenance.

The machine is manufactured to a very high standard, constructed using only specialised high tensile steel from Sweden and high-quality bearings and components ensuring performance and reliability, which is endorsed by the manufacturer's two-year full warranty.

The Inversa IZ is fitted with a large-diameter 520mm rear packer roller to consolidate the soil in order to preserve moisture for seed germination. An optional cage roller is also available for heavier sticky soils where consolidation is not required.

The machine Inversa IZ rotary cultivator is already proving its place in specialised cropping applications such as market gardening around New Zealand says OriginAg, New Zealand's importer of ALPEGO. ●

For further information, or to find your nearest authorised OriginAg dealer, visit www.originag.co.nz





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ENZA ZADEN



YOU ARE INVITED

to our leafy trials
in Melbourne
27 & 28 Apr 2023

An opportunity to view, discuss, and taste the wide assortment of Enza Zaden leafy salad vegetables at the Victorian Vegetable Innovation Days, in Melbourne, Australia, 27-28 April 2023.

Enza Zaden has plots of new and commercial lettuce and spinach varieties at the field days, hosted at Butler Market Garden's, 200 McDonalds Rd, Catani, Vic 3981 (South East of Melbourne).

Join our global breeding team in the field to discuss global innovation in lettuce and spinach production. View the latest autumn / winter iceberg varieties like Nolaf, Sancho, Zuloaga, and Pelayo.

Contact Herman van der Gulik 021 858 939 or Aneil Hari 021 367 242 to book a time with our product specialists and breeders during the Innovation days or after the event.

The power of leaf crops

Our varieties help to guarantee year-round supply. Our large product portfolios have excellent pre and post harvest plus complete packages of resistances to the full range to Bremia:16-37, Fusarium and, in spinach, PE 1-19. Our variety programmes help to give answers to issues like plant diseases, mechanical harvest and labour cost.

Resistance makes the difference

Why is resistance so important? Resistant varieties offer advantages to all of the produce chain: they offer advantages to the farmer, reducing the risk of crop losses and provide a higher yield. On the other hand, they benefit the marketers, by guaranteeing quality products with longer life. In addition, they meet demands of consumers who are increasingly looking for healthy and residue-free vegetables.



Enza Zaden are proud to support the Rural Support Trust. The Rural Support Trust helps rural people when times are tough. Their helpline number is 0800 787 254.