



# Planning for uncertainty

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# THE MOST IMPORTANT THING YOU PICK THIS YEAR COULD BE YOUR COVER.

## Proud to support NZ orchardists.

Jono Sutton is a third-generation orchardist based out of the small Nelson settlement of Hope, on the Waimea plains.

Alongside his parents and grandfather, he runs Eden's Road Fruit, which grows a broad variety of apples and stunning New Zealand boysenberries.

"We currently have three varieties of boysenberry along with a variety of apples, including Royal Gala, Red Braeburn, Kanzi, Lady n Red and Dazzle," says Jono.

For Edens Road Fruit, the busy seasons generally kick off from mid-December with the boysenberry harvest says Jono.

"Boysenberry harvesting lasts through to until mid to late January with a few weeks break before our apple picking season starts."

It's both the seasonality of the work and the harvesting of high-quality fruit that Jono enjoys most about his career, which is why he sees a key opportunity for the sector is attracting others into horticulture careers.

"With such an emphasis on healthy eating internationally, we have a real opportunity to leverage New Zealand's fresh image."

Of course, Jono's business isn't without challenges too – the top of mind one being the current availability of staff given the impacts of Covid-19.

Supporting clients like Jono is what FMG is here for and it's great to be here to support clients for long haul. As Jono says, his family has been with FMG for "longer than I've been around".

What Jono values most about FMG is his relationship with his adviser, their approachability and the Mutual's fair approach to insurance.

"FMG are awesome to deal with—they always want to help in your time of need," says Jono.

**Pictured:**  
Jono Sutton,  
Edens Road Fruit Limited

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SEPTEMBER 2020

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# The AGM – just a yearly ritual?

*It's that time of the year. Annual General Meetings are rife and this year for an added twist due to Covid-19 restrictions we are trying to do these by Zoom or webinar, which makes them even more exciting!*

By Barry O'Neil  
President : Horticulture New Zealand



I understand that many of us don't get overly excited about sitting through an AGM, but the reality is an AGM apart from being a requirement by law, is also the opportunity for members to raise issues they want clarified or to suggest the organisation focuses on or deals with differently.

At AGMs we don't always have the discussion in the areas that I am sure many in the audience would want to hear, in order for everyone to better understand the organisation's position. So I thought I should try and cover a few areas that some of you may have questioned or wondered, that may help clarify but also may become a prompt to engage with us at our AGM on 25 September.

Over the last twelve months working with our members and Product Groups we have renewed our strategy to ensure we are concentrating our efforts on the areas that will make the greatest improvements to growing, and then advocating and influencing government accordingly. Our purpose has not changed, to create an enduring environment where growers thrive. I think we have got it right, but feedback always welcomed!

“

**Our purpose has not changed, to create an enduring environment where growers thrive**

We focus on sector wide priorities that all growers benefit from, and promote and advocate for a framework that will enable future horticulture growth, without picking any specific fruit or vegetable winners. We have 21 affiliated Product Groups and they work on the specific needs for their growers, but when we have common issues we try

to work collaboratively, and Horticulture New Zealand often facilitates this process. I personally think we need to be seeing more collaboration as it makes no sense to me why we need to reinvent the wheel.

I sometimes hear from fruit Product Groups that they believe with our Resource Management Act and environmental activities we are putting most of our energies into vegetable growing issues. We try very hard to ensure our efforts are not favouring one sector over another, and to focus on getting the best results for all growers to prosper. Sometimes there will be government policies that are impacting on one area at a point in time more than others, such as with freshwater reforms impacting more on the vegetable sector currently. But to me this will be swings and roundabouts, with future governments bringing no doubt different priorities and areas of focus.

I often hear we are not putting enough effort into labour, and that we are not being hard enough on decision makers and politicians. Labour is without doubt one of the most crucial industry enablers for future success, but unfortunately in a Covid-19 world there are just so many uncertainties. While we were getting close to a Pacific bubble opening, with the resurgence of community transmission this is now not going to happen in the short to medium term, so we are left with big challenges for the Recognised Seasonal Employer (RSE) scheme. We have a great collaborative model working between HortNZ and Product Groups on labour and are proactively engaging with officials and key ministers on RSE and migrant labour policies that will support future industry needs, as well as getting more Kiwis into horticulture. As growers I believe we can be confident that what can be done is being done.

I do not condone that we adopt the behaviour of some others, thumping the table and demanding.

I don't believe this achieves anything other than releasing hot air and encouraging the government decision makers to avoid working with those that act in this way.

I hear sometimes that we are too focused on domestic production and not sufficiently recognising the needs of export groups. HortNZ is not a market access organisation, and during our strategy review we received strong feedback from Product Groups that trade policy shouldn't be a priority for us. Our focus therefore is on enabling growers to do what they do best, grow, without unnecessary burdens and compliance costs. We are agnostic as to whether growers are domestic or export focused but recognise that we do need to feed our populations, and that horticulture is an important part of our economy. Industry and Product Groups must have the customer focus to support their growers supplying what consumers are wanting and needing, whether that be domestic or international.

Sometimes I hear comments that we are putting too much effort into biosecurity, or alternatively not enough. Biosecurity is an area of such importance we are and will continue to be totally committed to policy and resource settings that deliver the best results for the sector. We don't lead on specific pests and pathogens unless asked by Product Groups, but we are absolutely focused on the government providing border and biosecurity settings that manage the plethora of threats to the wider sector. Personally I believe we have too much duplication happening within biosecurity at the moment, and collectively we need to address some of this, for instance whether we can do better than having 15 industry people all turning up in Wellington for a Government Industry Agreement (GIA) administration meetings.

Lastly there are no doubt thoughts about whether the AGM will consider increases in directors' fees. Director fees are not something we as a board have control over, rather we use an independent remunerations committee to make any recommendation on changing fees directly to the AGM for members to vote on. Directors record what activities they perform, including how much time they are putting into their roles, and the independent committee considers this, looks at other like bodies, and also the Institute of Directors fee comparisons, then tries to land on the appropriate fees for these roles. This year due to Covid-19 impacts our directors decided to voluntarily reduce their fees, so no resolution will be put to our AGM on director fees this year.

AGMs should not be a yearly ritual, but rather they are meetings that give us all the opportunity to engage with and give the board of directors feedback and suggestions on how the organisation could be doing even better. They are also the place where new directors are selected or announced, and as such are an opportunity for members to ensure that directors are also very much held to account.

I hope you can participate in our Covid-19 delayed Zoom AGM and look forward to any general business discussion! ●



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# Covid's impact continues

*As I write this column, Covid-19 has again imposed itself on New Zealand; not that it or its impacts had really gone away since our first period of lockdowns earlier this year.*

By Mike Chapman  
Chief Executive : Horticulture New Zealand



The horticulture industry has been engaged in two significant campaigns since 11 August, when the decision was first made to impose Alert Level 3 restrictions on the Auckland region and Alert Level 2 on the rest of the country.

We have campaigned long and hard for independent fruit and vegetable retailers to be allowed to remain open during Alert Levels 3 and 4. We restarted this campaign on 11 August so *all* Aucklanders could continue to have access to fresh and healthy fruit and vegetables.

Not only does up to 60% of fruit and vegetables find their way to the end consumer through independent retailers and other means, such as farmers' markets, but these closures will have a lasting effect on our country's fresh produce supply chains. While we appreciate the need to contain Covid-19, there is also an equally important need for New Zealanders to have access to healthy food. What we need to do is make sure we can achieve both goals.

The second issue has been the operation of the Auckland border: ensuring that essential horticulture workers can get to and from work, and the border movements associated with production can continue.

About a third of New Zealand's fresh vegetables are grown in the Pukekohe hub. The issue here is that the Pukekohe hub straddles the Auckland and Waikato boundary.

We estimate that there are up to 2,000 production border movements each day with many tractors, trucks and workers crossing and re-crossing the border multiple times. While the cost of delays has not been estimated, it would be in the order of thousands of dollars.

While it is significant that the horticulture industry has been one of the few industries to be exempt from Alert Level 3 requirements in Auckland, considerable effort has had to go into ensuring essential horticulture workers

can travel in and out of Auckland without undue uncertainty or delay (delays of up to two hours have been reported).

### New KPIs and HortNZ's AGM

At last year's Annual General Meeting the HortNZ Board were asked to develop some new Key Performance Indicators (KPIs) for reporting back to the AGM on how effectively HortNZ is operating. The first step the Board took working with our staff was to refresh the HortNZ strategic plan. The key change was to develop out of the previous plan four goals, five priorities and a section on how HortNZ works. The KPIs were then crafted based off the new strategic plan, reporting on each of the priority areas: see the opposite page for the KPIs. The Board has named these KPIs the "Warrant of Fitness". This is because they report on the day-to-day business of HortNZ and because they give an assessment of how well HortNZ is performing.

The warrant of fitness KPIs reflect that HortNZ is very much a relationship organisation. This is evident from the valued partnership and advocacy KPIs. It is no accident that HortNZ is based in Wellington where central government is located. A vast majority of HortNZ's work is with government and with the groups that make up the horticultural industry. In many ways this is a facilitation role between industry and government on horticulture wide issues. HortNZ needs to act as the 'canary in the mine' for government initiatives, develop responses working with the Product Groups and District Associations and collectively present a horticultural view to the government. As a horticulture collective we aim to draw on the expertise within the industry to lead the response, and that expertise might not necessarily reside with HortNZ. The combined horticulture sector letter to the Prime Minister supported by all Product Groups asking that under Level 3 lockdown independent fruit and vegetable retailers be permitted to open is a recent example of us all working collectively for horticulture.



## Warrant of Fitness 2020-2021

Priority area	Measure	Rationale
<b>Valued Partnerships</b>	Number of active partnerships between HortNZ and the Government	This will demonstrate whether the Government seeks to actively work with HortNZ
	Percentage of growers who i) respond to the annual survey and ii) rate HortNZ high or very high on the delivering value question	Growers who take part in the survey are actively engaging to provide their thoughts about HortNZ. The percentage who rate HortNZ high or very high gives an indication of the perceived value that HortNZ provides to growers
	Number of Product Groups that have work allocation agreements with HortNZ	Indicates the degree of engagement with HortNZ
<b>Enabling horticulture</b>	Growth in the horticulture sector by i) value and ii) hectareage	Growth is a proxy for the right regulatory and policy settings being in place – one of HortNZ's focus areas
<b>Advocacy</b>	Pick up of HortNZ communications	This measure is not how many media releases or social media postings are made – but rather, as a result of those releases and postings, how many are picked up and repeated
	Number of invitations for HortNZ to participate in discussions at the early stages of policy/regulation development	Measures how effectively HortNZ is working with government departments, agencies and councils, etc
	Number of Product Groups represented by HortNZ in biosecurity meetings	This is an indication of a service provided by HortNZ to product groups that directly reduces duplication
<b>People</b>	Number of people applying for HortNZ scholarships and the HortNZ leadership course	This would be measured year on year to see if we are attracting people into the horticulture industry. If we are successful in this space, more and more people will seek to participate in these HortNZ initiatives
	Number of kiwis placed in work by the Career Progression Manager network	Measures how effective the Career Progression Managers are at attracting and placing New Zealanders in horticulture
<b>Fit for the Future</b>	Number of submissions made to central and regional government enabling growing in the future	Measures HortNZ's work output that is focused on enabling growing in the future



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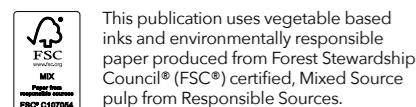
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The Orchardist is produced by Horticulture New Zealand and is free for all levy payers. The Orchardist magazine is partially funded by a grant from the NZ Fruitgrowers' Charitable Trust to ensure all fruit growers in New Zealand receive a copy each month.

The individual comments and views in this magazine do not necessarily represent the view of Horticulture New Zealand.

ISSN: 1173-3802

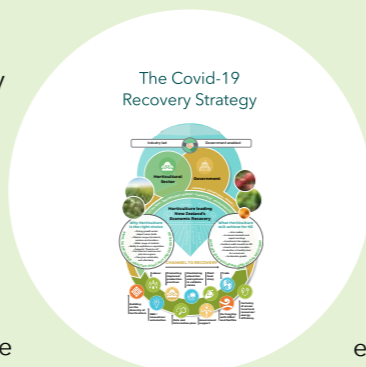


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“the Covid recovery will only be successful if it is industry led, government enabled”

The Covid-19 Recovery Strategy is another good example of HortNZ's facilitation role. This strategy was developed by the Product Groups and HortNZ as a whole of horticulture response to horticulture's and New Zealand's economic recovery from Covid, which has been made all the more difficult due to Auckland's recent community transmission cases. The eleven workstreams that are now being implemented are led by the best people in horticulture and the workstream leaders come from HortNZ and Product Groups. Government is also a key member of the workstreams. This is because through our workshoping it became clear that the Covid recovery will only be successful if it is **industry led, government enabled**.

This leads directly into enabling horticulture and warrant of fitness KPIs. These priority areas encapsulate HortNZ's core work with specific reference to biosecurity, labour supply, upskilling our workforce, health and safety and certification through the GAP (Good Agricultural Practice) schemes. HortNZ's work teams are arranged around these core work activities. But in all of them we reach out to both government and the horticulture groups. This is because HortNZ cannot achieve the success we need for growers without the direct involvement of the Product Groups, District Associations and all growers.



The final warrant of fitness area is focus on the future. This is about expanding the strategic vision for horticulture and preparing us all for challenges and emerging risks. Our collective Covid response is a prime example. The Product Groups and HortNZ are meeting weekly, and during Level 2, 3 and 4 lockdowns daily, with government as required to sort out current and future issues as we transition (hopefully) out of Covid.

A report on progress with HortNZ warrant of fitness KPIs will be made at the AGM on 25 September in Pukekohe and published in the magazines. Covid is making this AGM somewhat shorter than normal and it may have to be run completely by Zoom. Even if we hold a physical present meeting in Pukekohe, we will Zoom the meeting to those who cannot make it. On the same afternoon Vegetables NZ, Onions NZ, TomatoesNZ and NZGAP will be holding their AGMs as well. Also, the day before the Agroecological Crop Protection research programme will be giving an update on their progress. Closer to the time we will advise what we are doing with all the AGMs and pass on the advice from the Agroecological programme as to what will be happening: all Zoom or a mixture of present in person and Zoom.

The Covid-19 Recovery Strategy is available at [www.hortnz.co.nz](http://www.hortnz.co.nz)

# Lockdown déjà vu

Level 3 lockdown brought up a number of issues for growers and some independent fruit retailers in Auckland.

By Glenys Christian

At the start of lockdown some growers were spending from one to two hours in traffic queues just to get to production sites around Tuakau and Pukekohe, said Pukekohe Vegetable Growers Association (PVGA) president, Kylie Faulkner.



some issues getting the necessary supplies of some vegetable lines they needed because harvesters had to be spaced out. And some stores were having trouble displaying QR code posters as required to link customers to the government Covid-19 tracing app.

Not only were they being delayed because of heavy traffic flows but they were being questioned on their documentation. While the Ministry for Primary Industries (MPI) had applied for an exemption for horticulture, it was only approved by the Ministry of Health late on Sunday night, over four days into the lockdown.

ACT Leader David Seymour once again campaigned against what he called arbitrary and unfair rules under which supermarkets, petrol stations, dairies and pharmacies were able to trade but greengrocers, butchers and bakers could not, which brought on a sense of déjà vu. One fruit and vegetable store he described as iconic in his Epsom electorate, "has simply given up and closed under the current rules".

And for some independent fruit and vegetable retailers it was a replay of earlier in the year when they were unable to open, or in some cases closed down by the police.

"Forcing people to travel further to visit a smaller number of bigger and busier stores undermines the goal of stamping out the virus," he said.

Mike Lum from Jack Lum's in Clonbern Road, Remuera, said this time they were able to operate without contact with customers. "We're giving it a go," he said. But he estimated sales were still well down on normal levels by around 30%. "People buy with their eyes," he said.

Common sense rules should be put in place to allow a wider range of businesses and services to open on the basis of whether it was safe for them to operate rather than whether they provided an essential service.

"Ninety-nine out of a hundred don't have a shopping list."

Auckland Business Chamber chief executive, Michael Barnett, echoed his comments, saying there were a large number of firms that could comply with Level 3 conditions and should be allowed to open.

Fruit World's financial controller, Lindsay Hotham, said based on the knowledge its stores had gained in the last lockdown they were all able to open. But there had been

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# YOUR LEVY AT WORK

INDUSTRY WIDE ISSUES FOR INDUSTRY GOOD

## Natural resources and environment



### Air

#### Review of NZS8409

The Standards Development Committee are undertaking a review of NZS8409:2004. These national standards set good management practice for the transportation, storage, supply and use of agrichemicals. They are often referred to in (or applied directly by) regional council air quality regulations. The draft standard is anticipated to be finalised end of August 2020 and feedback will be sought in September or October. HortNZ is working closely with Product Groups and experts to ensure a workable outcome.



### Water

The government finalised the Action for Healthy waterways reforms with the delivery of the National Policy Statement for Freshwater Management 2020 (NPSFM 2020), National Environmental Standards for Freshwater (Freshwater NES) and new water metering regulations, which come into force from the 3 September 2020.

#### NPSFM

The new National Policy Statement for Freshwater Management (NPSFM) sets out a revised framework for freshwater management (requiring limits and minimum flows and so on to be set). Regional councils must notify a freshwater plan no later than 31 December 2024 to give effect to the NPSFM 2020.

Of note, it includes specific recognition of defined areas of vegetable growing in Pukekohe and Horowhenua. This allows a regional council to set a water quality target below a national bottom line, however water quality must still be improved. This policy applies for a period of 10 years, or until a vegetable specific National Environmental Standard is introduced.

#### Water regulations

The new Freshwater National Environmental Standards include provisions of relevance to horticulture which apply in relation to activities in and near natural wetlands and other activities in rivers.

Amendments to the Measurement and Reporting of Water Takes Regulations introduce the requirement to measure water take in each 15 minute period and to provide daily electronic records to regional council. The regulations only apply to consents to take five litres or more of water per second. There is a phased implementation period (applying to larger users first). The first compliance deadline is 3 September 2022.



### Land

#### Biodiversity Strategy

Te Mana o te Taiao - Aotearoa New Zealand Biodiversity Strategy 2020 provides the overall strategic direction for biodiversity in Aotearoa New Zealand for the next 30 years.

HortNZ sought feedback on the strategy from Product Groups and District Associations, and provided comments on the proposed strategy in September 2019.

HortNZ supported the overall vision and sought recognition of the importance of ecosystems services in supporting food production. These values are recognised within the strategy: *Our international brand and domestic tourism, our resilience to climate change, the health of our fisheries, forests and productive soils - these are all dependent on the ecosystem services provided by healthy nature. There are also cultural, social and human health benefits that need to be recognised and considered as part of the value of nature.*

#### Otago Plan Change 7 (water abstractions)

The Minister for the Environment used his powers to 'call in' this Plan Change. This means that there are no appeals, other than appeals to the High Court on procedural matters.

Plan Change 7 (PC7) proposes an objective, policies and rules that manage the replacement of deemed permits (also known as mining privileges) expiring in 2021 and any other water permits expiring prior to 31 December 2025 (the date by which a new Regional Land and Water Plan is expected to be operative). The Plan Change also introduces a new policy regarding the duration of new water permits.

PC7 was previously notified by the Otago Regional Council earlier this year. HortNZ lodged a thorough submission at that point. Due to legal obligations, the Environmental Protection Authority (EPA) has re-notified PC7, along with PC8 and PC1. However, all submissions lodged will be considered with equal weight and therefore HortNZ will not be lodging an additional submission.

#### Waikato Plan Change 1 Appeal (water discharges)

The independent panel's decision on the Waikato Plan Change 1 Appeal has been accepted by Council, and was notified in May.

The decision had positive elements, recognising the importance of vegetable growing and allowing for some expansion of vegetable growing. However, there are some practical constraints with some of the proposed provisions.

The Plan provides a permitted pathway for fruitgrowing, but requires vegetable growers to gain consents. It requires certified and audited Farm Environment Plans for all activities.

HortNZ lodged an appeal in July following a series of meetings with growers and Product Groups to refine and communicate appeal points. The key points of the HortNZ appeal are as follows:

- Ensuring vegetable rotation can occur across multiple properties and between sub-catchments.

- Enabling low and moderate nitrogen leaching vegetable production to expand without any area limits.
- Enabling high leaching vegetable production to expand within more sub-catchments than provided in the version of the Plan Change upon which decision was made.
- Changes to ensure certified sector schemes can effectively manage and audit farm environment plans.
- Changes to provide more flexibility in the format of Farm Environment Plan maps.

Pukekohe Vegetable Growers Association (PVGA) has determined to lodge its own appeal in order to broaden opportunities for discussion in mediation. The PVGA appeal aligns with HortNZ's appeal.

#### Horizons Plan Change 2 evidence (water discharges)

HortNZ and growers have attended pre-hearing conferencing where we strongly advocated that commercial vegetable growing should be recognised with its own policy and rules framework, particularly due to importance of the vegetables grown in the region for domestic food supply, and because of the diverse range of crop rotations, and the need to rotate crops to support soil health.

The HortNZ submission will be supported by economic, farm systems, water quality, planning and legal experts. These experts that have been participating in expert witness conferencing.

HortNZ is working with Potatoes NZ which has its own submission on the Plan Change focused on presenting recent evidence that demonstrates that potatoes grown in pasture rotations could expand in area without increasing water quality impacts.

HortNZ is also working closely with Vegetables NZ, NZGAP (Good Agricultural Practice) and Tararua Growers Association to support vegetable growers in Levin to develop robust Farm Environment Plans, using the Environmental Management System developed by NZGAP. In giving evidence, the HortNZ team will explain the benefits of a collective approach to farm planning. ●



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## 2020 HortNZ AGM – Notices of Motion

The following motions will be considered at the Horticulture New Zealand Annual General Meeting (AGM) being held at the Pukekohe Indian Centre, Pukekohe, Auckland on **Friday 25 September 2020 at 12.30pm** and by Zoom for members unable to get to Pukekohe.

### → Motion 1

**That the minutes of the 14th AGM of Horticulture New Zealand (HortNZ), held on 1 August 2019 at Mystery Creek be taken as read and confirmed as a true and correct record of that meeting.**

*Proposed by the HortNZ Board*

#### **Explanatory Note**

A PDF of the Minutes of the 2019 AGM is available at [www.hortnz.co.nz](http://www.hortnz.co.nz). If you have any questions or would like hard copies, please email [board.secretary@hortnz.co.nz](mailto:board.secretary@hortnz.co.nz)

### → Motion 2

**That the President's and CEO's Report for the financial year ending 31 March 2020, as published in the Annual Report, be taken as read and adopted.**

*Proposed by the HortNZ Board*

#### **Explanatory Note**

A PDF of the Annual Report will be available at [www.hortnz.co.nz](http://www.hortnz.co.nz). If you have any questions or would like hard copies, please email [board.secretary@hortnz.co.nz](mailto:board.secretary@hortnz.co.nz)

### → Motion 3

**That the audited financial statements for the year ended 31 March 2020 be adopted.**

*Proposed by the HortNZ Board*

#### **Explanatory Note**

A PDF of the Annual Report and Financial Statements will be available at [www.hortnz.co.nz](http://www.hortnz.co.nz). If you have any questions or would like hard copies, please email [board.secretary@hortnz.co.nz](mailto:board.secretary@hortnz.co.nz)

### → Motion 4

**of the price received after the deduction of all offshore costs and for processed sales remain and be set at 0.14% of the notional process value.**

*Proposed by the HortNZ Board*

#### **Explanatory Note**

The Commodity Levies (Vegetables and Fruit) Order 2019 allows a maximum rate to be set for vegetables and fruit at 0.15% for domestic sales and processed sales taken at the first point of sale and at 0.15% for export sales at the first point of sale after all offshore costs (including international freight) have been deducted. For processed vegetables and fruit the levy is deducted from the notional process value, which is defined in the Order. At the AGM levy paying growers may set any rate up to the maximum for the next calendar year. The current rate for vegetables and fruit is 0.14%. This levy funds the activities of HortNZ. The Board recommends that the levy rate be set and remain at 0.14% for the 2021 year to meet the commitments identified in HortNZ's Budget.

**That there be no change to the directors' remuneration for the 2020/2021 year.**

#### **Explanatory Note**

The HortNZ Directors requested a 20% reduction to their fees for six months from 1 July 2020 to December 2020. The Directors also requested their remuneration be held at the current rate for this financial year. Therefore, no change to the directors' remuneration is being proposed and there is no motion.

### → Motion 5

**That the Budget for the year ended 31 March 2021 be endorsed.**

*Proposed by the HortNZ Board*

#### **Explanatory Note**

A copy of the Budget for 2021 is available at [www.hortnz.co.nz](http://www.hortnz.co.nz)

Te Mana o te Taiao is a visioning document that is intended to be implemented through various means, including national policy as well as policy and rules within the regional and district Plans, that impact on the protection and restoration of biodiversity. An implementation plan will be released in 2021.

HortNZ also submitted on the proposed National Policy Statement for Indigenous Biodiversity (NPSIB) earlier this year. The government is still considering submissions. The timeframe for the delivery of the NPSIB has been extended until April 2021.



## Climate Change

The recently passed Resource Management Amendment Act 2020 made changes to the ability to consider climate change as part of Resource Management. This aligns with the evolution of broader climate change policy, including the policy goal to transition to net zero carbon emissions by the second half of the 21<sup>st</sup> Century.

This means that from 31 December 2021:

- the sections of the Resource Management Act which prevented Councils from being able to consider the effects of discharges of greenhouse gases on climate change will be removed and

- councils must have regard to emissions reduction plans and national adaptation plans (prepared under the Climate Change Response Act) when making or amending their regional or district plans.



## Regional and District Policy

### **Hawke's Bay TANK Submission**

(water abstractions and discharges)

HortNZ has made a submission on the TANK plan in August. This is the Regional Resource Management Plan to manage water quality and quantity for the Tūtaekurī, Ahuriri, Ngaruroro and Karamū (TANK) catchments.

The development of the submission was informed by meetings with the Primary Sector, Product Groups, Hawke's Bay Fruit Growers, Hawke's Bay Vegetable Growers Associations, and grower meetings.

We are working with growers and NZ Apples and Pears, NZKGI, Zespri, Summerfruit NZ and Process Vegetables NZ to progress Farm Environment Plan (FEP) case studies to aid our evidence. HortNZ will present water quality, hydrology, farm systems, economic and planning evidence to support the HortNZ submission.

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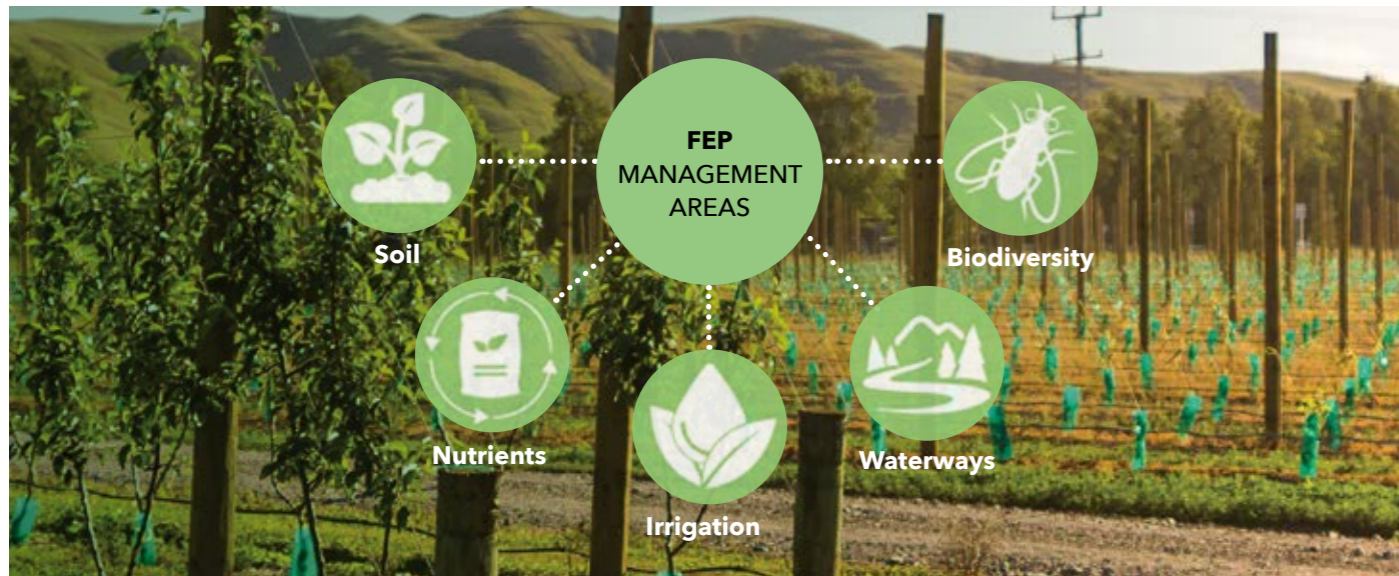
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Damien Farrelly

## Farm Environment Plans in horticulture

*A Farm Environment Plan (FEP) is a tool used to support growers to assess their environmental risks, take action where required, and demonstrate progress on environmental objectives. The objective of FEPs is to minimise the impact of horticulture and farming on the ecological health and amenity value of New Zealand's waterways. In addition to farm maps, an FEP includes the management areas shown above.*

By Damien Farrelly : NZGAP and Food Safety Manager, Horticulture New Zealand

In the near future, agricultural emissions (e.g. nitrous oxide from fertiliser use) are also likely to be included in FEPs to support growers with meeting the Zero Carbon Act 2019 and He Waka Eke Noa (a primary sector partnership to reduce on-farm agricultural emissions).

Growers and the horticulture industry are already very familiar with Good Agricultural Practice (GAP), and an FEP is essentially an extension to this existing assurance system. The primary focus of NZGAP and GLOBALG.A.P. certification is food safety risk assessment and management. While there are elements of environmental management in these standards, they do not currently

meet the extensive New Zealand regulatory expectations for FEP content and implementation.

As a result, NZGAP has developed the Environment Management System (EMS) add-on with the purpose of supporting growers to meet regulatory expectations for an FEP as an extension to their existing GAP system. The Good Management Practices (minimum requirements) and Best Management Practice (aspirational environmental outcomes) identified in the EMS are incorporated from relevant industry guidelines and Codes of Practice, which have been developed from evidence-based research and have been tested with New Zealand growing systems.



In a similar way to how NZGAP is benchmarked to and recognised by GLOBALG.A.P. and the Food Act 2014, the EMS add-on has been benchmarked to regional and national FEP requirements and is already formally recognised by Environment Canterbury.

This means that growers can meet multiple market and regulatory outcomes via the one NZGAP integrated assurance system. NZGAP is now seeking to integrate data from the development and implementation of FEPs into reports for growers, catchment groups and industry bodies to support telling of the horticulture story via our 'joining the dots' framework.

For more information on FEPs and the EMS, visit [www.nzgap.co.nz](http://www.nzgap.co.nz).

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TRACTORS & EQUIPMENT





HortNZ has produced a pan-sector guidance booklet to help growers prepare a farm biosecurity plan. The guide is designed to help you identify and prioritise biosecurity risks relevant to your property and understand how you could take action to address the identified biosecurity risks.

The guidance booklet outlines and explains the five key steps to preparing and implementing a biosecurity plan for your farm or orchard. These steps are:

STEP 01	Review property map
STEP 02	Identify biosecurity risks and mitigating actions
STEP 03	Prioritise
STEP 04	Communicate expectations
STEP 05	Implement actions

For details view the full guidance booklet – contact us at HortNZ if you would like to be sent a hard copy, or download a PDF from the website ([www.hortnz.co.nz](http://www.hortnz.co.nz)). For further biosecurity risk management information and resources contact your industry body in the first instance. ●



# Have you got an on farm/ orchard biosecurity plan?

*The whole horticulture sector benefits from the adoption of good on farm/orchard biosecurity practice.*

By Anna Rathé : Biosecurity Manager, Horticulture New Zealand

The New Zealand horticulture industry is fortunate to be free of many of the damaging pests, pathogens and weeds that growers overseas have to manage on an ongoing basis. Adoption of good on farm or orchard biosecurity practices is critical for the continued success of the horticulture industry. These practices can help to:

- prevent new pests, pathogens and weeds from establishing in New Zealand
- reduce the spread of pests, pathogens and weeds to new areas
- prevent pests, pathogens and weeds being introduced to your property
- aid management of pests, pathogens and weeds that are already here.

### Why do you need a biosecurity plan?

The best defence for your property against biosecurity threats such as pests, diseases and weeds is to have sound biosecurity practices in place – this will help to protect your farm, your orchard, and your future.

Creating a biosecurity plan for your property is a good way to understand your on farm biosecurity risks and identify simple but effective everyday biosecurity practices to manage these risks. The practices you select will be unique to your property, production method, and the surrounding environment. Good practices don't need to cost a lot of money, but they do need to be clear and easy to follow. Once put in place they will likely provide ongoing day-to-day benefits, and will be invaluable if a biosecurity event were to happen.

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# Cards promote hort careers

*A group of Tasman Year 13 students have created a card game about careers in horticulture that has come up trumps, with packs of cards being taken up by schools around the country.*

By Anne Hardie

The five Waimea College business studies students had to find a gap in the education system and come up with a solution, which led them to the lack of information about careers in primary industries. They focused on horticulture, working with the industry to find out what was needed, then using a survey to gather information from Year 8 to 10 students about the way they liked to learn – which wasn't lectures or reading screeds of text.

An app was the first thought, but students could easily be distracted by other options on their phones. So they turned to cards, following the typical top-trumps type of game, then tested the game on that age group in schools.

One of the team members, Emma Fox, says the reason they chose that age group was because they wanted to get students thinking about career options before they reached NCEA (National Certificate of Educational Achievement) levels.

"When you get to NCEA levels, you choose the subjects you will want as you get older, so we wanted to influence them before that."

Moab Heynekamp, also part of the creative team, says their research showed the younger students needed to get as much exposure as possible to potential careers in the primary industries for them to make those subject choices later.

A pack of cards is made up of 40 different jobs in the horticulture industry and each gives the job's salary potential, length of training, hands-on level and rates its job opportunities. The card then gives a short description of that career. The graphics were designed by the team's graphic whizz, Toby Collett. Up to five people can play the game together and in the classroom setting, it's designed as a fun way to learn about the wide range of careers in the industry that go beyond the image of simply picking fruit.

Bree Anderson admits they didn't know most of the horticulture careers outlined on their cards even existed and that is typical for their age group. Such as a career as a geneticist studying the role that genes play in disease and health. In their survey among students, more than 70% did not know what primary industries meant and what they involved.



The card game creators; Toby Collett (back left) and Moab Heynekamp, with Emma Fox and Bree Anderson. Nadia Cregeen is absent.

“it's a fun way to learn about the wide range of careers in the industry”

"For us, seeing all those jobs in horticulture opens up those pathways in the future."

Their business group is part of the Lion Foundation Young Enterprise Scheme which is an opportunity for budding entrepreneurs to experience the start-up world first hand and run a real business.

The card game has excited the GoHorticulture careers team at HortNZ which has financially partnered the business enterprise. GoHorticulture will now take the orders for the cards and distribute them, working with CATE (Careers and Transition Education Association NZ).

Within the first week the cards were made available, Nelson Tasman Careers Progression manager, Robyn Patterson, says 400 orders were received from schools around the country. ●

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Left to right: Ocean Koro, Huhana Lyndon, and Pita Tipene in Ngāti Hine Forestry Trust's Ahuareka Orchard near Kerikeri

## Young talent

Young talent and gold kiwifruit for Ngāti Hine Forestry Trust.

By Wendy Laurensen

After working in kiwifruit orchards and packhouses in Kerikeri for two years, Ocean Koro was ready to leave her job – and the industry. “Then my manager said I should apply for one of the two Seeka cadetships that year. So I did. I decided if I got accepted I’d stay and if not, I’d leave the industry. I got it, so now I’m in my second year of the three-year cadetship and really enjoying it. There’s lot more to the kiwifruit industry that I realised.”

The cadetship aims to train young people to become future kiwifruit industry managers and to show them that the industry offers a diverse range of management options. “We’re introduced to all aspects of the industry,” Ocean explains, “from orcharding techniques like pruning, thinning and vine training, and then to packhouse, coolstore, marketing and other operations.”

Ocean says it’s very satisfying watching a crop develop throughout the year and then to see the outcome both in the packhouse and on the spreadsheets. “There are so many orchard variables and it’s interesting working out what impacts the results.” But her interest in the industry surprises her. “I didn’t ever want to be in the kiwifruit industry. Mum was a supervisor in kiwifruit orchards so I was brought up

around orchards, and back then we all saw orchard work as a dead end track. So it’s a real surprise to now realise horticulture can be a career not just a job.”

“...a real surprise to realise horticulture can be a career not just a job

Huhana Lyndon, chief executive of Ngāti Hine Forestry Trust, is keenly supporting Ocean’s progress. “Our trust has now diversified into owning five kiwifruit orchards in Kerikeri and Waipapa, all of which are leased out to Seeka on a profit share basis, and Ocean has been working on our orchards. We’re excited that Seeka has recognised Ocean’s talent. She is a young Māori woman with academic rigour and the drive to go higher in the industry, and she is also personable and confident. She’s a firecracker and will be a great role model for our young people.”

Huhana has a background in both industry training and tertiary education so she is also now part of HortNZ’s Northland Governance Group and the Women in Horticulture Bay of Islands Group.

“The primary industries are competing right now to attract talent into our sectors, so we’re in the process of lifting the image of horticulture and redefining what’s possible, especially for women. We need to sexy it up and lift the bar so that it’s more appealing to a wider range of people.”

Huhana says a lot of local people, including their iwi, are already employed by Seeka on orchards and in the packhouses, and during lockdown this increased significantly because some of Seeka’s usual workers weren’t available. “Our locals really enjoy their work and pay there, but part of my role is to encourage some of our people into management and research. There is such a plethora of opportunities in horticulture now, so I’m actively looking for talent to elevate.”

Huhana says she is also part of the move to demystify horticulture, technology and research with programmes like the Plant & Food Research School Gateway Programme which gives students hands-on work in the Kerikeri research orchard amidst a research context. “We want to develop our own iwi workforce capability and I’m in the process of seeking out talent that may be working in other industries down the line, and attracting them home. There are a lot of gems out there and we can grow what we’ve got by transferring skills across industries. As an iwi, we’re people-rich and we have a good asset in our whenua, so we simply need to upskill and improve our land management.”

Ngāti Hine Forestry Trust’s chair, Pita Tipene, says, “We are a fast-growing Māori land trust and we want to diversify and grow our assets for both commercial and social reasons, so we have chosen to invest in kiwifruit in the Kerikeri area. We’re learning so much from industry leaders and consultants and we’re developing excellent working relationships. We now have licences to convert the last two of our orchards to G3 (gold) kiwifruit, so we’ll have an estimated 416,000 trays of G3 when all our five kiwifruit orchards are in production in 2023.”

Meanwhile, with encouragement from Seeka, Ocean has started applying for orchard manager roles. “Even to apply feels surreal because I am young and I realise a manager position would curb my social life, but I’m used to responsibility because I raised my siblings. I also love listening to and learning from the stories of people who work in the industry.”

And Ocean is ambitious. “I want to push to lift my own achievement. After some managerial experience I’d like to become the manager of all five of Ngāti Hine Forestry Trust’s orchards, then my ultimate dream is to be the regional orchard manager. I also want to encourage other young people into training and guide them on their learning journey. I’ve had a lot of help to get to here, and I love teaching, so I want to help others get into the industry and realise what they’re capable of.” ●

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# Helping women back into work

*The economic impacts of Covid-19 have been disproportionately hard on women, who account for 90% of those no longer employed, according to Statistics New Zealand's June quarter labour market statistics.*

By Elaine Fisher

**Employment fell 0.4% over the period, which equated to 11,000 fewer people in paid employment. Of those, 10,000 were women.**

With retail and hospitality industries which traditionally employ significant numbers of women hardest hit by the downturn that's not entirely unexpected, but one Horowhenua horticultural company has an employment plan designed to keep women in work.

Emma Clarke, sales and human resources manager and director for Woodhaven Gardens and Women in Horticulture member, says three years ago the Levin based family business set out to attract more Kiwi staff, women in particular.

"We also wanted to reduce our reliance of RSE (Recognised Seasonal Employer) scheme workers and those on working holidays. As a former solo mum myself I know how important flexibility in the workplace is for mothers, so we set about designing a plan which would suit women and give them the opportunity to come off the domestic purposes benefit and earn more."



Emma Clarke (centre) with two of Woodhaven's staff Leah Hapi and Leandra Duivenvoorde, and Cooper, aka Cooperdoodle the dog

Together with Work and Income, Woodhaven also helped the women arrange paid childcare for holidays.

Among the first questions asked by Woodhaven when employing staff, is what their family commitments are. "If they need to be able to drop children at school and pick them up, then we find roles for them, usually in the packing shed, to give that flexibility."

Key to the plan working is good communications between staff and employer. "We need to know each day how many staff we will have. We have a core of staff who start work at 7am and are here all day, supplemented by those who come a little later and leave earlier."

"Around half of our 225 employees are women and because of the flexibility arrangements we probably have 20% more staff than would be needed if all were full-time.

"However, our mums are great workers and give 100% while they are here. I would rather have that commitment and speed for five hours a day than not have them here at all.

**“our mums are great workers and give 100% while they are here**

"Providing flexibility and a supportive workplace is also essential to helping women back into the workforce. "If you have been out of employment for some time, it's not easy to go back to working five days a week. Some women have also lost confidence in themselves and that needs understanding."

The loyalty engendered by Woodhaven's approach to giving women new opportunities is rewarding, says Emma. "At Christmas when we are very busy, some staff have paid extra for childcare so they can work longer hours or more days. Some of the women have also gone on to become leaders and trainers in our business.

"The teenage children of several employees now work for us during school holidays, learning a good work ethic

and helping their families. We have also seen strong friendships grow among our mums, providing a support network for them outside of work."

During Covid-19 lockdown many of Woodhaven's women employees had to stay home to care for children, but their roles were replaced by university students looking for work.

"My brother Jay Clarke saw the risks of Covid-19 coming before anyone was talking about lockdown and imported a full range of PPE (personal protective equipment) from China, so our staff had the best protective gear, which we needed because we couldn't keep them apart."

Woodhaven is not just a leader in equal opportunity employment. It is the 2020 Regional Supreme Winner in the Horizons Ballance Farm Environment Awards, run by the New Zealand Farm Environment Trust. Winning the award was a highlight for Emma, her father John and brother Jay. "It was a major recognition of all we are doing to reduce our environmental footprint," says Emma, who grew up on the farm and returned full-time to Woodhaven in 1999 after completing a commerce degree at Massey University.

"I have a passion for the environmental side of our business. We were the seventh company in New Zealand to sign up to NZGAP (Good Agricultural Practice) and while it's important for our business to be seen to do the right thing, I also think you should do it from the heart regardless, in order to leave the business in a fantastic place for the next generation."

Woodhaven Gardens is a family business established in 1978 by Eric and John Clarke. It is unique for its size and crop diversity - 23 different vegetables, plus maize and ryegrass to improve soil health and reduce nutrient losses. Annually, they sell 27 million individual vegetable units, which is about 10% of the national supply, and contribute between \$30 and 35 million to New Zealand's GDP (gross domestic product).

Woodhaven has significantly invested in reducing its environmental impact, adopting a science-led approach that balances conservation with commercial success. The Ballance award judges said major changes to farming practices have resulted in a significantly reduced environmental footprint, with further improvements ongoing.

"Woodhaven is a leader in research for the vegetable industry - contributing time, money and land in order to measure and provide evidence. This large-scale fresh vegetable growing operation is driving change in environmental sustainability."

Judges commended the Clarkes for shifting production areas in order to reduce nitrogen loss and minimise the impact on water quality.

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# YOUR INDUSTRY

ACROSS THE SECTOR — ACROSS THE COUNTRY

Planning for  
uncertainty

Page 23



Above: Simon Easton with Keinge Laulotu from Tonga

## Planning for an uncertain labour force

*Simon Easton would usually have up to 14 RSE (Recognised Seasonal Employer) scheme workers through winter for pruning, but this year that doubled due to Covid-19 and now there's the uncertainty about what happens next.*

By Anne Hardie

**On the Mariri apple orchard in Tasman, there wasn't enough work to keep all his Tongan RSE staff employed through winter when Covid-19 quashed their plans to return home. He was able to find work for some of them on vineyards in Marlborough, while six women had no work for several weeks. Some of those remaining on the orchard did jobs such as planting natives, and those without work were given food vouchers from the Red Cross.**

"The orchard has never looked tidier. We've weed sprayed everything to within an inch of its life, but there is a cost."

It has also entailed considerably more management, especially looking after the ongoing welfare of the RSE workers through a stressful time.

The unplanned winter has been hard on the RSE workers who he says have missed home and family, with boredom setting in for those not working. Now, depending on what happens

with Covid-19, many would like to go home before this coming apple season but there's the uncertainty of whether they can go home or if they will be allowed to come back.

“

**there's the uncertainty of whether they can go home or if they will be allowed to come back**

"The biggest decision we've got to make is whether the boys want to stay on and not go home until after thinning, then come back a couple of months later. Or stay through to picking.

"The issue we are going to have is making sure we can give them work, or work in other horticulture businesses."





It's been a long time away from home for RSE workers

He says it has highlighted the fact that the seasonal employment scheme is appropriate for the seasonal demand in the industry. Looking ahead to the coming harvest, filling that seasonal labour demand has Simon and other growers scratching their heads to come up with solutions.

**“Plan A** is that we get to the end of September and the New Zealand government has a Tongan bubble and we'll let them go home and come back when we need them.

**“Plan B**, we keep them here through to Christmas and picking. But if they go through to next year, it will be a year and a half until they go home.”

**“Plan B, we keep them here through to Christmas and picking. But if they go through to next year, it will be a year and a half until they go home**

If there's one thing certain about Covid-19, it is that it continues to create uncertainty and cause chaos. After talking with Simon on a Tuesday after the country had gone 102 days virus free, the government announced that night that the virus was back. Things change quickly with Covid-19.

If RSE workers stay in the country through to harvest, there's still going to be a large shortfall in seasonal labour

to get the crop off the trees and Simon isn't convinced Kiwis will fill that hole. He has had just one local woman applying for a job through winter - and she got one.

“So I think the government has to be very careful about saying it isn't a big deal if RSE workers don't come back. There might be some (Kiwi) workers out there, but are they suited for thinning, picking and pruning?”

**“There might be some (Kiwi) workers out there, but are they suited for thinning, picking and pruning?”**

He says tertiary students are a sector for the industry to focus on for apple thinning, with the local Motueka Fruitgrowers Association suggesting an advertising campaign at universities and other tertiary institutions to attract students for thinning work through November and December.

AgFirst Nelson consultant Craig Hornblow says apple thinning is when the industry will feel the real labour pinch and that shortage will have a big impact on spray thinning. Growers will find that hard to do and may have to prioritise varieties, but it will help offset a shortage of labour. He suggests growers will also be focusing on more detail at pruning to reduce the amount of labour required, and another option is hand-thinning blossom to reduce the need to thin the fruit crop later.



Keinge Laulotu has had a prolonged stay in New Zealand

“It means they can start their thinning earlier. It's more expensive but they can get some of their work done earlier.”

Growers will use different strategies to deal with the crop as they all have different situations and he says it will be a balancing act with yield and quality.

He says several growers in the region are considering using platforms this season to make their orchards more attractive to the smaller pool of labour as well as increase efficiency.

“With that, there is a time delay and a massive outlay in investment as well as getting people up to speed.”

But he says it's another option to help deal with the uncertainty of managing a crop through the Covid-19 restrictions at our border.

“It's 200 to 300 hours per hectare for thinning and 500 to 600 hours for harvest and we have to work out how we do that. Harvest will start mid-February - that's the one certainty.” ●

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# Taking a closer look at traceability

By Glenys Christian

**Reliable, robust traceability systems are no longer an optional extra in the produce industry, but a baseline requirement of increasing importance.**

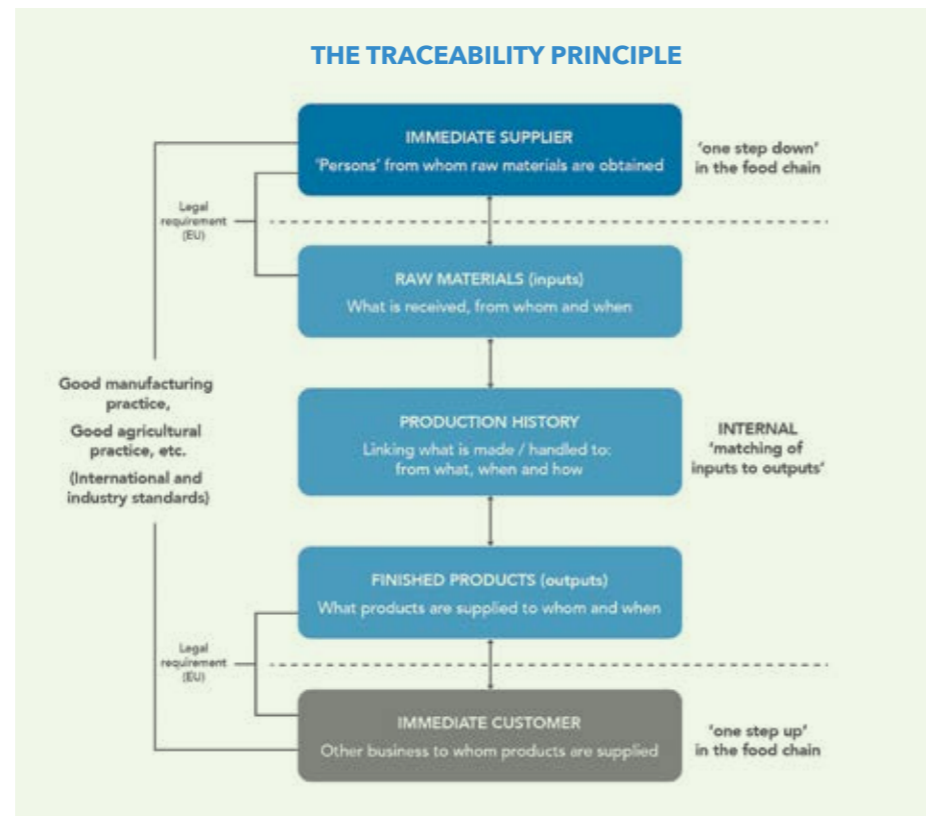
So since September 2018 United Fresh has been working on and managing a Ministry for Primary Industries (MPI) Sustainable Farming Fund (SFF) project on effective fresh produce traceability systems, and has recently released a set of draft traceability guidelines as an industry consultation document. Comments need to be received by October 15.

Ineffective or non-existent traceability systems present challenges for growers, packers, marketers, retailers and ultimately consumers, as was shown in the 2013 Fonterra whey protein scare. And with the incidence rate of foodborne illnesses attributed to fresh produce rising worldwide, there's an increased need for there to be effective and robust traceability systems. With the New Zealand produce industry worth over \$6 billion annually, traceability systems need to match a global reputation for quality.

At the moment traceability in the New Zealand domestic produce supply chain is not working to a common standard.

Anne-Marie Arts, United Fresh project director, said much of their focus has been on how tracking can be shared between each step of the supply chain and across all categories.

"We know that traceability in the New Zealand domestic produce supply chain is not working to a common standard, since each supply chain



Above: a "one-up, one-down" example. Details are available in the Consultation Document (p10).

varies in its management of internal and external traceability, with external traceability working well in some cases, or not at all in others," she said.

"Sophisticated shoppers as well as national food safety guidelines are providing strong impetus for the fresh produce industry to refine its systems."

Internal traceability covers the methods, procedures and elements needed for tracking and recording data within a company's processes. And external traceability refers to robust methods put in place to share data between companies making up the supply chain, which relies on cooperation between supply partners. At the same time,

everyone in the supply chain is keen to keep costs under control to maintain a competitive position and to make sure consumption isn't affected by perceptions about produce pricing. So the goal in any system is to avoid labour intensive processes, relying instead on modern technology solutions where data transmission requires a common data standard.

The produce industry needs to take full responsibility for its own traceability practices. United Fresh noted that while the draft guidelines are usually non-prescriptive, they would not have been developed if there wasn't a need to do so.



The chair of the United Fresh technical advisory group, Dr Hans Maurer, says the guidelines are intended as an opportunity for the produce industry to adopt its own traceability practices, a preferable option to an externally developed system created without industry input.

Technological advancements could be used to enable data-sharing right across the produce industry, which would add value without significant costs to consumer or grower.

"International markets are an important element of the industry's strategic marketing effort," he said.

"We need to demonstrate a high level of competence in food safety traceability efforts within our export supply chains as well as our domestic supply chain networks."

A robust traceability system relies on interoperability, allowing one system to work with, or use parts or equipment from another system. The traceability

project has already confirmed that growers collect a substantial amount of data to support their business operations and has demonstrated this is available during production and post-harvest processes. This data needs to be passed along the supply chain with the product it relates to and be visible or readable at all points where it has relevance.

Traceability doesn't work without an underpinning standard allowing all supply chain participants to recognise and move electronic data along with the product itself. Because domestic and export produce systems are intertwined, this standard cannot be developed on a national basis but has to be able to function globally. So the traceability project has worked with the Global Standards Organisation GS1 in developing the guidelines.

Growers, packers, wholesalers, marketers and retailers across the country are being asked to comment on the draft guidelines and offer

feedback on how they can be further improved before the final version is published next year.



The guidelines are available from the United Fresh website under the following link: <https://www.unitedfresh.co.nz/technical-advisory-group/sff>. Responses can be emailed to [info@unitedfresh.co.nz](mailto:info@unitedfresh.co.nz). Growers can call Anne-Marie Arts on 027 279 5550 to discuss the guidelines, or there's also an online survey available on the website.

The feedback process will be followed up with a series of workshops to be held later in the year to further explore the implications of the draft guidelines. ●

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# More accuracy, more confidence for orchards

*Brevis® and BrevisSmart® from ADAMA bring science to thinning.*

In Riwaka, with 100ha of export pipfruit, Cederman Brothers' orchard manager Nathan Binns and apprentice Tyler Cederman appreciate tools that enhance management. Approaching their fourth season using ADAMA NZ thinner Brevis, Nathan and Tyler also used the Brevis companion web-based prediction tool BrevisSmart for the 2019-2020 season with the help of their Fruition Horticulture consultant Greg Dryden.

Brevis is a photosynthesis inhibiting fruitlet thinner applied when fruitlets are about 8-14mm in size. It does not require surfactants and is rain-fast within two to three hours.

BrevisSmart helps determine the best timing for Brevis applications, factoring in solar radiation, temperature, fruitlet size and variety. Developed in conjunction with IBM, BrevisSmart uses weather data and forecasts from The Weather Company, an IBM business. Actual data from weather stations closest to the orchard from five days before the calculation and forecasted weather for five days afterwards (including the calculation day) are used to calculate the predictions.

Nathan says being able to use Brevis in cooler conditions rather than waiting for a warm window to use the "olden-day thinners" delivered an immediate benefit. Brevis is easy to measure for tank mixing, which makes Nathan more comfortable that no mistakes will be made over the busy time of chemical thinning.

Julian Williams, technical field representative at Tasman Crop, says BrevisSmart gave a good indication of when to apply Brevis, adding a tool to complement grower knowledge.

He said with Brevis he'd had pretty good results with clients overall in the past season. "They like that there's a single product going in the tank."

*This publication does not endorse the products or services featured here.*



Top: Tyler Cederman (left) & Nathan Binns. Bottom: Lindsay Hunt

Lindsay Hunt is apple orchard manager for Kaiaponi Farms, Gisborne, in charge of 67ha of productive apples and 20ha of young plantings spread over seven properties.

Asked by his Fruitfed technical hort rep Hugh O'Donnell if he was interested in doing a trial with Brevis and BrevisSmart, Lindsay was keen, spurred on by both pollination issues caused by temperature, and limitations with his previously preferred thinner 6-BA, which requires two days of 18°C.

A BrevisSmart prediction, sent each morning, helped inform Lindsay's decisions. Brevis was applied to 1.3ha of Royal Gala at a rate of 1.1 kg/ha, when king fruit were around 7mm, directed at the top 50% of trees. The result was even fruit carried through to harvest.

Lindsay cut out four conventional thinner applications and only a light hand-thin was needed.

It was also the best crop in five years.

For Kaiaponi Farms' 'workshop' block of Galaxy, Brevis was applied at 2.2 kg/ha. This block had a history of being very hard to thin. In the 2019-2020 season it had a big flowering and the best crop Lindsay had ever had.

Brevis is proven in New Zealand and 27 other countries. BrevisSmart will be available for orchardists locally for the 2020 thinning season. ●

*The predictions generated by BrevisSmart are designed to support you and the final recommendations. Please note that these predictions are one of several key factors you need to take into account before building any recommendations.*

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From left to right: Dan Black, Robin MacDiarmid and Annette Richardson at Plant & Food Research, Kerikeri

## Plant & Food Research, Kerikeri

*These are busy and changing times at Plant & Food Research, Kerikeri. The 52ha site is now one of Plant & Food Research's biggest research sites and its role, emphasis and orchard continue to evolve in keeping with the organisation's recent refreshed brand and tagline of Smart Green Future, Together.*

By Wendy Laurensen

Annette Richardson, a senior scientist who has been at the centre since 1984, says the focus has shifted in that time from local and advisory, to national and global. "Plant & Food Research now has 14 sites in New Zealand, with 1,000 staff, plus three sites in Australia and one in the United States, and we now work across all sites rather than on site-specific projects. I lead the Carbohydrate Physiology team, for example, with colleagues based here, Ruakura and Te Puke."

### Climate change and low chill winters

Annette's own work is around vine physiology and hydrogen cyanamide alternatives, with the added impetus now from the pending hydrogen cyanamide reassessment by the Environmental Protection Authority (EPA). "The issue is under the spotlight with the current land-use conflict of housing development and food production. Also, with climate change, managing low chill kiwifruit is important and timely research, so new kiwifruit low chill cultivars may be a key solution."

### Kerikeri site

The original reason for a research site in Kerikeri was that the then new irrigation scheme underpinned a solid future for Kerikeri's horticulture development, so selection and management of new crops were paramount. "Early exploration went from green kiwifruit then to a massive citrus research and breeding programme, then swung back to kiwifruit, particularly after Psa," Annette explains. "While we still hold the national citrus germplasm plus a collection of other subtropical fruit varieties, the site here is now largely focused on a breeding programme of the low chill kiwifruit varieties including new reds."

As well as the Kerikeri site providing the subtropical climate essential for trialling future low chill kiwifruit, the location has great soils, is near Plant & Food Research's Auckland site, and has available land and labour. Annette says,



Gavin Lloyd, assistant Orchard Manager, in the new kiwifruit block

"We have 16 permanent staff here, 10 casuals and often 10 to 20 contractors, and we have a very good orchard. There are some regional challenges with isolation, water, lack of some services, and internet but these factors are all improving as we step into this more sophisticated digital era."

### Increase in demand for science

Robin MacDiarmid is a principal scientist at the Kerikeri site and is a key player in a shifting emphasis in Plant & Food Research both at the local and national to global level. "In recent years we've seen a huge increase in demand from industry and from our wider communities for our science. People want to know the science of things like nutrition, sustainability, employment, environment and social development, and we've been shifting our focus to meet that."

Underpinning this, is a change in the organisation's use of government money. "In the past, most government funding was aligned to sector based applied research which inevitably delivers to the status quo, and tends to be short term and narrow in focus," Robin says. "We are in a changing world so we're pulling the focus away from applied research and back to basic research which is bigger in scope with longer timelines to prepare us for a very different future."

### New directions

To that end Plant & Food Research's chief scientist, Professor Richard Newcomb, recently identified three areas of fundamental science to support New Zealand's future food production - urban horticulture, aquaculture and sustainable production systems and supply chains. "The vision is that by 2030 Plant & Food Research will have developed the knowledge and capability to deliver food systems that give back to people and place, restoring and regenerating New Zealand's unique biocultural ecosystems."



Technician Denyse Pope testing kiwifruit in one of the labs

And Robin is excited to be leading the Rejuvenating Crop Ecosystems and Provenance aspect of the new sustainability focus, in addition to her existing leadership of the Virus and Like Organisms team. "Some of this project will probably be based in Te Tai Tokerau (Northland) and we'll explore how places of food production interact with our New Zealand ecosystem. We'll also look at the story and origins of some of our introduced food crops."

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Blueberries in glasshouse

Raspberry trial – in pots to prevent sucker roots confusing subsequent plantings

### Covid-19 lockdown

Robin says Covid-19 has focussed and accelerated changes that were already in process for Plant & Food Research. "People want healthy food from sustainable systems and they want to know its story and provenance, so there's a real fit between what we're doing and what Kiwis and consumers globally want." But the sudden Covid-19 shutdown was devastating for the Kerikeri site in the short term because it came right at the beginning of harvest. "We had to scramble to sort out priorities and because we weren't an essential service, we couldn't harvest our red and gold trial crops on time, so in some cases we lost a year's work," Annette says. "We could only do basic orchard maintenance in Level 4 lockdown, but the subsequent weeks brought opportunities for refining our focus, upskilling staff and improving administration and communication systems."

### Orchard management

Dan Black is the orchard manager of the Plant & Food Research Kerikeri orchard, and he and his assistant, Gavin Lloyd, kept the orchard plants alive during lockdown. "The priorities were to look after the germplasm blocks, but we couldn't maintain the breeding programme with canopy work or do any development. Longer term, Covid has highlighted the need for quality food, so it has confirmed that we're already doing what people are wanting. We're looking at what grows best in Northland and how to sustainably produce that."

"Everything we do now is focused on upgrading our sustainability, including smarter water and nutrient use, and reducing waste. Our average trial block lasts just three to

five years before we start again and replant, so it's vital to us to keep the land healthy. We've also just finished planting out the orchard's newest six hectares in more kiwifruit trials, and trials of low chill raspberries and blueberries."

The Kerikeri research orchard also has some persimmons, avocados, papayas and quite recently, some hops. "Hops suit colder climates, but the small planting up here safeguards the germplasm in case something goes wrong in the industry further south," Dan says.

And things do go wrong with the fruit industry. "Psa was particularly tough on red kiwifruit, so most of our early reds didn't survive and we had to find new plant material to begin again. We plant 10,000 to 20,000 kiwifruit a year to cross pollinate and evaluate in our nationwide breeding programme, and the recently released Zespri Red was a result of those trials."

Dan emphasises the importance of good relationships between Plant & Food Research and local industry and growers. "Several of us here come from the industry, so we know a lot of growers and we make a point of attending field days and events so people know what we're up to."

"Our School Gateways programme is another community outreach and is going really well with the students now developing their own kiwifruit block, and vegetable garden with fruit trees. Covid has rekindled the national interest in growing food, so it's exciting times for our industry. We're keen to continue to up-level every aspect of what we do here and pass that on to grow a better future." ●

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# Gisborne bananas go from trial to table

*In a small but significant event, the debut commercial sale of Gisborne-grown bananas was made in June and it is hoped it will be the first of many.*

By Kristine Walsh

**"We have had plenty of bananas for ourselves and friends but this was definitely the first commercial sale," says Tania Kearns of Ormond Valley Organics.**

"They were of the Ducasse (sugar banana) variety, which we knew did well around our region, and it was great to get them to market."

"Rather than selling them by the kilogram, they were sold in 'hands' of seven or eight individual fruit and we found that customers could not wait to try them."

With New Zealand importing more than \$220 million worth of bananas every year, Tania and Kevin see lots of space in the market for locally-grown product.

"Local growers might not be able to meet the price point of imported bananas but, apart from that lovely sweet taste, there are still lots of advantages," says Kevin. "Just one is how well the fruit keeps. It responds well to freezing and even in the fridge, if the skin goes brown the fruit inside doesn't."

Grown under the guidance of Tania's partner Kevin Brockhurst, the banana plants were established in December 2017 and later incorporated into a two-year AgResearch trial, and though that has now ended, Ormond Valley Organics still gets support from the scientists involved.

It's because of that they were able to nail down the variety (thanks to geneticist Dr Andrew Griffiths), as well as tapping into nutritional research (Dr Jane Mullaney) and information about tissue culture (Dr Wajid Hussain).

AgResearch isn't the only one sharing information: Kevin and Tania are in regular contact with Northland grower Geoffrey Mansell who is working towards NZGAP (Good Agricultural Practice) certification to open up pathways to more mainstream markets.

And Ormond Valley Organics has in turn shared the love, supplying tissue culture plants from AgResearch to Ngāti Pahauwera Development Trust in the colder climes of Wairoa, where they are being wintered under cover in readiness for planting in spring.

The Ormond trial started two-and-a-half years ago with 12 locally-sourced Ducasse suckers. That trial plantation now has 50 plants, supplemented with more than 100



Wendy Naden (Village Greengrocers) says customers could not wait to try the naturally ripened local variety, which have a sweeter, more tropical taste than they are used to

Misiluki plants brought in sucker form from Northland, plus a number of other cultivators to a total of 250 plants.

"Trial and error is what it is all about... seeing what does well and what doesn't in our region," says Kevin.

“**seeing what does well and what doesn't in our region**”

"We have learned a lot about the plants and processes and it is clear that if we are going to get the numbers, we are going to have to make the shift to tissue cultured plants. That massively accelerates the process from planting to production and if you produce those cultures on site, you are going to have really strong, resilient plants."

"So that's definitely where you'll get commercial viability and we can see that growing under cover could bring even more gains," Kevin says.

"For example, last year we had a bit of a rogue frost that knocked our plants around but this year that hasn't happened. Getting them under cover would see them going gangbusters every year." ●



# Citrus NZ update



By Wayne Hall : Chair, Citrus NZ

*Like all other Product Groups, the citrus industry has also been impacted by the recent Covid-19 events, although both growers and post-harvest operators have adapted well to the necessary changes and procedures that needed to be put into place in order to continue operating safely through the various alert levels, since the end of March.*

The main citrus harvest window commenced in April with satsuma mandarins being supplied domestically from Northland and Gisborne. Prior to the start of the harvest season, Citrus NZ conducted our annual 'pre-season' meeting with the major retail chains in early March, which provided them with an update around the timing, quality and likely volumes of our key crops which are satsuma mandarins, lemons and navel oranges.



**..key crops which are satsuma mandarins, lemons and navel oranges**

We also focused on promoting New Zealand citrus over imported product, especially in the navel orange category. Retailers have been very supportive of local product this season which has assisted our grower base.

Our industry has been successful in introducing the navel orange fruit maturity standard, based on independent orchard sampling and testing. This is to ensure consumers have a great eating experience and that the level of repeat purchasing and overall sales of New Zealand product increases.

As an industry we continue to fund a range of Research and Development projects, which cover a number of areas such as market monitoring, crop estimation, GIA (Government Industry Agreement) activities, and a variety evaluation work focusing on the existing cultivars in the citrus germplasm block, which is located at the Plant & Food Research station in Kerikeri. Another key area of

focus at present is on delivering a new version of the outdated NZ Citrus Grower Guide which will encompass several refreshed 'best practice' chapters. This project will result in an updated, comprehensive manual for new and existing growers. We are applying for external funding to ensure this project can be completed in full to a high standard over the next two years. Already we have published a new irrigation module - available to all grower and industry members of Citrus NZ via the website portal.



**In the Gisborne region** land use is changing, as more pipfruit and gold kiwifruit are planted in this early maturing region. As a result, a lot of older, uneconomic plantings of citrus and grapes have been removed over the past five years. Limited numbers of new citrus plantings are also occurring, which tend to be mandarin varieties which are harvested during the winter months, and new selections of seedless mandarins which will mature later in the September through to December period.



Domestic value of citrus varieties, ranked by value				
	Volume tonnes	Average price \$/kg	Value \$m	Industry value %
Satsuma mandarins	6,705	\$2.77	\$18.6	35%
Lemons	3,859	\$2.79	\$10.8	20%
Navel oranges	6,080	\$1.73	\$10.5	20%
Non-satsuma	2,850	\$2.56	\$7.3	14%
Valencia/non-navel	2,642	\$1.36	\$3.6	6.7%
Lime	299	\$4.54	\$1.4	2.6%
Tangelo	500	\$1.61	\$0.8	1.5%
Grapefruit	325	\$1.97	\$0.6	1.2%
<b>Total</b>	<b>23,260</b>		<b>\$53.6</b>	<b>100%</b>



**We also focused on promoting New Zealand citrus over imported product, especially in the navel orange category. Retailers have been very supportive of local product this season which has assisted our grower base.**

The overall performance of the domestic market for New Zealand citrus in the 2019-20 season is summarised in the table above ranked by value. Domestically, satsuma mandarins are the most valuable crop, while lemons and navel oranges are of similar value.



**The new irrigation module** is available to all grower and industry members of Citrus NZ via the website portal <https://www.citrus.co.nz>.

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Lawrie Donald, chair of Uretara Estuary Managers and Project Parore member, lays out mussel rope in preparation for installation to provide 'ladders' giving fish access around migration barriers in waterways

A fish ladder in place in a culvert to enable the tiny fish to 'climb' or swim through the culvert, upstream to breed

## Ladders lead way to whitebait recovery

*Kiwifruit and avocado growers will be among those involved in a project which could result in both an abundance of whitebait for locals and recovery of fish numbers planned for waterways in the Northern Tauranga Harbour region.*

By Elaine Fisher

Lawrie Donald, chair of Uretara Estuary Managers and Project Parore member says the proposal is to remove migration barriers to indigenous fish species in all the streams in the area.

This follows successful work carried out last year on the Te Mania, Te Rereatukahia, Uretara and Tahawai streams.

"The biggest threat to our indigenous fish species is not from the whitebait fishers, but from man-made barriers which prevent them migrating upstream. The objective of this new proposal is to extend the project to include all the streams that enter the Tauranga Harbour north of the Matahū Peninsula."

The proposal is for a joint project between landowners, Western Bay of Plenty District Council, Bay of Plenty Regional Council, Department of Conservation, Uretara Estuary Managers and Project Parore.

"Last year the Uretara Estuary Managers, as part of its 'Hills to Ocean' project, requested the regional council carry out a study of fish migration in the four streams which discharge into the estuary near Katikati."

Lawrie says following that study a contractor carried out remediation work on forty-three impediments in the four streams, with almost immediate results.

"In one case, mussel ropes were installed at a ford which appeared to be a complete barrier to migratory fish. The work was finished by 3pm. After dark at about 8pm we inspected the ropes to find fish already climbing up and heading upstream. It was a great, instantaneous success."

Often called 'fish ladders,' the systems installed to enable fish to navigate man-made barriers are designed around the particular obstacle and may include ropes from mussel farms, ramps or baffles.

The idea is to enable the tiny fish to 'climb' or swim around a barrier and then rest in quiet water before making the next dash upstream.

“**The idea is to enable the tiny fish to 'climb' or swim around a barrier and then rest in quiet water before making the next dash upstream**

Whitebait are the juveniles of six species of fish. Five of these are migratory galaxiids: inanga, banded kōkopu, giant kōkopu, kōaro and shortjaw kōkopu. The sixth species is common smelt.

Inanga begin life as eggs laid in vegetation beside streams in late summer and autumn. When the eggs hatch, they are carried downstream as larvae and spend the next six months at sea. In the spring they migrate upstream as whitebait and grow into adult fish.

That's why, says Lawrie, removing barriers to their upstream migration, and ensuring there is habitat for them when they get there, is vital to restoring viable population numbers.

Lawrie says the objective of the project is to ensure that any migrating fish (whitebait) that enters through the Bowentown entrance can reach any stream and find a home.

"There is a need to educate landowners, the community, about what a barrier to native fish looks like. Training will also be made available to contractors who may be installing stream crossings for subdivision purposes. Advice and demonstrations to this group will hopefully avoid future barriers being constructed within streams in the local area."

To find out more go to: <https://www.uem.org.nz/projectparore>.



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# Pathways into Primary Industries

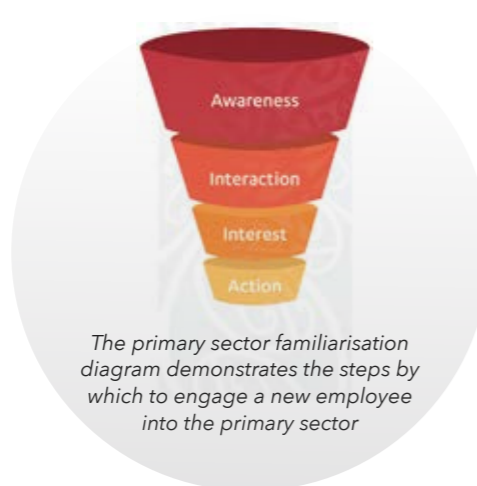
By Eve Williams : Senior Lead-Marketing, Primary ITO

Leading up to March 2020 New Zealand was experiencing consistently low unemployment. The thriving primary sector experienced consistent labour gaps, leading employers to look overseas, with approximately 15-20% of primary industry roles being filled by immigrant workers. The Covid-19 pandemic has led to rapid change of the overall New Zealand employment market, with a significant increase in job seekers.

The primary sector is still a powerhouse continuing to produce essential products for markets worldwide. But closed borders have led to challenges in providing the primary sectors with their usual seasonal influx of immigrant workers. Even with rising unemployment across many regions there are large numbers of vacancies in the primary sector.

As at 2 July 2020 there are 174 current horticulture vacancies on Trade Me, with many of these advertisements citing multiple positions. Many of the regions that have experienced the highest increase in jobseekers over the last few months are primary sector strongholds. To support efficiencies in our economy and overcome the challenges of our closed border, connections are needed to make positive transitions of our current jobseekers to the current vacancies and long-term career opportunities in the primary sector.

**PIPI - Pathways into Primary Industries** is a project that Primary ITO has drafted to consult with growers and seek funding from government, that



provides an opportunity to bring people into the sector and provide them with a choice of pathways to dynamic and rewarding careers.

With PIPI, we can use our unique position to support the wider primary sector to work together and ensure the right people are employed in the right roles with right skills.

Primary ITO is unique. As the sole industry training organisation mandated to work across the pan primary sector, we have over 100 frontline staff throughout Aotearoa working with employers and their teams. We can connect and partner with the wider primary sector to ensure that as a country we support people into employment and keep them there.

We know that at every level, horticulture depends on knowledgeable, innovative, skilled people - and we're here to help you find them.

Our core purpose is to work with businesses in the primary industries to grow the capability of their people. We do this through applied learning. Training and assessment are designed

to take place in the workplace, which enables your employees to learn on the job, while gaining real-world industry experience.

Primary ITO is part of the Skills Establishment Group (SEG) who have been instrumental in the development of the Food and Fibre Skills Action Plan (SAP) for the primary industries. Primary ITO continues to engage with learners, the regional workforce, Covid-19 response groups, including working with Te Rautaki Whakarōpū Māori, a collective of Māori ITO representatives who combine resources and expertise to work as one for Māori communities. We will take advantage of our national reach, supported by a sector specific regional structure, to bridge all these strands of activity.

Our national network means we can support our primary industries to thrive and grow. We work closely alongside government, industry organisations, iwi and businesses to provide a pipeline of opportunity within the primary sector.

## A bridge to employment

PIPI is a pathway from outside to inside the primary Industries that will mobilise skills, knowledge and expertise as part of a coordinated approach by sector and region to develop and deliver a national pan-sector pre-employment strategy. PIPI is a bridge to employment that captures people throughout their journey and is appropriate for school leavers, career changers, and can even pick up those who have already completed a pre-employment course elsewhere. The strategy aims to use Primary ITO's existing funding mechanisms and new funding streams



Te Ako Tiketike is an evidence-based theory model identifying outcomes for learners, plus the mechanisms, systems and structures for implementation

to create a complete and sustainable strategy for employment in our industries. The strategy incorporates several touch points and workstreams.

## There are seven key projects within PIPI:

### Primary sector familiarisation

- We need to gain the interest of potential employees and get them on the pathway towards finding their passion and turning it into their profession in the primary industries.
- The focus at this stage is on how the learner can contribute to sustainable food and fibre production, and thriving communities.
- This exposure will help to close the urban divide in creating connectivity between urban and rural communities.

### Short critical skills courses

- Critical skills need focused courses that are available online and can be linked to the network of formal qualifications (the Qualifications Framework).
- Our pan-sector approach means people will be able to access different roles in different sectors at different times of year.

- Reduces the employment burden on individual employers and enables individuals to reside in one location.

### The Primary Industries Passport and Badging System

- Based off learning outcomes in the existing Qualifications Framework developed by Primary ITO in consultation with industry. These may form the basis for assessable credentials and a way of recording them to support jobseekers gaining employment.
- Leads to formal training connecting to existing funding mechanisms.
- Improves employability of jobseekers.

### New entrant trainee experience

- Reduces the friction of people transitioning into Primary Industries by supporting new entrants with pastoral care and skills development.
- Enables people with a demonstrated interest to be connected with employers.
- Uses Primary ITO's existing national training advisor network that will complement Ministry of Social Development's job seeker programme.

### Employer experience and employment obligations

- Will provide employers and their team with access to support and training that will build their resilience, make them better employers, and contribute to the economic welfare of their business.

### Good news stories

- Captures and profiles those who have transitioned and follows them on their journey, ultimately attracting further people into the Primary Industries.
- Link in closely to the Ministry for Primary Industries and Tertiary Education Commission vocational marketing campaigns.

### Lifelong learning and employment

Links employers and trainees into existing training funding models for vocational training that supports progression of their career pathway.

### Draft proposal - have your say

For a full copy of the consultation document, please email Adam Fleck on [Adam.Fleck@primaryito.ac.nz](mailto:Adam.Fleck@primaryito.ac.nz). We look forward to hearing from you. ●





Toi Ohomai Institute of Technology horticultural student Ngatai Kingi instructs pruning trainees including Te Ohu Milne in the art of winter pruning

## Pruning a way to new employment

*Learning to cut away unproductive canes and tie down those for next season's harvest is proving fruitful for many who took part in free kiwifruit pruning courses in the Bay of Plenty during July and August.*

By Elaine Fisher

Funded by the Ministry for Primary Industries, co-ordinated by New Zealand Kiwifruit Growers Inc, the programme began with 57 people attending five courses held over one day each, run by Fruition Horticulture.

For those that wanted to learn more, Toi Ohomai Institute of Technology Limited provided five-day practical courses from which 41 trainees from a range of backgrounds and age groups graduated.

"The courses were designed to help fill a skills shortage within the kiwifruit industry, caused in part because the regular RSE (Recognised Seasonal Employer) scheme workers who do some of the winter pruning, were not available due to Covid-19 restrictions," NZKGI education coordinator Di Holloway says.

NZKGI provided each graduate with details on employment openings and each student will be contacted to find out how many have gone on to employment. The initiative coincides with the government's Fit for a Better World Action Plan with a major focus on employing 10,000 more Kiwis in the primary sector workforce over the next four years.

Toi Ohomai Institute of Technology tutor Harmine Zikirul says among those to take up the opportunity to learn a new skill and potentially find work in the industry were people previously employed in the IT industry, in retail, Air New Zealand, management and office roles, bus driving and research.

The age groups ranged from recent school leavers to those in their 60s, keen to try their hand at something new and perhaps find a pathway to careers in the industry.

Kyle Hodgetts, who has a diploma of applied science, returned to New Zealand after 20 years overseas just as the country went into lock down in March. "I was in self isolation for 14 days. I had a job lined up but that fell through. As I like working outdoors, I decided to take part in the pruning course as I can see there are career opportunities within the kiwifruit industry."

Te Ohu Milne joined the course, keen to learn winter pruning techniques to add to his growing list of experience within the industry.

Colin Monto loves the outdoors and after years of office work, was looking for something different.



Toi Ohomai Institute of Technology tutor Harmine Zikirul with trainees at a practical pruning session on Harvest Ridge Trust orchard near Tauranga

"I packed kiwifruit during lockdown and saw this course as a chance to find more work in the industry."

Johannes Baijems who had been working internationally in the oil and gas industry, recently moved with his family from Holland and owns a small orchard. "I joined this course to learn about pruning and find additional work."

Another trainee, Trevor Skinner, says kiwifruit is a good industry to work in and offers a variety of employment opportunities.

Ashleigh Mercer, manager of Harvest Ridge Trust orchards where the trainees gained practical experience, says they did a good job of pruning after initial instruction and supervision. A former student of Toi Ohomai, she was happy to have the trainees on the Pyes Pa orchard. "As an industry, we need skilled workers, especially in pruning."

Orchardist Phil Wordley formerly of Birchwood Packhouse Katikati, was among those giving instruction in pruning,

carefully explaining and demonstrating which canes to select and tie down, and which to prune out. "I see this as a chance to give back to the industry which has benefited me."

Marlia Fraser, MPAC grower services representative and a former Toi Ohomai Institute tutor was also instructing trainees. "It is essential the industry has skilled pruners, especially as RSE workers may not be able to return for some time."

NZKGI chief executive Nikki Johnson says the training courses are a win-win for both the industry and the people employed.

“**training courses are a win-win for both the industry and the people employed**”

"NZKGI is very pleased to work with the Ministry for Primary Industries to train winter pruners for kiwifruit orchards," says Nikki.

"While the industry should gain new people to support winter pruning, the employment will also be beneficial for the individuals.

"The kiwifruit industry is experiencing significant growth in the volumes of fruit exported year-on-year. To meet forecast demand comes the need for a corresponding increase for employees across all facets of the kiwifruit industry."

There are about 10,000ha of kiwifruit orchards in the Bay of Plenty and winter pruning which runs from June to September requires more than 5,000 workers, she says.

Those involved on the ground with the training courses were Fruition Horticulture and Toi Ohomai, with help from Southern Cross Horticulture, DMS (Direct Management Services), MPAC (Mount Pack & Cool), Harvest Ridge Trust and independent specialists. ●

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HORTICULTURE





1

## Organic kiwifruit evolves in Oropi

*Manaia Orchards in Oropi is planted in 660 acres, or 150ha of organic kiwifruit. Originally, growing kiwifruit wasn't an obvious thing to do back in the 1970s, but Doug Voss says most growers were happy to share their knowledge.*

By Claire Ashton

**He was always "in it to make a livelihood, otherwise why be doing it?" and notes that the industry has evolved hugely in the last forty years.**

Part of that evolution is the move to organics and organic growing methods. Manaia Orchards and Orchard Management use non-invasive oil and only spray *Bt* (*Bacillus thuringiensis*) spray and copper, and use a limited range of restricted chemicals. Compost is used as well as fish meal – a by-product from the Motueka fishing industry. Manaia Orchards has its own water bores and being close to Tauranga's water supply means that their organic practices create less nitrate leaching into waterways, which is essential, especially as the Bay of Plenty regional council have strict controls over leaching limits.

"The biggest threat of course is still Psa which is a great leveller – it doesn't matter if you are organic or not and it does not matter what chemicals you use, Psa will take you out," says Doug. Psa is the only disease you can see visually, as the wilting leaves are a dead giveaway. Doug was working in Italy from 2006 to 2010 and witnessed the devastation it caused and how it destroyed the kiwifruit business there, and upon his return home he was at least somewhat prepared to deal with it when it hit New Zealand six months later. Other threats come from fruit fly and brown marmorated stink bug, and he says, "a bit like Covid-19, with any disease you have to keep the infection levels down by isolating the problem and removing it."

Doug's grandparents emigrated from Northern Island in 1921, which was probably a good move given the events in Ireland at the time. Manaia Orchards will be 100 years old in 2021, and hopefully the family can all come together to celebrate the centenary, though some are still overseas as Covid-19 interfered with some family members' return travel plans from Tonga. "If Grandad was up there looking down he would say, yep it looks pretty good. It is family land and we are responsible for the heritage and we want to use the most sustainable methods we can."

Doug has noticed the growing season has moved perhaps a full month over the last 10 years (March to June is now harvest time), and despite global warming indicators, there are still colder or



2

- 1 Keeping the orchard sign posted
- 2 Copper spray sheet
- 3 Doug Voss



3

even colder temperatures than past averages, which create good growing conditions that are of course necessary for bud burst. Doug comments that the gold kiwifruit growing season seems to be longer now too.

Doug has around 15 permanent staff and up to 100 extra staff during seasonal harvesting. The harvest this year coincided with Covid-19, and they had to put all the necessary workplace conditions into action, such as social distancing. Actually, the picking was just as fast if not faster (perhaps due to fewer staff congregations) and this was even so with workers who had never picked before, and their enthusiasm made up for whatever they lacked in experience. When out picking on a nice day in the orchard they said, "hey this is quite good." Some were foreigners on a working holiday visa who specifically wanted to pick on an organic orchard, and because Manaia Orchard Management contract out, they confessed to not enjoying the non-organic harvest jobs so much. So there is an ethos within the whole value chain of organics and organic orchards, and moreover it seems to attract pickers who are good workers.

Some workers also came from the stalled forestry industry in Rotorua, driving over for the day to pick the fruit.

**“there is an ethos within the whole value chain”**

One thing Covid-19 did, Doug says, was to heighten "the essential nature of primary production as a way for New Zealand to make money." Looking to the future, and constantly evolving, Manaia Orchards has recently grafted a red kiwifruit onto a vine, as Zespri have released the Red 19 and with growers being able to purchase a license, Manaia intend to grow it as a commercial variety. The future is looking bright for the kiwifruit industry as the green, gold, and now red varieties combined with their high nutrition value and vitamin C benefits, create a great value addition to both individual health and to the health of New Zealand's economy. Our organic kiwifruit is sold in over 60 countries and Doug sees the kiwifruit industry as extremely efficient as it has the structure and kiwifruit authorities to guide it – and the growers to govern it. ●

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Left to right: Erin Atkinson, manager Apata GROW, Paul O'Brien, director of Apata Suppliers Entity Ltd and Kate Truffitt, compliance and avocado general manager all endorse the project

Ann Owen of Katikati has pledged \$150,000 to the project

## Centre closer to reality

*Fundraising to build the Katikati Innovative horticultural centre of excellence at Katikati College has reached the halfway mark, giving the trust behind the project the confidence to commission drawings and specifications for the building.*

By Elaine Fisher

**"Thanks to the generosity of orchardists, post-harvest companies, industry organisations and private individuals, we have more than \$250,000 in donations and pledges and can now take the next step towards making the centre a reality," says Hilary Johnson, innovative horticulture manager, Katikati College.**

This is a significant point for the project launched last year to offer pathways into horticulture through a Katikati centre of excellence, which brings together educational, skills and training providers under one umbrella.

Constructed on the Katikati College grounds, the facility will be available to college students and adults keen to find careers within the horticulture industry, or go on to further education, including university.

"Now we need businesses, especially those associated with the horticultural industry, and individuals to support us in the effort to raise the last \$250,000 needed to begin construction," Hilary says.

The impacts of Covid-19 and the restrictions on overseas workers entering New Zealand has

highlighted the urgent need for skilled horticulture workers. Meeting that need is among the goals of Katikati Innovative Horticulture Trust.

Hilary says the trust is grateful for the donations to date, with money coming in even during the Covid-19 lockdown period. "With continued support, we will have plans drawn up and aim to begin construction early next year."

Among the private individuals to donate is Ann Owen of Katikati, who believes so passionately in both education and the horticulture industry that she has pledged \$150,000 over three years to the project.

"Education, in my view, should have the highest priority because it determines the future outcomes for so many lives. It can be the ticket out of poverty but also provide the skills at all levels the industry needs."

Ann hopes others, including major industry players, will also make generous donations to the fund. "In the scheme of things, the trust is not asking for a lot of money. They are not planning to build an elaborate facility, but one which is functional."

As well as making a significant personal donation, Katikati orchardist John Bourke has teamed up with Hilary Johnson to visit post-harvest companies, asking for their financial support for the project.

"From the moment I first heard about plans to build the Katikati Innovative Horticulture facility I recognised it as a fabulous project. Horticulture as a career has not been pushed by schools, and it appears the economic lows in the industry in the early 1990s may be part of the reason. However, the industry today is vastly different, and the opportunities are enormous."

Paul O'Brien, director of Apata Suppliers Entity Ltd, which has donated to the project, says it opens the opportunity for people to "join the essential workers and enjoy not only diverse and rewarding career opportunities, but also job stability".

He's talking about the horticulture industry, declared essential during the recent Covid-19 lockdown because it produces fresh food for Kiwis and the world.

"There are already amazing careers in horticulture, and in future there will be jobs we haven't even imagined yet," Paul says.

He and fellow growers who supply fruit to Apata Group Ltd and Western Orchards Ltd, have donated \$16,800 to Katikati Innovative Horticulture Trust.

"When the proposal to make the donation was put to the Apata Suppliers Entity Ltd board, there was no hesitation - we all agreed such a facility is needed to ensure our industry has trained people to meet its growing future needs."

The decision has been welcomed by two Apata staff members, Erin Atkinson, manager Apata GROW and Kate Truffitt, compliance and avocado general manager who both recognise the importance of encouraging more people, especially school leavers, to consider careers in horticulture. Erin, the first woman to win the national title of Young Fruit Grower of the Year, is now a member of Apata's management team. "I love my job and many of my friends are envious of the opportunities it offers, including work life balance. I work hard and love doing so, but horticulture also gives me the chance

to enjoy time out for other interests," says Erin who thoroughly recommends horticulture as a career.

Kate, who joined Apata Group in 2015, has experience in marketing citrus, pipfruit, feijoas and avocados. She has also held a number of roles in operations and logistics before turning her skills to human resources, compliance, health and safety and sustainability.

"There is so much more to horticulture than picking and packing fruit or vegetables. There are jobs for all interests and skills including in human resources, compliance, finance, research and development, IT, laboratory work and much more," she says.

Paul is inviting other post-harvest companies and businesses involved in the industry's service sectors from beekeeping, to transport, to IT to irrigation and fertiliser supplies to make donations to the Katikati Innovative Horticultural Trust.

"We all know one of the biggest challenges facing our industry's future is a shortage of labour, which makes this project so important."

The Katikati Innovative Horticulture building will be a simple, utilitarian facility purpose designed for courses providing pathways into the horticultural industry's diverse careers. Building the facility in Katikati will benefit students of all ages, the local community and the wider industry.

With a full business plan, the trust has support from Zespri, NZKGI, Priority One, HortNZ's Horticulture Capability Group, the Bay of Plenty Horticulture Labour Governance Group, other industry leaders and Katikati horticultural businesses. It is also a registered charity, meaning donations are tax deductible.

**To donate** go to <https://www.katikatihp.com/contact> for bank account and contact details or collect a donation form from the College office or the *Katikati Advertiser*. You can also donate at <https://givealittle.co.nz/cause/innovative-horticulture-is-the-future>.

**To learn more** about the project visit <https://www.katikatihp.com/>.



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# Helping kiwifruit become part of a circular economy

By Elaine Fisher

*The Western Bay region is losing a valuable resource, which could enrich its soils or be processed for a high-value return and provide new employment opportunities, with every truckload of reject kiwifruit that is headed for Waikato dairy farms.*

That's the view of Katikati Taiao which is hosting an Organic Waste Forum in Katikati on Tuesday October 6 to discuss harnessing the value of waste kiwifruit and other organic material, via an industrial process. The concept involves building a pilot scale facility in Katikati and setting up a steering group to steward the project.

"We hope that an innovative, community-led initiative will lead to a pilot project that adds value to a local waste stream, to benefit our economy and the environment, including training and employment opportunities," says one of the forum co-ordinators Anne Billing.

"The Covid-19 pandemic is a reminder of how important it is to aim for a resilient, connected and caring community, so that no one gets left behind when challenging events such as this affect our community."

Currently most of the Western Bay's kiwifruit unsuitable for export is sent to the Waikato where it is used for animal feed. However, Katikati Taiao chairman Paul O'Neil says if processed in Katikati, the fruit could form the basis of a valuable resource for the region and also assist in future-proofing the kiwifruit industry by helping it become part of a circular economy.

The idea of the Organic Waste Forum came out of the environmental stream of the Hearts and Minds of Katikati research carried out by Katikati Taiao last year. The Forum was to be held in March 2020, but Covid-19 meant the event had to be postponed.

However, keynote speakers from the March event will take part in the October Forum, including Debbie O'Byrne MBA, circular economy and organisational management specialist, who will join the event by live video link from Australia, allowing attendees to ask questions in real time.

Norm Boyle, chief executive of Australian company Food Recycle will also join the forum via live video link, to discuss his company's patented process of converting commercial food waste into high value products.

Steve Erickson, of Chaos Springs, a regenerative farming and industrial composting specialist with 37 years' experience with organic farming, market gardening and commercial composting, both in Utah and New Zealand will also address the forum.

Another speaker is Michael Quintern, the founder and a director of MyNOKE, who is an expert in designing and establishing worm farms for various waste streams.

Tiki Bluegum, Katikati Taiao trustee and kaumatua and cultural advisor for Te Rereatukahia Marae will open the Forum.

As well as presenting pertinent information on the science and technical feasibility, research, employment opportunities and funding pathways for a project, the Forum will also include an industry Q&A panel so those attending may ask questions.

"With expert speakers, this is a key educational opportunity for anyone involved in the kiwifruit industry and other stakeholders," says Anne.

"We predict this project will be a local sustainability success story. One with quadruple bottom line benefits; economic, social, environmental, and cultural. And it will be a great story to tell the international consumers of kiwifruit.

"By working together, we can add value and resilience to our region, and we look forward to seeing everyone interested in attending on October 6. It's not all talk; there will be delicious food and drinks, but numbers are limited so make sure you RSVP."

## Organic Waste Forum

October 6, 2.15pm - 5.30pm  
Katikati Community Centre, 45 Beach Road, Katikati.  
RSVP to Kaye Robinson:  
[katikatitaiaosecretary@gmail.com](mailto:katikatitaiaosecretary@gmail.com). ●



# Tech start-up hits Covid hurdles... twice

*As if running a tech start-up is not tough enough, a Gisborne operator had to turn on a dime to respond to the Covid-19 pandemic and when the country faced new cases of community transmission, she had to turn again.*

By Kristine Walsh

**Founded under the name Carloads in 2019, Candice Parry's business provided both ride sharing for seasonal workers and a way to connect those workers with the growers that needed them.**

But with the social distancing required by the pandemic putting the kibosh on that, the service rebranded as Jobloads to ensure growers could get the essential workers they needed through the lockdown and beyond.

In early August, Jobloads celebrated New Zealand's golden milestone of 100 days without community transmission by reintroducing ride sharing, enabling more workers to get to where they needed to be. Then just two days later, that option was temporarily pulled while the government grappled with the re-emergence of community transmission and restrictions were put back in place. "It was tough, but what the restrictions validated for us was just how important that ride sharing concept is. It removes a barrier that keeps many people from the workforce," Candice says.

"So we are still committed to that, it is a way of making



sure all workers can access the job market and are available to the growers. We just have to make it work within the limitations we are all facing." So far, so practical, but Candice says the tech part of her business is equally demanding.

While her staff concentrated on getting kaimahi to worksites during lockdown, she combined juggling three young children with working with her tech team on developing the app she had always envisaged would revolutionise the labour hire market. "For start-ups, development is a notoriously vulnerable time for a business. It is very capital intensive and those costs just continue to mount up."

So while the app proved to be a complex build, the team remained focused on their deadline with plans to launch it in Gisborne at the end of August, before rolling it out nationally in October. "But the app is not just a tech tool, it is also a way of engagement and we want to make sure our users have a warm engagement with the process, not a cold one," Candice says.

"Jobloads is not just about work, it is about meaningful work that brings value to everyone involved." ●

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# NZKGI's Labour Strategy nimble for Covid-19

By Mike Murphy :  
Communications Manager, NZKGI

*Coming into this year's harvest, the potential for a labour shortage was seen as real, and possibly greater than in 2019 given the forecast increase in fruit to be harvested.*

With this shortage in mind, NZKGI's 2020 Labour Attraction Campaign was planned around utilising the strategies of 2019 and identifying new approaches.

A key part of the 2020 strategy was to focus even more on attracting New Zealanders, especially those living close to orchards and packhouses, to work in the industry as a priority. New collateral material was accordingly proposed including posters and leaflets for use with New Zealand audiences such as tertiary students.

The campaign was prepared thoroughly in the lead-up to the harvest, with key activities being the updating of the *Little Green and Gold Book*, production of collateral, and the preparation of a number of profiles on New Zealand workers within the industry, which were incorporated into a short video and included in the updated 2020 attraction video.

The social media programme, which had run continuously from the previous season, increased in activity as the 2020 season arrived, while the traditional media preparations included a release announcing the launch of the 2020 strategy. Outreach to other key audiences - students, retirees and sports clubs - also kicked into action.

Then the Covid-19 crisis struck and within a short time New Zealand was in lockdown. Borders were closed and industries which were traditionally reliant on overseas visitors and the free movement of New Zealand citizens, such as tourism and hospitality, were massively affected.

The crisis occurred right on the commencement of harvest and had the potential to severely affect the industry's ability



Dame Susan Devoy featured prominently as part of NZKGI's labour attraction strategy talking about her experience picking kiwifruit

to complete the harvest successfully. Given that border closures not only halted the inflow of holders of Working Holiday Visas but also restricted the numbers of RSE (Recognised Seasonal Employer) scheme workers available for the harvest. Some potential New Zealand employees were also affected as Covid-19 health risks meant that many retirees wisely avoided working, while worker movement was also heavily restricted throughout New Zealand.

However, the kiwifruit industry was able to offer those in affected industries areas such as tourism, hospitality and forestry work in orchards and packhouses - and this unanticipated workforce certainly helped meet the labour requirements of the 2020 season. It must also be recognised that social distancing requirements meant packhouses had to reduce the number of workers in their facilities, which slowed the throughput of fruit and reduced workforce demand.

When the impact of Covid-19 became clear, NZKGI made an urgent review and revision of the labour strategy to direct marketing towards the industries affected by the crisis, such as forestry and tourism. NZKGI also set up a Labour Co-ordination Centre in conjunction with Zespri to handle the requests for work from New Zealanders and kiwifruit employer requests for workers.

Despite the severely compromised labour market, the outcome in terms of the harvest was a relatively positive one and growers were able to harvest the 2020 crop.

The underpinning principles of the 2019 Strategy held true in 2020: provision of good information on roles, pay and other aspects of working in the industry; provision of effective channels to get the information out to key targets; and robust media activity - both traditional media and social media - to get the NZKGI messages to its target audiences and respond promptly to any queries about work or any criticism of the sector. ●



## AVO UPDATE

# Thinking differently

By Jen Scoular : Chief Executive, NZ Avocado



*The export of avocados will start in August as global economies, supply chains and consumer confidence remain uncertain.*

Our industry is in frequent communication with other sectors as we all put our plans, and backup plans, into place. For someone who likes to have plans in place and measure delivery against plans, this is different, but being more agile is something we are learning to be good at.

I enjoyed the first live streaming of the Women of Influence virtual speaker series recently, with three very successful New Zealanders sharing their stories and talking about their experience under Covid-19. All three talked about the need to be agile, the need to seek alternatives, but also the opportunity Covid-19 has provided them to think differently about their businesses. An acknowledgement that we need to work and think in different ways when the global environment is so uncertain.

We are strongly supportive of the recently launched Horticulture Post-Covid Recovery Strategy, and the workstreams being developed within that. I will note for readers that this strategy has not been launched by HortNZ, but by horticulture sectors across New Zealand. That's quite a difference because as an industry led plan, those industries doing the leading need to be the ones setting the plan.

I am leading the Horticulture Strategy diversity workstream. Gender diversity fits there but this is also about thought diversity, acknowledging that there is diversity amongst growers and their reasons for being horticulturalists. The data on our industry, our interactions with new growers, our industry survey and a new project on better understanding our growers have all revealed the diversity across our grower base. From growers with 50 trees to growers with 5,000, from those prioritising the pleasure of working amongst beautiful green leaved trees,

which also produce an amazingly healthy product, to those wanting the best return in the shortest time.

The workstream will also acknowledge that the New Zealand story highlights the diverse array of amazing products we grow in New Zealand, from quite small-scale heritage tomatoes to very large-scale gold kiwifruit, to boutique wineries or fabulous new varieties of apples. We often show off our beautiful landscapes to the world, but don't always show the scale of thousands of hectares of horticultural plantings. Growers caring and nurturing their crops, fruit being handpicked, and fruit being managed and harvested using leading edge new technology are all part of our diverse horticulture story in New Zealand.

We strongly believe in the future of horticulture. We will drive a strategy that ensures a sustainable future, one that cares for our land, our people and our communities, and the whole of New Zealand will benefit from that. ●

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# TECHNICAL

THE LATEST INNOVATIONS AND IMPROVEMENTS

Chemical  
thinners and  
growth regulators  
Page 51



Left and above: Premature dormancy breaker timing has lengthened the blossom period. Here are all bud and flower stages from pre-pick right through to complete petal fall. A chemical thinner nightmare.

## Understanding chemical thinners & growth regulators

*Compared to pest and disease control, getting to grips with chemical thinners and growth regulators in the spray programme is complex.*

By John Wilton : Deciduous Fruit Specialist, AgFirst

In the case of pest control, particularly insecticides, timing of sprays is relatively simple. We now have very good scouting tools and deep understanding of insect life cycles, so it is relatively easy to identify optimum spray timing. Generally spraying for insect pests becomes necessary once the pest has been found in the crop, or a proactive insecticide application is made at a vulnerable point in its life cycle already identified by climatic monitoring and insect life cycle modelling. Often insecticide application can be in line with calendar date scheduling.

In the case of disease, preventing infection is the name of the game. This means maintaining a protectant fungicide or bactericide cover on the tree when there is tissue susceptible to infection present. Because disease requires an incubation period before its presence is noticeable, disease spraying tends to be calendar based, commencing as the plant is about to enter the infection window.

As with insecticides, there are climate modelling tools available to assist disease spray timing.

Timing for growth regulators and thinning sprays needs to be based on the appropriate phenological stage to achieve the intended result. Unfortunately, this is only the first step in the decision-making process because there is also the challenge of matching phenological stage with weather conditions leading to effective uptake and response within the plant. The role of growth regulators in the plant is to manipulate and modify the physiological processes determining its behaviour.

Effective use of growth regulators requires a thorough knowledge of their mode of action and also of the plant processes they influence.

Often a plant growth regulator will influence numerous plant processes depending on phenological stage at the time of application.



### AVG (Retain®)

The ethylene blocker AVG (Retain®) is an example of a growth regulator which has many different roles in manipulating plant behaviour depending on phenological stage at time of application. AVG (aviglycine hydrochloride) inhibits ethylene biosynthesis stopping the production of endogenous ethylene. Initially AVG was developed as a pre-harvest drop product to replace an earlier growth regulator which was withdrawn from the market. It was very effective for this purpose on varieties that were particularly prone to pre-harvest drop.

It was soon found that in varieties such as Royal Gala which produce significant amounts of ethylene as harvest approaches, AVG delayed fruit ripening making it a very useful harvest management tool. It is now over 20 years since AVG, marketed as Retain®, was introduced to our fruit industry. Over that period harvest management has been its main use.

Compared to run of the mill agricultural chemicals, AVG was expensive, often accounting for up to half the spray programme cost.

In the early years our company did a lot of the on-orchard development work to identify its responses and benefits.

The main benefit for a responsive variety was harvest delay, usually around 10 to 14 days. As fruit continues to grow through the harvest period at approximately 1% per day, a harvest delay of 10 days represents a size lift of one count size, i.e. a 10% yield increase, not to mention an increase in fruit value due to larger fruit.

The data we generated over this period on application, cost and potential returns indicated that diligently applied AVG would give a two to three-fold return on its cost. Sometimes returns were huge where available harvest resources were incapable of picking the crop in optimum condition for storage, leaving low value process fruit the only market for the crop.

At the moment the pipfruit industry is facing uncertainty over harvest labour, so AVG may become a very important harvest management tool to help manage our way through harvest.

“

**At the moment the pipfruit industry is facing uncertainty over harvest labour, so AVG may become a very important harvest management tool to help manage our way through harvest**

Research and innovation does not stop. Once the value of managing endogenous ethylene was recognised, other potential uses for AVG were explored. Now uses are continuing to evolve with the present focus being enhancing fruit set with application around blossoms on shy cropping cultivars. With some of these cultivars, increases in fruit set and retention have been spectacular, and in some cases, made shy cropping high value varieties profitable due to the ability to consistently crop them. This use has become very important for setting good cherry crops in shy set varieties such as Staccato®.

### Ethephon

Ethephon is old chemistry, well out of patent protection, which is still widely used for various plant growth regulation (PGR) purposes depending on phenological stage, dose and temperature conditions.

Cost wise it is at the other end of the spectrum from AVG with little margin for new R&D, so many of its potential PGR uses fail to appear on product labels.

I first came across Ethephon 50 years ago when it was beginning to be investigated as a potential blossom thinner, and later in the season for stimulating return bloom.

Use as a pre-harvest ripening agent to advance harvest quickly followed. Later it was found to be a vigour control agent as well. Sequential low rate applications have been used for vigour control during periods of growth flushes. Where it is sprayed at low rates outside of the phenological endogenous ethylene production stages it does not usually stimulate increased endogenous ethylene production, so its effect is mild and short-lived in the plant.

Unlike most PGRs, response is rapid, usually within hours of application followed by rapid disappearance. It is rate sensitive, heat sensitive and very dependent on phenological stage at time of spraying in regard to its response aggressiveness. This means considerable skill is required in understanding all the factors impacting on its behaviour to avoid disastrous outcomes. For instance, if weather conditions go against you around time of application frost injury and increased russet levels can occur. At one time it was widely used as a blossom thinning agent, largely due to the fine R&D work carried out in Tasmania by Drs Keith Jones and Sally Bound. Initially we followed their approach here in New Zealand in its use as a blossom thinner, but it was not long before we noted some overthinning, as well as increased russet incidence in certain russet prone varieties. Over the years its use as a primary blossom thinner has declined, and it is used as a late blossom clean up application in combination at low rates with ammonium thiosulphate (ATS) to knock out unwanted late set flower fruit.

With increasing market requirements on crisp firm juicy fruit with high internal fruit specifications its use to enhance and advance ripening is also in decline.

Some years ago following intensive scientific literature searching I managed to turn up some indications that if applied at very low rates prior to the pre-harvest phenological endogenous ethylene production stage, it could enhance red colour development provided weather conditions at the time were conducive to anthocyanin development, i.e. a period of cooler nights about 6 weeks pre-harvest. When used correctly in this manner, fruit colour could be advanced ahead of minimum parameters for harvest so that the of the majority crop could be harvested at an optimum maturity for long-term storage at the beginning of the harvest window, rather than waiting for colour and harvest late in the maturity window as often happened.

There are many other useful minor PGR uses for ethephon such as enhancing return bloom in shy cropping varieties. Here it is often used in combination with NAA (naphthaleneacetic acid) as a mid growing season application, again at low rates.



Once blackspot establishes it is there for the season and contrary to popular belief it does not stop active spore production. This infection probably occurred in the early bud break period infection starting very early in the spring will increase exponentially through to harvest. Regular calendar-based fungicide spraying in the early season gives certain control.

### NAA

This is another example of a multi-use older PGR now well out of patent, for which numerous uses have evolved over many years. Most uses are tied to phenological stage at time of application. It can thin fruit, act as a stop drop agent, interact positively or negatively with other PGRs to enhance or depress return bloom, as well as being phytotoxic for long periods at higher rates applied under marginal cool conditions. I have known its adverse effects on the tree to last up to a couple of months in some sensitive varieties.

While once an important fruit thinner, its use in this direction is falling away due to adverse effects on fruit growth, and lingering residues of it can increase the pygmy fruit problem associated with it. Its main uses now are mid-season low rate application to enhance return bloom and pre-harvest stop drop sprays.

In recent years, there has been a move away from single higher rate sprays at the commencement of pre-harvest fruit drop to multiple low rate sequential spraying commencing well ahead of probable fruit drop. This use pattern has been found to be more effective with lower fruit softening and fewer adverse maturity related side effects.

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### 6-Benzyladenine

For nearly 30 years 6-BA has been a key post bloom chemical thinner and was initially developed as a replacement for carbaryl, an insecticide with fruit thinning action and also very toxic to insects including bees and desirable insect pest predators. Carbaryl was therefore incompatible with integrated pest control and was causing headaches for adjacent growers with later flowering crops requiring bees for pollination. Once we understood the conditions 6-BA required for effective thinning response, it became the main post bloom chemical thinner for pipfruit.

Its major weakness was its very exacting response to weather conditions around the time of application for satisfactory thinning response, and relatively short phenological stage of thinning activity. In cooler, unreliable spring climates, opportunity for application under satisfactory conditions for good response were strictly limited and often frittered away by calendar-based pest and disease control pesticides taking precedence. We also discovered that suitable surfactants to enhance uptake were key to a successful thinning result.

As with most PGRs, 6-BA evolved with time to find other uses in the orchard such as enhancing fruit firmness by increasing cell division and usually significantly increasing fruit size beyond the thinning and crop load effects.

Timing and weather conditions are critical for success with 6-BA and when suitable weather conditions occur for success, its spraying needs to take precedence over other spraying requirements. Incidentally, the activity window of 6-BA can be brought forward for some varieties not prone to the pygmy fruit problems by 2 or 3mm fruit diameter with the addition of a low rate of NAA.

6-BA at higher rates has a role in stimulating side shoot development to improve tree development in young trees and increase young tree cropping potential. Fuji cultivars are particularly responsive to 6-BA for this purpose. Among my clients who grow Fuji, we apply a 6-BA thinning spray at the high label rate under optimum conditions to stimulate spur development in the second growing season.

### Metamitron

This recently introduced post blossom chemical thinner represents a huge breakthrough in chemical thinning. Its great benefit is that it is less weather dependent for uptake, and brings new flexibility and reliability to chemical thinning programmes when it is correctly applied in regard to water rates.

Our company conducted most of the initial field trial work with this chemistry here in New Zealand, so we now have 10 years' experience with it. Over this 10-year period we have compared most of the main commercial products available and found that apart from a few subtle, generally

non-significant differences among them, their performance is similar when applied at the same active ingredient rate, water volumes and surfactant rates.

## “ this recently introduced post blossom chemical thinner represents a huge breakthrough in chemical thinning

Under our conditions, we have found that chemical thinner formulations with factory incorporated surfactants have often had inferior performance to those where we have added surfactants proven to perform well under local conditions. We think this is due to most northern hemisphere locations where these surfactant containing formulations were developed having milder, more humid climates therefore the formation of softer cuticles allowing more efficient uptake than is the case than in our cooler or dryer climates.

Metamitron works through its ability to suppress photosynthesis creating a carbohydrate deficiency in the tree at a period of high demand which causes excess crop to be shed. The depth and length of this period of photosynthetic suppression determines thinning response and aggressiveness. It takes around four or five days after application for the photosynthesis suppression to reach a level necessary for thinning response to begin and it will remain around those levels for four or five days, then slowly rising back to normal levels.

Field experience often gained from applicator mistakes and their analysis has enabled steady improvement in thinning consistency since Metamitron has been available for commercial use.

#### Important lessons

- Inter fruit and active shoot growth competition is necessary for a satisfactory thinning response, so over thinning of light crop trees directly due to Metamitron seldom occurs.
- Because of the ability of trees to move photosynthates around the tree, it is necessary to obtain adequate spray coverage of at least 70% of the effective tree canopy.
- As foliage area builds up rapidly over the Metamitron spraying window, higher water rates are required for later in the application window than at the beginning.

Long drawn out fruitset periods are difficult to deal with. This problem can be managed by either compressing blossom periods with an effective dormancy breaker correctly applied in regard to timing, or adopting a double Metamitron spray approach with the second spray about four to six days following the first one.

Metamitron response is directly related to concentration and coverage, so if safe rates are exceeded significant over thinning will occur.

Coverage is very important and present field experience indicates that dilute water rates in the order of a litre of spray to 10 cubic metres of tree row volume (TRV) is about optimum.

When correctly applied, fruit shedding can commence as soon as 14 days after application and is usually completed by 21 days.

Unlike almost every other chemical thinner we have worked with, most of the crop is brought down to singles and doubles, sometimes as high as 80% of the fruit in clusters of this category with singles largely outnumbering doubles. This results in huge savings in hand-thinning costs compared to other chemical thinning chemistry.

Selects fruit for size and fitness and cleans fruit out of shaded areas where it is unlikely to make Class 1 quality parameters.

Initial commercial experience with Metamitron products was somewhat disappointing. While one or two instances of over thinning occurred, the majority of failure was due to inadequate spray coverage through applicators taking misguided advice on water rates believed by the merchants supplying the product to save their customers money. There is no more expensive spray than that which fails to perform.

Climatic conditions in the week or so following application determines Metamitron thinning response. Sunny conditions with cool nights reduce response and probably indicate the need for a double spray approach. Cloudy days and warm nights increase response, indicating a second spray is unnecessary.

### Growth regulators – general comments

The PGRs discussed above are a selection of those available but they show the development history of the group as a whole. The features are that most have a range of response and potential uses which emerge over their lifetimes and are not necessarily known at the time the initial label claims are sought. Research development costs are very high so only limited data and treatment conditions can be investigated for the registration data pack.

The fishhooks emerge out of the woodwork when these tools are exposed to general commercial use. The label for a PGR needs to be viewed as a licence to use. With time, use patterns will be refined and tailored to specific pipfruit situations. This means considerably more understanding of their behaviour than that required for most common pesticides.

It is likely that PGRs will gain greater importance as production tools as we grapple with the problem of climate change.



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# Back-to-back dry years for many areas



By Georgina Griffiths : Meteorologist, MetService

## 2019 and 2020 – Highs in charge

This isn't news to growers, but New Zealand has seen persistent Highs on the weather map during much of 2019, and again so far in 2020.

The main difference between the two years has been the primary location of the Highs. Last year, the Highs favoured

the area west of, and over, the North Island (meaning westerlies for the lower North Island and across the South Island). This year, the Highs have favoured the region over, and to the east of, the North Island.

This subtle change in the High centre has produced some intermittent easterly rain events through

winter for Northland and Coromandel, generating a couple of deluge rain events for the upper North Island (but missing the Auckland region, which is currently still on Stage One water restrictions).

These persistent Highs have effectively blocked many of the rain makers from moving across New Zealand.

## Year to date rainfall in selected regions

To put the extended dryness of 2020 into context, let's look at the year-to-date totals at selected rain gauges around the country. This compares the *actual* rainfall so far this year (as at time of writing on 14 August 2020), compared to the *normal* tally at this time of year.

Location	Percentage of year-to-date normal
Kerikeri	108%
Te Puke	75%
Napier	56%
Blenheim	54%
Christchurch	80%
Timaru	50%

## Looking ahead: Spring

There is a reasonable chance (60%) that La Niña develops in the tropical Pacific Ocean during spring. However, even if La Niña forms, any impacts for New Zealand are likely to remain minimal during spring. The most important factors that will influence our spring regime will be:

whether our persistent Highs hang around

versus

whether the spring westerlies really wind up

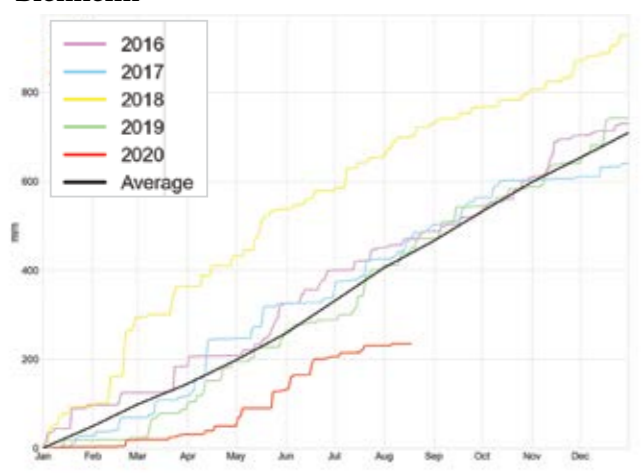
At the current time, MetService is monitoring a very strong signal for continued *higher-than-normal* pressure in the New Zealand region during spring.

What this will likely mean, in practice, is a mixture of both intense and intermittent Highs and some good old-fashioned spring westerlies. **A drier than normal spring** is forecast for many regions of the country.

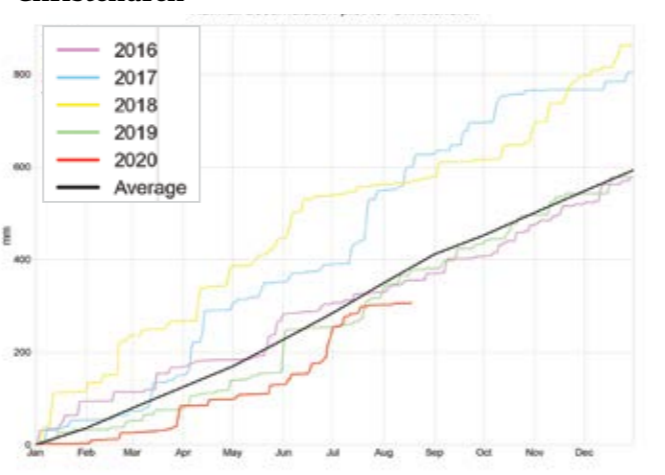
As always, you should keep up to date with the MetService long-range forecast at <http://metservice.com/rural/monthly-outlook>.

## Rainfall accumulation

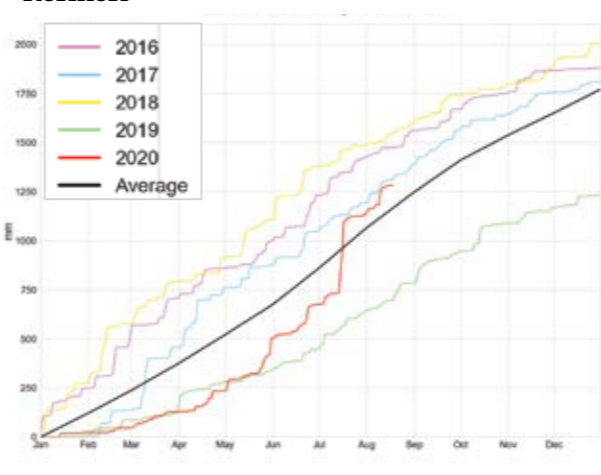
### Blenheim



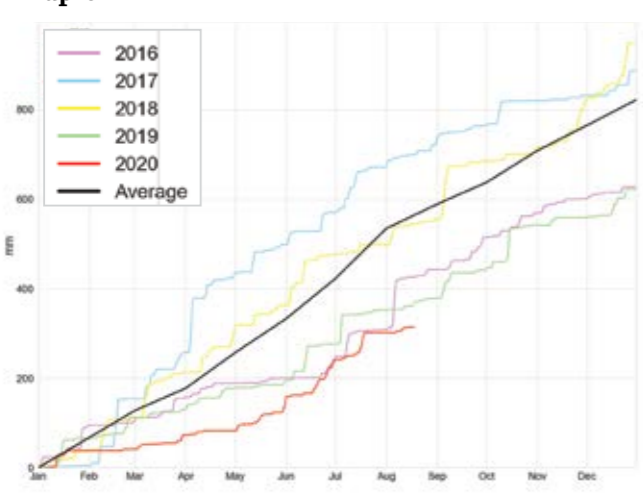
### Christchurch



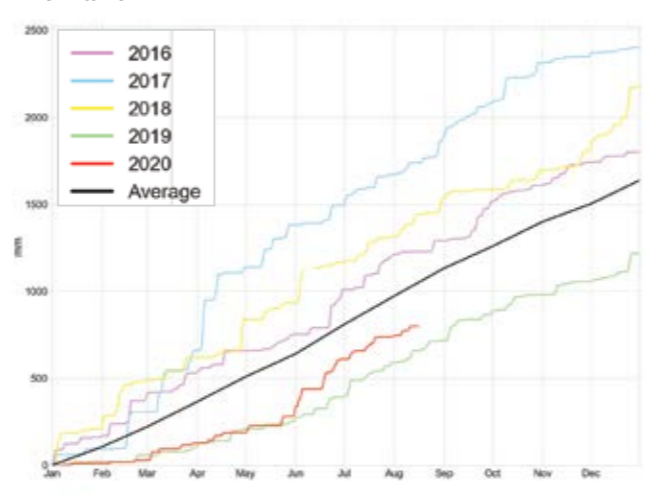
### Kerikeri



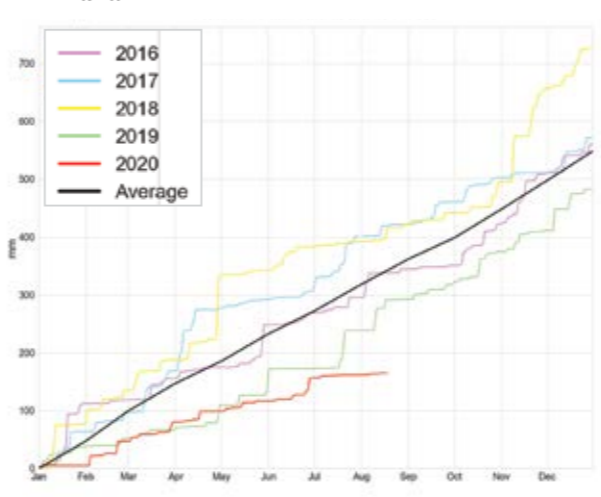
### Napier



### Te Puke



### Timaru



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