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HORTICULTURE NEW ZEALAND







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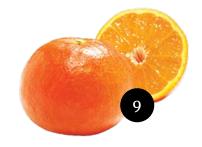
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# 2023 – what would we want it to bring?

Another year has flown by, and a new year begins. To me, 2022 was an absolutely awful year, our industry's "annus horribilis", as the late Queen Elizabeth II once famously said.

By Barry O'Neil: HortNZ president

Wanting to move on and be positive, what will 2023 bring to horticulture in New Zealand? Unfortunately, it hasn't started well for most of us with unseasonably large amounts of rain, wind and inclement weather, but I am hopeful this is just a glitch with 11 months of better times ahead.

What would we include on our horticulture new year wish list? I've had a go at what I think it is important that we achieve in 2023.

Available and affordable labour, people who want to work, would still be my number one wish! Good to hear from Central Otago and the cherry harvest that they have a good mix of New Zealanders, Recognised Seasonal Employer (RSE) Scheme workers, and backpackers for their harvest. Also, other sectors are reporting much better situations currently - let's hope it continues to improve.

I, like everyone else in horticulture, have become increasingly frustrated by what appears to be union driven aspirations to increase membership through RSE workers, with the ongoing campaign to undermine a valuable seasonal work programme. That is, valuable to the Pacific workers - their families, communities and nations - as well as the New Zealand horticulture sector.

The unions continue to target the programme with sensationalised claims using the sample examples over and over, and the media lap it up without any fact checking. When I look hard at the scheme and engage with those involved, all I can see are businesses and employers going out of their way to do the very best they can for their RSE workers. It would be a travesty if this smear campaign were to result in employers deciding that employing RSE workers is just too hard. In 2023, it must be left up to the RSE workers, the nine Pacific nations involved, New Zealand employers and the New Zealand government to run the scheme. This is instead of having the unions trying to call the shots, which seems to be happening at the moment.

I've always said that with a scheme this large, there may be a very small number of employers who are trying to take advantage, but this is the exception and not the rule.

However, when they are identified, they need to be removed totally from the scheme, as we have absolutely no tolerance for this behaviour.

> My next hope is that as industry good bodies, both within horticulture and the wider primary sector, we get over ourselves and start really working together, rather than trying to maintain what I believe is too many small individual and separate entities, all of which are grower funded. There is just too much to be done for us to be thinking we all

need to be taking the lead. It is also ridiculous for us to be thinking that each of these entities can do everything themselves.

My next hope is that as industry good bodies, both within horticulture and the wider primary sector, we get over ourselves and start really working together, rather than trying to maintain what I believe is too many small individual and separate entities, all of which are grower funded

Collaboration needs to really take off in 2023, or we run the risk of hitting the wall in a big way. We need to be open minded about what this collaboration will look like. We will most likely see changes to how we are organised if we are to deliver real and enduring collaboration, just like some vegetable product groups are starting to do.

As I have said many times before, we must change how we grow if we are to prosper. This means embracing the challenges we have before us, not denying and delaying. This is whether the challenges are climate change, freshwater quality and quantity, protecting our elite soils, chemical availability, or whatever else.

Let's focus our collective talents and efforts on success for the future – a future which is going to be different. In doing this, let's not lose focus on what our customers and consumers want to see happening. They are the ones who ultimately pay our bills.

Governance is my next focus, and is the key to good outcomes for specific sectors and the wider industry. We all see what good governance can achieve, but unfortunately all too often we also see the results of ineffective governance. While I believe our Horticulture New Zealand Board has excellent governors with good diversity, as with every organisation, we need to continue to focus on improvement and lifting our game.

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#### We all need to reflect on what community and country we want for ourselves, our children, and grandchildren, in Aotearoa New Zealand

It is understandable that in demanding, high pressure businesses, individuals are reluctant to come forward for these industry good roles. But it seems to me that everyone needs to challenge themselves about contributing to make horticulture even more successful. Most of us will have elections during the year for our respective boards. Let's do everything we can to make sure we have a strong line-up of aspiring and energised candidates. Let's also make sure we engage with the process to elect the right people.

And when I say good governance, I mean individuals with experience, sensibility, diversity and intellect, who are respected with connections and networks to their own and the wider sectors. These are the people who will drive better outcomes, especially in the collaboration area I raised earlier.

Unfortunately, we seem to have become angrier and at times a divided community, and even a divided country, which I didn't enjoy at all in 2022. We all need to reflect on what community and country we want for ourselves, our children, and grandchildren, in Aotearoa New Zealand. Our choice!

I think we can do better, so let's make sure 2023 moves our sector and country in the right direction.

Kia kaha.



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# Food security in the land of plenty – or egg on our faces

Just after Christmas, New Zealand – the land of plenty, with plenty enjoying many a festive meal – ran out of eggs.

By Nadine Tunley: HortNZ chief executive

This wasn't caused by Covid-19, supply chains or the weather, which have been behind other recent perishable food shortages and price rises. Remember

when McDonald's ran out of lettuce, when restrictions were eased after our country's first national lockdown in late April 2020? And remember all the media stories we endured as an industry last year about the cost of vegetables, due to shortages to do largely with the weather or the fact it was winter?

No, behind New Zealand's egg shortage is egg producers' response to regulation that wasn't fit for purpose, was changed midstream, resulting in unrealistic timeframes and the undermining of confidence. The two main supermarkets also played a part, as what they wanted did not align with what the government was hoping to achieve through regulation.

Do not get me wrong. Improving the welfare of chickens and all animals is a good thing, just like reducing environmental impact and improving freshwater quality are good things.

The point I am making here is the very real and immediate effect of poor regulation and the domino effect on food production, and the stark consumer impact, even in a land of plenty like New Zealand.

The Egg Producers' Federation of New Zealand says two years ago, there were around 4.2 million egg-laying chickens. Today, that figure sits at around 3.5 million, with about 3.8 million birds needed to maintain supply. In the year to June 2022, egg production dropped by ten percent - back to 2016 levels - which was the biggest fall in egg production that New Zealand has seen in 20 years.



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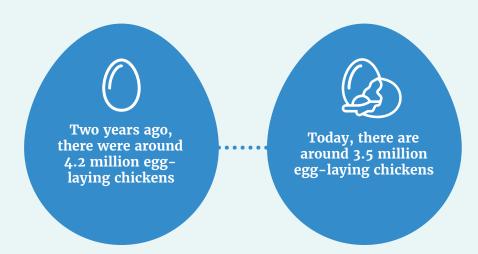


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Why was this? The Egg Producers' Federation says it was because of the number of producers exiting the industry, thanks to a lack of confidence due not only to the changes in regulation and the costs associated with that, but also due to inflation and increases in feed grain prices - feed being 65 to 70 percent of the cost of producing an egg.

#### The food and fibre sector is fast drowning in uncoordinated, complex and unrealistic regulation

Sounds like a perfect storm, and also a situation not too dissimilar to the one that fruit and vegetable growers are facing. That is, poorly thought through and rushed regulation that is not coordinated across government, coupled with ever increasing production costs, the labour shortage and seemingly never-ending weather that is not ideal for growing.

What impact is this situation having? More and more growers are considering making the heartbreaking decision to leave the industry, because it is just too hard. Some growers have already made this decision and are selling up or just mothballing their operations.

What will the impact of this be on consumers? I think we are already starting to see an impact, with less reliable vegetable supply and associated increased prices. While some in government seem to still believe that New Zealand could import its fresh vegetables, in reality, logistically and economically, that is never going to work plus it would drastically reduce our already fragile food security. Plus, these vegetables would also no longer be

'fresh' and the range of available produce would reduce significantly. Then there's the increase in biosecurity risk through importing more foodstuffs.

New Zealand is a land of plenty; we used to be proud of that. Now however, the food and fibre sector is fast drowning in uncoordinated, complex and unrealistic regulation. We know and accept we must do better, just like the egg producers knew and accepted that. However, the way the current government is going about change is not the way to do it, just after a pandemic when the world is still in social and economic turmoil.

This year, we hope the government is more open to listening, and takes more swift and practical action in the right places, particularly in the area of Resource Management Act (RMA) reform. There is too much riding on this reform to get it wrong - again. I say again as since the RMA was enacted in 1991, it has been amended more than 20 times creating uncertainty, inaction and unnecessary cost.

This year, we hope the government is more open to listening, and takes more swift and practical action in the right places

That is just not the way to run a country, let alone a successful business. The only outcome of this approach is having egg on our faces.

Reform of the RMA is the biggest policy change in 20 years and will affect the life of every New Zealander for at least 20 to 30 years - it is paramount it's got right.

### YOUR LEVY AT WORK

#### INDUSTRY WIDE ISSUES FOR INDUSTRY GOOD

# Natural resources and environment

Sarah Cameron: HortNZ senior environment policy advisor

#### 2022 in review

Last year saw the Horticulture New Zealand environmental policy team increase in capability and capacity as a result of HortNZ's transformation and increased investment in this important area.

At a national level, the government's policy agenda was massive and the policy team was kept busy responding to a range of consultations, including:

- Grocery Code of Conduct
- National Policy Statement for Indigenous Biodiversity
- Emissions reduction plan
- Managed coastal retreat
- Climate Change Adaptation Plan
- Freight and Supply Chain Strategy
- Drinking Water Standards, Rules and Aesthetic Values
- Fair Pay Agreements
- Freshwater Farm Plans
- He Waka Eke Noa
- Natural and Built Environment Bill (Resource Management Act replacement)
- National Food Waste Definition.

Regional councils began their freshwater engagement, which is a requirement of the National Policy Statement for Freshwater Management 2020. They need to work with communities to understand the value of freshwater in their regions and develop a vision for freshwater catchments. The team was active in responding to these consultations and advocating for values that support the production of fresh fruit and vegetables.



# District plans are important as they provide the rules for primary production activity

District plan activity across the country was extensive. In the North Island there were district plan reviews in the Far North, Kaipara, Hawke's Bay, Taupō and Waitomo. And the Wairarapa review was combined across South Wairarapa, Carterton and Masterton District Councils. In the South Island there were district plan reviews in Timaru, Selwyn and Central Otago. The West Coast review was combined across Grey, Buller and Westland District Councils and West Coast Regional Council.



Freephone: 0508 467 869 Web: www.hortnz.co.nz Phone: 04 472 3795 Email: info@hortnz.co.nz Horticulture New Zealand PO Box 10232 Wellington 6140 Level 4, Kiwi Wealth House, 20 Ballance St, Wellington 6011 District plans are important as they provide the rules for primary production activity. HortNZ has consistently advocated for the protection of highly productive land, to avoid inappropriate subdivision in rural zones and reverse sensitivity; and rules that allow seasonal accommodation to be built, and bird scaring devices, frost fans and artificial crop protection structures to be used.

This year will see gazetting of agricultural emissions (He Waka Eke Noa), national Freshwater Farm Plan regulations, and national Indigenous Biodiversity regulations. We also expect more engagement by regional councils on draft freshwater rules and the replacement of the Resource Management Act with new government acts.

HortNZ has consistently advocated for the protection of highly productive land, to avoid inappropriate subdivision in rural zones and reverse sensitivity

The policy team will continue to keep growers and industry updated on policies and rules and how they may have an impact on growers' operating environments.

#### **NEW ZEALAND FRUITGROWERS'** CHARITABLE TRUST



The New Zealand Fruitgrowers' Charitable Trust is offering 1 scholarship for the 2023 academic year.

#### \$5,000 LINCOLN UNIVERSITY DIPLOMA SCHOLARSHIP

The New Zealand Fruitgrowers' Charitable Trust is offering a \$5,000 scholarship in 2023. The scholarship is available to New Zealand residents who are working in, or intend working in, the New Zealand fruit growing industry undertaking their first year of study towards a Diploma in Horticulture or a Diploma in Horticultural Management at Lincoln University.

The annual value of the scholarship shall be a maximum of \$5,000 towards tuition fees or living expenses. \$2,500 will be paid out in Semester 1 and on condition that all Semester 1 courses are successfully completed a second \$2,500 will be paid out in Semester 2.

#### **Application process**

Applications for this scholarship close on 30 April 2023.

Further information and application forms are available from the Lincoln University website: www.lincoln.ac.nz/study/ scholarships/search-scholarships/new-zealand-fruitgrowerscharitable-trust-horticulture-scholarship

Please note that the Selection Teams for both scholarships will be looking for:

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



# **YOUR INDUSTRY**

ACROSS THE SECTOR — ACROSS THE COUNTRY





As well as managing her mother Henny Geuze's (right) Riverton Orchard, Anita Willock (pictured left with son Reggie) looks after her brother William's kiwifruit next door while another brother, Mark, manages his own kiwifruit plots just over the road

# Family tradition behind orchard success

As part of the wave of Dutch migrants who headed to New Zealand in the mid-twentieth century, Jacob and Maria Geuze established a growing legacy that continues to this day. KRISTINE WALSH reports.



After the famine of post-World War II, getting into farming was almost impossible in The Netherlands. Dykes built over centuries to protect cropping had been destroyed in the war and any workable land was tightly held.

For young mechanic Jacob Geuze that dream crept even further away after the North Sea flood of 1953 struck The Netherlands, Belgium, England and Scotland at the cost of tens of thousands of animals and 1835 human lives.

In Jacob's home province of Zeeland, in the west, dykes were breached in nearly 70 locations and nine percent of the country's farmland was under water.

So, in 1956, Jacob and his wife Maria did what half a million of their countrymen and women did: they left The

> Netherlands to join the wave of nearly 24,000 Dutch migrants who chose New Zealand as their home in the period 1951 to 1968 alone.

> > Having chosen horticulture as their profession, the couple became part of another wave: Dutch agricultural migrants who, according to academic Henri van Roon's 1971 PhD thesis, brought a culture of frugality, hard work and determination to succeed.

"That's just what they were like... they fit just about every Dutch stereotype you can think of," laughs Anita Willock of her Opa and Oma, Jacob and Maria.

It is because of that foundation that Anita has been able to join her mother, Henny Geuze, in running Riverton Orchard, adjacent to Jacob and Maria's original property just ten kilometres inland from Gisborne.

While Henny remains the owner - and a relentless worker - 31-year-old Anita is on board as the new generation; an orchard manager, running five hectares of kiwifruit, avocados and citrus.

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By the 1970s, they were keen to get involved in more permanent cropping and with Peter agreeing to lease them more land, Maria and Jacob set to work planting oranges, grapefruit, tangelos and in the 1980s, kiwifruit

How she got there was a winding journey, starting with local landowner Peter Grey, who, at the time of Jacob and Maria's arrival in Gisborne, held property stretching from the main road out of Gisborne, down to the Waipaoa River.

A grandson of 1920s avocado pioneer Charles Grey, Peter first sold the young couple a five-hectare plot, complete with house, on which they grew canning tomatoes that were so in demand in Gisborne at the time.

By the 1970s, they were keen to get involved in more permanent cropping and with Peter agreeing to lease them more land, Maria and Jacob set to work planting oranges, grapefruit, tangelos and in the 1980s, kiwifruit.

All the while their young family of seven was growing and in 1986, their son Andrew met a 25-year-old Dutch bookkeeper, Henny, who was in New Zealand visiting family.

The couple were soon married and in 1990 were able to buy half a hectare of land - along with the home Peter Grey lived in before moving to a new build - and take over the lease on five hectares Jacob had already planted.

When Peter died in 1997, Henny and Andrew were able to purchase that leased land, creating what is Riverton Orchard today.

Anita and her three brothers well remember how hard their parents worked, and how the teen siblings tried to get out of putting in their own labour.

"We'd get off the school bus and sneak inside in the hope of getting out of going into the orchard," Anita laughs. "But they'd always come and find us and set us to work."

All four siblings inherited that strong work ethic.

As well as having Anita to run Riverton, Henny's youngest son William bought Maria and Jacob's original property after their deaths in 2015 and 2019 (respectively).

Meanwhile, middle son Mark is a kiwifruit contractor who has his own blocks just across the road.

And though he is based in Wellington, the eldest son, Stephen, an architect, helped out by designing the renovation to Henny's 1940s home.

While they all help each other out, Anita - a trained teacher - and her husband Daniel returned from overseas so she could step up into a role at Riverton.

"We arrived just before the first lockdown in 2019, but were already on our way as mum wanted a bit more help and Mark's team, who were working the orchard at the time, were skilled in kiwifruit but not so much in everything else," Anita says. "Plus, we really wanted to have a family and working on the orchard means my baby son Reggie (one year old) can be with me or mum for most, if not all, of the day."

As well as running Riverton, Anita manages William's kiwifruit across the driveway - along with Opa and Oma's remaining lemons, oranges, mandarins and tangelos.

Between Anita, Henny and their eight staff, the business operates almost year-round, the workers taking care of things while Henny and Anita have a break over January and February.

Having a diversity of produce means that, with just a few contractors brought in at peak times, the staff can be on the job year-round, which gives them great job security.

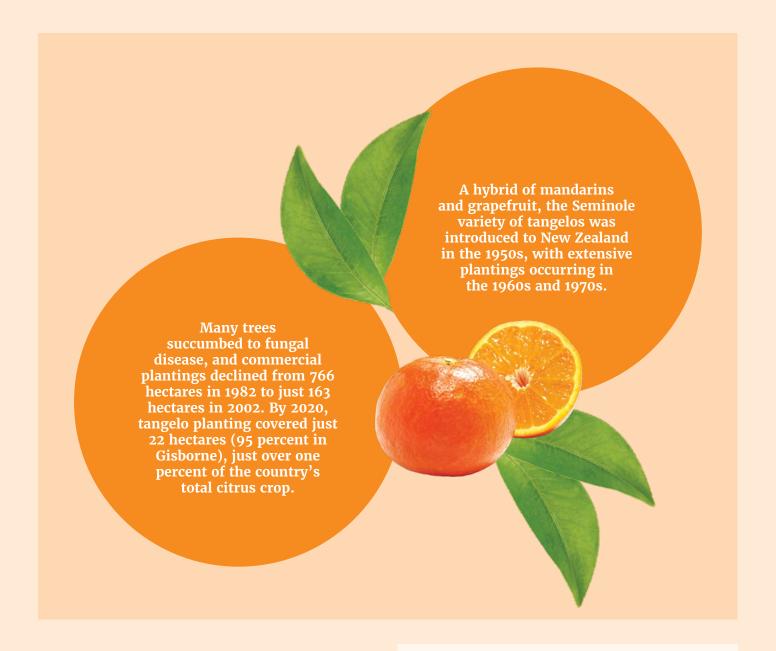
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Having a diversity of produce means that, with just a few contractors brought in at peak times, the staff can be on the job year-round, which gives them great job security

"Some of the younger ones didn't think they would last but have found they absolutely love the work, have been able to develop their careers and have stuck with us," Anita says. "Because of that we didn't really have the shortfalls many growers saw over the Covid-19 pandemic."

The Geuze family have certainly had their trials, among them the kiwifruit bust of the late 1980s and losing their original avocado trees after 1988's devastating Cyclone Bola.

But having solid supply chains has kept Riverton on a steady course.



Today, the kiwifruit and Meyer lemons go straight to a major packhouse, while the smaller on-site packhouse and washing facility are used to handle the grapefruit, limes, mandarins, oranges and the few remaining tangelos.

Of that, some goes to a local direct-to-market fruit company. During the peak of the pandemic they sold the fruit online; and Henny retains the rest to take to the Gisborne Farmers' Market, where she has been a regular for more than 15 years.

As well as her passion for working outdoors, Henny says that weekly outing is what she loves most about orcharding.

"That is really the main reason I do it... you have that connection with the land, then you have this wonderful connection to the people," she says. "Those people love to buy local, they love the taste of the produce they are getting and they really enjoy talking direct to the grower. That's what keeps us going."

#### ORANGES VERSUS TANGELOS

When Jacob Geuze planted his orchard in the 1970s, he alternated navel orange trees with tangelos to see what worked best - and at the end of the day, the oranges won.

Daughter-in-law and owner of Riverton Orchard, Henny Geuze, still has a few tangelo trees but says that while she loves their unique flavour, they can be a hard sell.

"They are delicious and make beautiful juice, but some people seem to find them a bit tart, and being so juicy they can be messy to eat," she says. "But we like to have a few on offer partly for the variety, and partly because they are part of our orchard's history."



Taking growers into the classroom

# Growers connecting virtually with classrooms

City kids are talking to farmers and growers around the country through virtual classroom sessions called Farmer Time.

The programme has been so successful that it is now seeking more growers to meet the demand from teachers.



#### Anne Hardie

Farmer Time was introduced to New Zealand at the beginning of 2022, with a pilot programme connecting eight teachers with eight different farms. It has since grown to about 40 teachers, matched with farmers and growers, including an avocado grower in Katikati, a market gardener near Hamilton and LeaderBrand in Gisborne, who have regular live chats with their classrooms.

The programme has been a huge success in the United Kingdom before being introduced into New Zealand. National coordinator, Marie Burke, says it tends to grow organically by word of mouth.

Farmer Time is aimed at primary and intermediate school aged students in a bid to inspire, engage and educate them

about food from farm to fork. It is aimed largely at urban schools whose students know little about the source of their food, though Marie says many students in rural schools around New Zealand have little rural knowledge as well.

Students regularly engage in live chats to their matched farmers or growers from their classrooms, discussing the daily and seasonal work, asking questions and developing an ongoing relationship with their farmer or grower.

"They're just engrossed in what they are learning from farmers and growers - and also the teachers who often don't have any rural background and are learning just as much as the kids," Marie says. "They are able to ask questions and get real-time answers." Marie says it works both ways, with farmers and growers also learning from their classrooms.

"It's connecting us with our consumers and it has been insightful," she says. "They learn what children think about farming and there's a huge range of thoughts, which are all valid.

"We dealt with a class of nine-year-olds who didn't understand that the mince they were eating was from an animal, and unless you have those conversations you don't learn those things."

#### You have to plant the seed when they're young and if it's something they enjoy, they're more likely to take it up at high school

Marie and her husband have been part of the programme with their own farm which includes a 40ha crop of sweetcorn, and she says the students were enthralled about how it was grown.

"They were fascinated about how many times a vehicle went across the paddock to get that corn and were gobsmacked at the work, effort, fuel and costs of growing their vegetables," she says. "It was a real eye opener for them.

"Once harvested, we planted grass seed to put lambs on through winter and at the same time the students grew their own grass seed alongside us. A weather bomb flattened their crop and we had a similar one, so they learnt what can happen."

Marie says students learn a lot of detail about how their food is grown, and one class retained useful knowledge about nutrients that came in use when they talked with a nutritionist visiting the school.

Apart from the educational side of the programme, she says it may 'plant the seed' in students' minds that agriculture and horticulture can provide an exciting career path.

"You have to plant the seed when they're young and if it's something they enjoy, they're more likely to take it up at high school."

Many of the classes are part of the Garden to Table programme which supports primary and intermediate schools to plant, harvest and cook food, thereby learning about the changing seasons, the full food cycle and then cooking the produce. Marie says many teachers have signed up for Farmer Time to extend their students' Garden to Table knowledge by learning how food is grown on a larger scale.

Farmer Time in New Zealand initially focused on farming, as Beef + Lamb NZ ran the pilot programme. Now it is extending across the primary sector as demand ramps up. Marie says teachers are asking for connections with growers and she expects demand to continue to grow.

Growers can use video chat apps for the programme and talk to classrooms from the orchard or garden about the soil, plants, people and environment. Alternatively, they can take videos and share them from the office. Farmers and growers call their matched classroom every







Richard and Sheila Mandeno are hanging up their gumboots after more than 40 years of growing fruit in their Kumeu orchard

# Retiring growers share rich history of fruit growing

After 43 years of growing pipfruit, stonefruit and then kiwifruit at Kumeu, northwest of Auckland, Richard and Sheila Mandeno have hung up their boots. As the couple settle into retirement, they reflect on how far their business has come, as well as the future prospects of the industry. GLENYS CHRISTIAN reports.

### Richard Mandeno was brought up on a sheep and beef farm at Orere Point, southeast of Auckland.

"I always had a love of plants and growing things," he says.

So, he joined New Zealand Forest Products - the country's largest industrialised company at the time - as part of a forestry management cadetship based in Tokoroa.

"We were so lucky to have the opportunity to learn management skills because we were paid to study, then we worked for the company in the holidays to learn about all the various aspects of plantation forestry," Richard says. The 1980s marked several large milestones in Richard and Sheila's lives, including their marriage and first exposure to horticulture at a time when the industry was booming nationwide.

Richard returned from his overseas experience (OE) in 1979 and had the opportunity to buy a 6.6-hectare horticultural block on Old Railway Road in Kumeu. The block was already established as a pipfruit and stonefruit business, selling fruit at the gate and 'pick your own' to the public.

Originally the property had five neighbours, all involved in fruit production of some sort, including Cooks New Zealand

Wine Company. Richard joined the Independent Fruit Marketers (IFM) who were a group of Northwest Auckland pipfruit growers supplying bagged apples to multiple retail outlets and cooperatives of families interested in purchasing orchard fresh, tree-ripened apples.

Those were the days when the NZ Apple & Pear Inc Marketing Board controlled the sale of both the domestic and export crops.

"We used to play cat and mouse with the board inspectors," Richard says.

It was also a time when many new kiwifruit orchards were established in the district. Some were speculative and promoted to city professionals for tax efficiency, but a core group of kiwifruit growers that remain in business today were based in this "Golden Triangle" - a section of land bordered by the Riverhead Coatesville Highway, Old Railway Road, and Old North Road - where the peaty loam soil had proven to grow kiwifruit very well.

Unfortunately, the block's stonefruit never quite thrived like other crops without the necessary winter chilling. So, from the 1980s onwards, the Mandenos made the decision to convert the four hectares of stonefruit to Hayward

green kiwifruit; building all the pergola structures to support the vines and installing the irrigation system and artificial shelter themselves. The result was an orchard with consistently high productivity with adaptive new vine management initiatives.

The business progressively switched out its apple varieties too, to keep up with consumers' choice of newer varieties. The final apples they had planted

> were the Fuji and Splendour varieties until the paddocks were converted for grazing cattle.

Richard and two other Kumeu growers established the Rodney Cooperative Packhouse (Rodpak) in Riverhead in 1983 along with around 50 other growers, enabling locally grown fruit to be packed and coolstored within the district. It operated for 15 years until production from the shareholders decreased, and remaining growers had their fruit packed in Franklin or the Bay of Plenty.

As the industry grew, so too did overseas marketing of kiwifruit. Seven exporters were licensed by the Kiwifruit Marketing Licensing Authority in the 1980s, often competing just on price.





1 Peach picking on the Mandeno orchard, 2 A historic photo of Richard and Sheila's kiwifruit establishment on Kumeu orchard, 3 Back in the day. Apples bagged and ready to be sold on the Auckland market, 4 The Mandeno orchard in 1987

Richard remembers meeting Fruitfed export manager, Mack Nicol, in Europe where he was shown around the fruit wholesale market in London and Belgium. He says as an observing grower, the message was clear.

"We as growers were cutting our own throats by having multiple exporters because buyers played off exporters on price, knowing the packed quality of the fruit was consistent to all exporters," Richard says. "Having multiple sellers of New Zealand kiwifruit in the markets wasn't working, whereas a single desk marketing body controlled by growers would better serve the industry.

"I came away from those meetings thinking that our real competitors were from fruit grown in Chile, France or Italy; not fruit grown by my Kumeu neighbour who supplied his fruit to another exporter."

The issue came to a head when growers ended up owing \$2.50 for every tray of kiwifruit exported during the 1987 export season.

"The multi-seller approach wasn't working," Richard says.
"We were bleeding and there was a lot of grower attrition."

Richard was elected as one of the four representatives on the NZ Fruitgrowers Federation Kiwifruit Sector Committee. Its chairman was Paul Heywood. The committee organised a series of meetings around the kiwifruit growing regions of the country with the aim of obtaining 75 percent grower support for establishing a single desk marketing authority. The Minister of Agriculture agreed the government would enact legislation to establish that structure. "It was a case of getting the Bay of Plenty on board," Richard says. "Leo Mangos, the Bay of Plenty NZ Fruitgrowers director, played a pivotal role in achieving grower support."

Growers voted in favour of the single desk structure for their industry and the Kiwifruit Marketing Board was set up.

Richard believes its value was seen in the industry's resilience following the discovery of *Pseudomonas syringae pv actinidiae* (Psa) in the then Gold variety. Growers collectively garnered the support of banks and other institutions to ride out the devastating impact and pivot to the newer G3 or G9 varieties of SunGold.

"Other countries growing kiwifruit varieties have not had that united ability to overcome adversities like Psa," Richard says.

Looking back, he and Sheila say they should have moved to growing Gold kiwifruit.

"But we stuck with what we'd grafted and upgraded males and adopted new management technologies," Richard says.

This led to their block producing an average of 13,800 trays per hectare last season.

In 1994 Richard re-entered the forestry industry, leasing out the orchard to EastPack. Despite a shift back to forestry, Richard and Sheila maintained their involvement with kiwifruit. They believe obtaining labour for kiwifruit orchards will be an ongoing problem for the sector. Richard



and Sheila used a South Auckland contractor who would usually have a picking gang of from 20 to 25 on the orchard in April. But this year only eight to ten turned up, many with no picking experience, which they identify as a contributing factor to this year's fruit quality problems.

"It's an Achilles heel for the industry," says Richard.

He points to the \$700,000 per hectare cost for growers to buy new plant variety licences only to not be able to get work carried out at the optimum time.

"Packhouses can mechanise, but winter pruning has to be done by hand at the correct time."

Another big issue is the pressure of urban sprawl around Auckland, which has seen their now former neighbours grow to 13 in number. All are required to be advised before any spraying operation occurs and there have been reverse sensitivity issues where newcomers questioned whether using a helicopter to prevent frost damage overnight was really necessary.

"They said that wasn't what they moved to the country to be awoken [by] at 4am," Richard says.

The amount of commuter traffic passing by their property

daily has grown rapidly, and with large truck and trailer units no longer being able to be loaded at the roadside, a new entrance and turning area had to be made within the property.

The Mandenos see both sides of the argument as while growers might not want to see more development, landowners are making the willing choice to sell to buyers wanting their land.

Another issue faced was water allocation from an aquifer below the orchard which they used for spring and summer irrigation. Maintaining the resource consent under which the water could be taken was expensive, but recently Auckland Council decided to cap the amount of water used at a lower level, so more was available for city supplies.

Looking forward, they see climate change will present more issues for kiwifruit growers around Auckland, without winter chilling for bud burst and increasing resistance to the use of chemicals. Pest and disease problems could also increase, especially with the airport and the Ports of Auckland being so close.

"Biosecurity New Zealand does a wonderful job, but Auckland growers really are on the front line."



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Matthew and Richard Glenn

## **Glenview Orchard**

"Orcharding is not for the faint-hearted," says Glenview Orchard's founder Richard Glenn, as he reviews the ups and downs of the past decade which have helped shape the business for the better.

Geoff Lewis Photos : Trefor Ward

The family-based operation has almost seen it all: a major shift from apples to kiwifruit just in time for Psa, labour challenges and a crushing frost event. But a move to produce the whole range of commercially available kiwifruit varieties has enabled Glenview to better manage its production.

Located near Ngāhinapōuri about 10 minutes south of Hamilton, Richard and his wife Robyn launched Glenview Orchard in 1979 on 34ha with four hectares in Green kiwifruit.

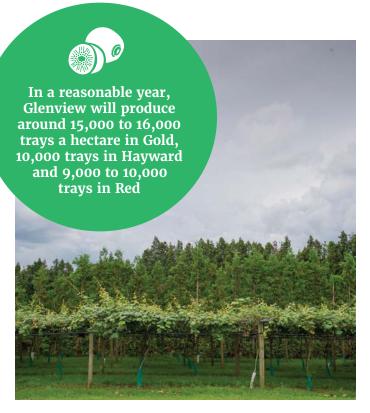
As Richard explains, they had a choice between going into dairy - when most of the surrounding agriculture was pastoral - or into orcharding. They chose horticulture and initially went into kiwifruit.

"In the mid-1980s we planted apples - Royal Gala and Braeburn - as we wanted to diversify from having only one cultivar. While these varieties were developed in New Zealand, unfortunately they were not patented so we effectively gave them to the world."

At one stage Glenview had 30ha in apples, and its kiwifruit production shrank to about 2ha plus 6ha of leased blocks.

Then around 2000, Zespri released the first Gold variety under Plant Variety Rights (PVR) - 16A. The Glenns decided to make the move back into kiwifruit based on varieties that had a PVR with the added bonus of Zespri as a single desk seller.

"We started pulling out apples and planting 16A, and we ran our own packhouse doing apples and kiwifruit for export. We packed our own until 2006 when we closed the packhouse. We were too small to be economic, going forward.





Gold kiwifruit vines

Duck manure compost supplied by Quack-a-Duck based in Cambridge

"We got rid of our leased orchard blocks and focused on growing ourselves. By 2015, we'd pulled all our apples out and planted Gold. Now we have 17ha in SunGold, 4ha in RubyRed - a limited release which came out about two years ago - and about 2ha in Hayward."

Richard is a shareholder in EastPack Ltd, which has multiple sites in the Bay of Plenty and packs about 40 million trays of kiwifruit a year.

The transition has not been without its challenges, some not of their own making. Psa arrived in New Zealand in 2010 and devastated kiwifruit growers nationwide. Being outside the main kiwifruit growing area, Glenview managed to keep the disease out until 2014, by implementing some very strict hygiene measures.

"As it was airborne, Psa inched closer each year and eventually we got it. Fortunately the Zespri breeding programme had thrown up SunGold which is tolerant of Psa."

Richard was also the chairman of the EastPack Entity Trust. He has been closely involved in mentoring and advising on the new varieties that have been commercialised by Zespri.

The move to three different kiwifruit varieties and their differing growing periods has advantages. "Having different varieties allows us to work all year round. So we can employ permanent staff and bring in contractors at the busy times."

At one time Glenview employed up to 60 seasonal staff, but has returned to 'core' orcharding and now peaks at about 25 workers.

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Kiwifruit vines with irrigation ponds in the foreground

The quality of labour varies widely, Richard says. Glenview has not used Recognised Seasonal Employer (RSE) scheme workers so far. It has relied on local contractors and the labour it could find - even the local rowing squad and university students.

"Constant supervision is required in the first stage of harvesting the fruit. After that, everyone in the supply chain must do their bit properly.

"With apples, bruises become apparent quite quickly but with kiwifruit, damage from incorrect handling may not become obvious until six to ten weeks after harvest."

In a reasonable year, Glenview will produce around 15,000 to 16,000 trays a hectare in Gold, 10,000 trays in Hayward and 9,000 to 10,000 trays in Red. In the 2022 season Glenview achieved the top OGR (Orchard Gate Return) among EastPack Waikato kiwifruit growers for its Gold crop.

"That was a welcome recognition for the effort our staff and contractors make in our orchard."

But then there was the October 2022 polar frost event. As with many Waikato and Bay of Plenty growers, Glenview

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experienced widespread damage. It is now focused on the need to better prepare for similar cold snaps in future.

"We lost 100 percent of our Hayward crop and about 60 percent of Gold. We cut back about one-third of our Gold vines to allow them to regrow over the summer. The Red crop was protected by water and it survived. The polar frost was supposedly a once in 40-year event. We do have frost protection over the Red and 7ha of Gold with sprinklers putting out about 2.5mm of water an hour," says Richard.

"Going forward, we're doing a lot of upgrades in risk management, frost protection and irrigation. We're hoping we'll get enough fruit from this season to break even.

"It (the frost) knocked us around. But not just us. About 65 percent of the Hayward in the Waikato has gone and a large chunk of the Gold. The effect will really be felt next year. At the moment we're still getting income from last season.

"We are mindful that there are growers who have lost their crop, and those growers do need support from their fellow growers."

Glenview is in the midst of farm succession planning. Richard is the operations manager, his son Matthew, 34, is the orchard manager.

Matthew has a Bachelor's degree in science with a major in Earth Sciences and a graduate diploma in Business Management - all through Waikato University. Matthew worked for EastPack in the Bay of Plenty for four years, then went on OE before taking on this role.



Shay Burnside and Morgan Kirkham

# Kakepuku Kiwifruit kicks off

What is probably the Waikato's newest kiwifruit start-up is a learning experience and an adventure for couple Shay Burnside and Morgan Kirkham.

> Geoff Lewis Photos: Trefor Ward

Incorporated in 2019, Kakepuku Kiwifruit Ltd covers 8.3 hectares on easy country to the south-west of Te Awamutu. It is 85 percent owned

by Kirkham Group family interests traditionally in dairy - and is another sign of growing kiwifruit interest in the region.

Following the decision to make a move on the horticultural venture, kiwifruit rootstock were planted in 2019 on paddocks which a few years before, were used to grow fodder crops like sorghum and lucerne.

Morgan grew up on the family farm which is overlooked by Mt Kakepuku - for which the business is named. She undertook her early schooling at Pokuru about 10 minutes' drive away. These days Morgan

> is a chartered accountant handling, with her parents, Jim and Deb Kirkham, the banking and financial side of the family businesses involving three dairy farms and partnerships covering another two.

> > Five years ago, the first practical steps were taken to expand into kiwifruit.

"The big reason for going into kiwifruit was that dairying has its ups and downs. Kiwifruit are a means of diversification and of spreading the risk. However, it was a significant investment for the family in an industry largely unknown in the Waikato.



Shay Burnside training young kiwifruit vines



Young kiwifruit trained on leaders

"Compared to dairying, there are a few more years involved with kiwifruit before you start seeing a return. We are looking to the longer term," Morgan says.

Kakepuku secured licences from Zespri in 2021-22 and has grafted the SunGold and RubyRed varieties. The

juvenile vines are bearing fruit this season but are not expected to produce viable quantities until the 2024 season, when the first harvest is scheduled.

The development of the orchard has had its challenges, especially with managing the vines. It's a lot more hands-on than we originally thought

Morgan's partner Shay comes from a background in trucking logistics and is Kakepuku's orchard manager. "There's a lot of learning on the job," he says.

The orchard is with Zespri as a marketer and will utilise EastPack's Te Puke packing facilities.

EastPack has also been helpful through its Prospa orchard management division, which offers a full range of services to suit all orchard business structures. At the moment it helps Kakepuku with its spraying needs.

"We've learned a lot from them. They have the technical people and help us with spraying, grafting and meeting compliance requirements.

> "The development of the orchard has had its challenges, especially with managing the vines. It's a lot more hands-on than we

originally thought, but thankfully, we have a good team supporting us.

"There are several kiwifruit orchard operations in the neighbourhood. As they aren't really in competition with each other, there is a good amount of cooperation and general support," Shay says.

Kakepuku went for the RubyRed and SunGold varieties because they believe they will provide a better return than the older Hayward.

"While 'Red and 'Gold are more expensive to get, they are showing strong returns. We are still developing our canopy, which is currently growing leaders and laterals. We are also in the process of installing a new irrigation system," Shay says.

Not being at commercial production level yet, Kakepuku was not greatly affected by the October 2022 frost event.



Kiwifruit vines with Mount Kakepuku in the distance

"Gold was relatively unaffected by the cold but the 'Red had a harder time."

The orchard is well netted against hail and the prevailing westerly winds. This netting also helps to keep warmth in the canopy and extends the growing season, Shay explains.

There are several kiwifruit orchard operations in the neighbourhood. As they aren't really in competition with each other, there is a good amount of cooperation and general support

Water comes from a bore and consents have been obtained for some irrigation, but not for the quantities needed for frost-protection at this stage.

Cheaper land prices - than comparative blocks in the Bay of Plenty kiwifruit heartland - and changing climate may be behind current expansion of kiwifruit in the Waikato, Shay believes.

"We are currently focusing on getting this development up and running, but may look to future developments," he says.







Freshly harvested olives at Dunford Grove near Cromwell

# A fruitful 'retirement' in idyllic location

On the quiet shores of Lake Dunstan near Cromwell lies an olive and hazelnut grove owned by Jocelyn Robinson and Sandy Black. HELENA O'NEILL speaks with the couple about their slice of Central Otago paradise.

It was the perfect spot to transition to retirement in a place where it feels like you're on holiday. Or so they thought, says Sandy.

"We were in Dunedin looking around for where we were going to finish up – this is our retirement," Sandy says. "We had a top end B&B in Dunedin and a travel agent from London came to see us one day. She said that when they plan their clients' trips to New Zealand, they always take them from north to south because they want them going home on the wow factor.

"About ten days later, this property was advertised in the *Otago Daily Times*, the feature property for the week's property pages. The agent had got someone to park their boat in the front and the photo was taken from the other side of the lake. So, there's the photo: Lake, boat, house,

grove, Pisa Range. Bang! We had been talking about not wanting a house and a holiday home but a house that I can say I'm on holiday," he says.

"He failed miserably," Jocelyn laughs.

"We bought this property for what it is, not the grove. The trees were behind the house, tucked out of sight in the initial photo we saw of it. We learned an awful lot, very quickly," Sandy says.

"Fortunately, the New Zealand olive industry is quite small and it's like a big family. About 98 percent of the people are just lovely and will share everything and anything that you need to know. It's marvellous."

The property includes 1000 olive trees and 400 hazelnut trees. The couple grow the Italian varietals Leccino, Frantoio



A tree shaker is used to harvest olives

and Pendolino which are the most frost-tolerant, with a small amount of Manzanillo for table olives.

The flavours of the oils vary widely and just like wine, are dependent on the variety of olive pressed, the area of New Zealand in which the olives are grown, the time of harvest and of course, how quickly they are processed after picking.

Jocelyn says the olives are picked by a combination of machine and hand-picking and delivered to the neighbouring Olive Press Central Otago. It's a short trip to Stephen and Olivia Morris' property to get their olives pressed.

"We're lucky as the press is across the road and up a driveway... when we take the afternoon fruit up, we bring the morning oil back."

The oil is returned to Dunford Grove in stainless steel barrels and is left to settle for a few days before draining off any sediment, repeating the racking process several times before pumping the finished oil into storage tanks. Due to the cooler temperatures, the sealed tanks are stored inside the house rather than in a shed to keep the oil warm enough to prevent it from solidifying.

From there, Sandy and Jocelyn blend a combination of varietals to create a balanced oil. When blending, they aim for a fruity, vibrant, peppery oil with an intense green colour. Finally, they bottle to order into dark glass bottles, and finish with food-grade nitrogen to keep out any oxygen before capping.

Unlike wine, olive oil does not improve with age, fresh is best, Sandy says.

"The earlier you harvest the olives the better the taste, the more flavour in the oil. If you leave the olives on the tree longer then you get a better yield. It's a trade-off between taste versus the amount of oil that you get," he says.

"The earlier you pick, the higher the polyphenol levels tend to be. For the people who take olive oil for the purposes of their health, they want the higher polyphenols," Jocelyn says.

Each season, the oil is sent off to Australia for certification. The chemical analysis could be done in New Zealand labs, but the oil needs to be tasted at a sensory panel to achieve certification.



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Jocelyn explains about olive oils at the Remarkables Market in Queenstown

"You can have an oil that passes the chemical analysis to be called extra virgin, but if you don't have a sensory panel – in other words, tongues tasting it – it could have a fault that isn't otherwise picked up," Sandy says.

An example is frosted oil which would pass the chemical analysis but not the taste testing. Dunford Grove sends their oil to Olives New Zealand which sends off a large group of olive oils to Australia for testing.

The free fatty acid (FFA) level measured as oleic acid must be less than 0.5 percent and the peroxide value less than 15 mEq (milliequivalent) per kg. The standards for extra virgin olive oil set by the International Olive Council (IOC) are less than 0.8 percent FFA and a peroxide value of less than 20.

"We have no issues with frost at this time of year, as the olive trees flower in the middle of December. It's the other end of the season when we're heading towards harvest, that we have to watch the frost," Sandy says.

"If the fruit gets frosted, there's no point pressing it because it taints the oil," Jocelyn adds.

The Pendolino variety is the first to ripen, soon followed by Leccino.

"We pick in varietals and keep them separate until we've had them tested and seen the results. We also blend to taste."

For competitions, the couple do two grower's blends, and whichever gets the best result becomes the blend for the year. The remaining oil is used for their infused olive oil range. This year their commercial intense blends won a gold and silver medal at the 2022 New Zealand Extra Virgin Olive Oil Awards.

"Last year one of the varieties, the Pendolino, was so bitter that it was never going to meet the New Zealand palate, so we gave it to a lady who turned it into soap for us to sell," Sandy says.

Each weekend, they visit three farmers' markets. Sandy has a 4am start on Saturday to do the Otago Farmers' Market in Dunedin while Jocelyn does the Remarkables Market in Queenstown. Sandy then heads to the Cromwell Farmers' and Craft Market on Sundays.

During Covid-19 restrictions, the couple were busy sending their olive and hazelnut products right around the country and when the farmers' markets were able to reopen, they were busier than ever.

Dunford Grove sells extra virgin olive oil, three infused olive oils – lemon, garlic, and chilli – as well as olive oil soaps, dukkah, vinaigrette, olive salt, olive powder, along with dry roasted hazelnuts.

"It's a working holiday. It's outdoors, it's physical, you don't have to do it every day. And the other thing about farmers' markets is that you're there as a vendor with all these other food-focused people and the interaction over food is just awesome," Sandy says.

The couple aim to practise sustainability in all facets of the business. The orchard is spray-free, and all waste is composted, including the pomace (olive paste) left from pressing, which is trucked back to the grove and added to the compost heap. Smaller prunings are mulched straight



Sandy mans the Dunford Grove stall at the Otago Farmers' Market in Dunedin



Dunford Grove's 2022 gold medal winning extra virgin olive oil

back on to the ground between the trees and the larger branches are turned into biochar which is returned to the soil along with the compost and seaweed teas.

"Our aim is to have our soil and trees in the best health possible with zero chemical interference. The result is topquality award-winning olive oil," Jocelyn says.

#### 66 The couple aim to practise sustainability in all facets of the business. The orchard is spray-free, and all waste is composted

"We aim to use everything left from all aspects of the olive growing process. Oil left after racking is used to make our pure olive oil soap, an absolute joy for those of us with skin conditions. Remaining branches become firewood in the home fire with the ash added to the compost, while the largest branches are turned into olive wood dipping bowls and olive spoons."

As for the hazelnut orchard, they have 400 Whiteheart trees along with a few pollinator varieties.

Towards the end of February and early March, the hazelnuts begin dropping.

"Ideally, we should get them all picked up before we start the olive harvest. Because we don't spray, it's a bit of a nightmare. All of the equipment for picking up hazelnuts requires a scorched earth approach, so we just sit under the trees and pick them up one at a time. It's very tiresome."

Despite the olives taking priority, Dunford Grove's hazelnuts sell out every season.

"It's a lot more work than we realised. But we love olive oil. The hazelnuts aren't my favourite but that's because they're so much work," Jocelyn says.

"We've made some great friends across the country through Olives New Zealand. We live in this magic spot. Central Otago is a pretty magical place to live."



# Flat peaches proving popular in NZ

Aimee Wilson

Three New Zealand orcharding families from different parts of the country collaborated in the early 2000s to propagate, grow and market the Flatto<sup>TM</sup> peach, which is now sold in both the domestic and export markets.

It started with Clyde Orchards owners Kevin and Raymond Paulin. They came across a distinctive variety of flat peach while travelling in France, and thought it would be interesting to exclusively grow it back home in New Zealand.

Waimea Nurseries in Nelson imports the budwood into the country and propagates new varieties from the original 'Sweet Cap' that came from France. In total there are now three white varieties (Platifun, Platibelle, Sweet Cap) and one gold (Oriane) grown at Clyde Orchards.

Waimea has been building relationships with breeding programmes around the world, that enable them to bring new varieties to New Zealand through its onsite quarantine facility.

The company was established in 1971 by Doug and Georgi Simpson. The nursery is now owned and managed by Doug and Georgi's son Michael and Angela Donaldson.

Then along came The Yummy Fruit Company in Hawke's Bay, looking for an industry partner that grew stonefruit later in the season, and found that Central Otago was the perfect source of fruit for the school lunch market in February.

The Yummy Fruit Company has been involved with Clyde Orchards for over 20 years as a marketing partner, and company sales and marketing general manager Aaron Knowles says with both orchards being family run over many generations, they have a similar structure and closely aligned business values.

"They are both innovative types of people and there are synergies with that," he says.

The Paynter family began its fruit growing journey back in 1862, and the Yummy brand was born in 1974, but the stickers didn't start to appear on fruit (apples first) until 1995.

John Paynter was the first grower in New Zealand to label his fruit, and now the Yummy apples, peaches and nectarines are a household name.



Clyde Orchards manager Kris Robb amongst the Flatto™ peaches that are grown exclusively on the orchard for both the export and domestic market

From the Yummy Fruit marketing office in Auckland, Aaron will have regular conversations with the growers Kevin and Raymond, as well as Clyde Orchards manager Kris Robb regarding the Yum-my Flatto™, and this season the gold variety is looking bigger than previous years, but with similar volume to last season's crop.

Flattos™ are a unique product because not only are they easy to handle for consumers and sit well in kids' lunchboxes, they also have a larger flesh to stone ratio

The gold fruit is yellow, sweet, with low fruit acidity and has a melon-like flavour, whereas the traditional white fruit is sweet and juicy, but can be eaten both hard like an apple or when fully ripe.

As well as Clyde Orchards, there are now several other orchardists around New Zealand that grow their own variety of flat peaches too.

In Europe there are more flat peaches than round ones, but here in New Zealand they are still a bit of a novelty.

The new varieties at Clyde Orchards ripen earlier in the season, from mid to late January, so it gives them a longer growing window, and also creates a better sales programme for retailers, Kris says. "The beauty of them is they have a really good eating profile from early on," he says.

Flattos™ are a unique product because not only are they easy to handle for consumers and sit well in kids' lunchboxes, they also have a larger flesh to stone ratio.

"The stone is actually smaller," Kris explains.

People love them because the flesh doesn't adhere to the pip in the same way as it does in a regular peach, so you don't finish the eating experience covered in juice.

Aaron says the Flatto™ is unique in many ways because visually it doesn't look like anything else, "It looks a bit deformed really," and they are a much "tidier" eat than traditional peaches.

"There's quite a lot of flesh around it so you can hold the stone between your thumb and forefinger."

Although slightly more labour intensive than traditional peaches, because of the need for hand packaging into individual punnets, advanced breeding over the past 15 to 20 years has seen consistent quality in the Flatto™ fruit, which are sweeter, better to eat and can be eaten quite firm. Now some 30 percent of Clyde Orchards is dedicated to growing the flat varieties, with a third of the product exported to Asia, North America and the United Arab Emirates, and the rest dedicated to the domestic market.

#### **History**

Flat peaches are a rediscovered heirloom fruit which are well known in Chinese culture. People called the fruit the 'peach of immortality' in ancient times.

In fact, the story goes that peaches were treated with such reverence that they could be planted only within the royal precincts of the Chinese emperor.

This conventionally-bred fruit - otherwise known as a 'doughnut' peach in Europe - are the result of thousands of years of breeding and mutations, from a rich pool of genetics in China.

In 1871 they were introduced to the United States, where large-scale commercial growing started, but they fell out of favour with consumers, and it wasn't until the 1990s that the flat peach became popular again worldwide.



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# Kiwifruit test case enters new round of court action

The Valuer-General says SunGold kiwifruit licences should affect the capital value of land; a Gisborne grower says they should not. KRISTINE WALSH keeps an eye on the developing test case.

The High Court has granted a grower of SunGold kiwifruit the right to appeal its judgment in a test case that would increase his Council rates "because of the significant issues and interests at stake".

The case dates back to July 2021 when Gisborne District Council (GDC) charged kiwifruit growers rates based on 2020 valuations that included the value of SunGold licences.

At the time the rates were set, the Zespriissued licences were selling for \$800,000\$900,000 a hectare and that made a big difference to valuations, and therefore to rates bills.

In response, New Zealand Kiwifruit
Growers Inc (NZKGI) called on local
grower Tim Tietjen (Bushmere Trust) to
act as its case study frontman, lodging
an objection to his property valuation
(from \$1.65 million to \$4.1 million)
with the Land Valuation Tribunal, and
in August 2021 taking a judicial review
proceeding to the High Court.



#### Among the NZKGI arguments at the tribunal hearing were:

- Kiwifruit licences are not attached to the land so cannot be viewed as an improvement for rating purposes.
- The new policy is inherently unfair in that SunGold kiwifruit growers will pay much more than their cropping neighbours.

#### Among the GDC arguments were:

- The SunGold (and other) licences that growers might buy from Zespri are "inherent and fundamental" to the capital value of the land and the addition of a licence "unlocks the value and potential of any given property".
- A licence is "work done on or for the benefit of the land by the expenditure of capital", and "attaches and is complementary to other improvements as defined under the Ratings Valuations Act".

In the end, the tribunal sided with NZKGI by ruling that gold licences were neither an improvement nor benefit to the land, so could not be assessed as part of the rating valuation, and Bushmere Trust's valuation was scaled back to \$2.8 million.

However, GDC didn't agree and in February 2022 announced that, with support and financial backing from the Valuer-General, it would appeal the Land Valuation Tribunal decision via a High Court hearing.

At the time, GDC noted the Valuer-General's belief that the Land Valuation Tribunal's decision was "inconsistent with past case law decisions and the Rating Valuations Act 1998 requirement to value established vines as improvements" and removal of the licence value "creates an inequitable outcome for ratepayers, unfairly reducing the valuation and rates burden for some property owners and increasing the rates burden for others".

The Valuer-General considered it to be in the national public interest for the matter to be heard, GDC added, and as such "there is an obligation on Council to appeal".

In August 2022 the High Court overturned the tribunal's ruling, saying that when land was sold the price reflected the value of the vines and licences, which almost always transferred with the properties.

NZKGI responded by saying it would apply for the right to appeal (via Bushmere Trust as the test applicant) as the decision could be wide-ranging across New Zealand, and could also impact on other sectors of the horticulture industry where licences are in place.

In an affidavit submitted to the High Court, the office of the Valuer-General defined capital value as the amount for which a property, including SunGold vines, might be expected to sell in a hypothetical market transaction.

"That transaction would include the purchaser becoming the owner of the vines and the existing licence transferring to the purchaser," the affidavit said, "which is how such properties ordinarily transact in the market".

Despite that assertion, the High Court said in its November 2022 judgement that it was granting Bushmere Trust's right to appeal on the grounds that issues around "the application of existing legal principles" could benefit from a thorough test case.

While not commenting on the merits of an appeal, the judgement said "the issues are capable of bona fide and serious argument" so "it is desirable that the Court of Appeal further clarify the law and determine whether it has been properly construed and applied by the High Court".

A date for the appeal is yet to be set.

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Artist Nina van der Voorn in Zappekin

# Relics of the past

The scale and technology of today's apple packhouses would have been beyond the imagination of orchardists who packed their apples in the ageing relics that sit over the water along the inlet near Motueka.

#### Anne Hardie

Decades ago, long before the Mariri causeway was built along the edge of the Moutere Inlet to straighten the road to Motueka, the road traced the natural curves of the inlet and orchardists of the past built their packhouses on the water's edge. At harvest, apples and pears were packed into boxes and barged across the inlet to Port Motueka.

Seventy-nine-year-old Anne Perry grew up on Afalmere Orchard which grew apples and pears on the hillside behind one of those packhouses and her father, Jack Roberts, remembered apples being barged across the inlet. Jack arrived in Motueka penniless and began working on the orchard when it was owned by Mrs Barr during the 1930s Depression. Before she died, she sold the orchard to Jack at an affordable price.

As a child, Anne spent the harvests in the packhouse where the children were "babies in apple boxes", then later managed the orchard with her sister and brought up her own family there.

"We used to stack wooden boxes in a circle so the children couldn't escape," she remembers.

"My sister and I inherited the orchard and managed it ourselves until we sold it in the 1970s. It was idyllic. A gravel road went around the edge of the inlet and it was five miles into Motueka. We would go to there on Friday night to do our weekly shopping. It was a major trip to go to Nelson."

The sisters had one permanent staff member and hired a few itinerant workers through harvest, like the other small orchards that were dotted along the edge of the inlet.

Today the packhouse still sits over the water when the tide fills the inlet and flows through culverts to its original edge. The building no longer has any land which limits its use and is currently used as a storage unit for a business.

A couple of bays south of Afalmere, another old packhouse sits on the water's edge and while its exterior has changed little over the years, its interior is home to an eclectic array of artwork and now an occasional gig as well.













🚺, 2 A packhouse turned gallery, 3-4 The Afalmere Orchard packhouse, 5 An old packhouse butts the causeway, ዕ Zappekin

For a decade, carver and artist Tim Wraight ran his Sealevel Studio Sculpture Gallery in the packhouse and he already knew the building well from his time working on the orchard in the late '70s.

"It was in use right up to the late '70s as a packhouse, before the amalgamation of all the packhouses into bigger concerns.

"When I came in 2000, I had to rebuild parts of it - had to reroof it and put bracing in so it didn't fall over. It is a lovely building with rimu, matai and old man pine. A really lovely

feel to it. A bit porous though."

The packhouse sat empty for a while after he moved on, but now it has a new energy pulsing within its interior and a new name, Zappekin. The name has been created by an art collective to describe "a group of artists and allies banding together, zapping things into existence and forming kinships." The group operates a gallery through summer, holds community workshops and has begun holding the occasional gig.





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Botanist Dr Ross Ferguson (ONZM) (right) and Chris Webb of the Royal New Zealand Institute of Horticulture, were in Gisborne to congratulate David and Judi Grey on being awarded the RNZIH's prestigious Plant Raisers' Award

# **Growers honoured** for avocado cultivars

Like his father and grandfather before him, David Grey is a pioneer in the avocado industry. David recently returned to his 'horticultural roots' to receive special acknowledgement of his cultivating efforts and contribution to New Zealand's avocado industry. KRISTINE WALSH reports.

More than 60 years after they last saw each other, two Gisborne Boys' High School alumni were reunited as a pair of horticultural heavyweights.

Botanist Dr Ross Ferguson (ONZM) has already received a number of awards, particularly for his work in the kiwifruit industry. And at the school's endof-2022 junior assembly it was the turn of local avocado grower David Grey who, with his wife Judi, was awarded the Royal New Zealand Institute of Horticulture's Plant Raisers' Award for their work in developing three new greenskin varieties.

Auckland-based Ross Ferguson said seeing David after so many years made it an extra special occasion, but it was his plant-raising

work he was there to acknowledge.

"It is good cultivars that really help in industry and David and Judi's cultivars are very, very good indeed," Ross said.

Also in Gisborne for the presentation was RNZIH fellow and executive member, Chris Webb, who urged the boys gathered to consider working towards a "wonderful" career in horticulture.



"You, too, can achieve great things," he told the students, who responded to the presentation with a resounding haka.

The Greys' award was for the GreyStar, Eclipse and Titan varieties developed at their Avogrey Orchard.

But while the licensed varieties are new, they have the heft of history behind them... 2021 marked 100 years since David's grandfather, Charles Grey (1876-1952), planted the country's first avocado trees at his Waimarae Orchard at Ormond, just north of Gisborne.

It was a passion inherited by his son Len (1916-1993), David's father, who in the 1940s, 1950s and 1960s brought in new varieties for trial and established the first major avocado orchard in New Zealand, along the way introducing the Hass variety, which today accounts for around 90 percent of plantings around the country.

Chris Webb told the Boys' High assembly about the family's history of growing avocados, describing David's mother Dorothy as "the influencer of her day, who travelled from one end of the country to the other to promote this strange new food".

It was a tradition continued by David and Judi who in 1968, just under 50 years after Charles' first plantings, established their 12.9-hectare Avogrey Orchard at nearby Waerenga-a-Hika.

Then some 30 years later the Greys started developing their trio of new varieties with the aim of creating the "Rolls Royces" of avocados.

Back then, in the late 1990s, the Greys followed the advice of a scientist from the University of California by working with the Sharwil variety, aiming to build on its great taste by developing high-yield, healthy trees.

The result is the three new varieties which, according to the

Greys, all fruit young, and fruit heavily.

David and Judi applied for Plant Variety Rights in 2015 and received confirmation for GreyStar in 2018, Eclipse in 2020, and Titan the following year.

Preferring to focus on growing, the couple's Avogrey Heritage Trust signed a deal with MG Group to handle both the tree sales and the distribution of the resulting fruit.

"While they have all this history behind them, David's curiosity and restless nature meant he was always looking for new and exciting developments," Chris Webb said.

"That is what led to them being selected for the prestigious Plant Raisers' Award."

66

#### David's curiosity and restless nature meant he was always looking for new and exciting developments

Though well into their seventies, David and Judi have backed their own achievements by adding to their existing stocks of the licensed varieties with 2022 spring plantings of 125 Eclipse trees, creating space by sacrificing some older Hass and Reed trees that were past their best.

And the Greys had plenty of time to prepare the site... even they had to wait 18 months for their order of trees.

"It has been a long journey to get to this point and the work has been inspiring all along the way," David Grey said after receiving the award.

"I'm not really one for getting up on the podium, but it was wonderful to receive reinforcement that all the work was worthwhile, and has added value to our industry."

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#### **GREAT INTEREST IN GREENSKIN LICENCES**

The uptake of trees for three new licensed avocados has been so successful that sales have been temporarily halted to avoid over-subscription.

Developed by Gisborne growers David and Judi Grey through their long-standing Avogrey orchard, the Plant Variety Rights of the greenskin varieties were confirmed in 2018 (GreyStar variety), 2020 (Eclipse) and 2021 (Titan).

With local nursery Riversun on board as sole propagator, the Greys' Avogrey Heritage Trust signed a deal with MG Group to handle both the tree sales and the distribution of the resulting fruit.

By mid-2021 there were already more than 4000 trees on order or in the ground, and orders for trees for 2022 were close to capacity.

Add to that the number of trees ordered for 2023 and MG Group decided it was time to take a breather to avoid an oversupply of the varieties they have been charged with handling and marketing.

"From a standing start we already have more than 30 hectares (around 10,500 trees) either planted or on order so we're just taking some time for market assessment," says the company's manager of new product development, Michael Breitmeyer.

"This is common practice for managed varieties and allows us to carefully manage production to avoid any risk of a price crash in the future. However, we do believe we will be able to reopen orders in mid-2023, likely with an 18-month wait for delivery."

And Michael says the media has had a big part to play in the popularity of the new varieties.

"Way back in August 2021 the Greys featured on an episode of the television show *Country Calendar* and we are still getting enquiries stimulated by that," he says.

"However, we have had to put off many people who just

want a few trees as purchases have been limited to a minimum of two hectares... about 700 trees."

That helps MG Group ensure they are dealing with serious growers who follow good practice, and will also result in efficient management of the fruit once production comes on-stream.

"For that reason we have also been careful around the locations of prospective growers," Michael says. "They need to be located with easy access to our packing options, or at least have decent transport links, to ensure their crops can be well managed in a timely manner."

To date, licence options have mostly been approved for growers in Gisborne (77 percent) and the Bay of Plenty (13 percent), with much of the remainder going between Northland, Coromandel and Hawke's Bay.

"We know they'll do well in those areas, especially their home region of Gisborne, but are interested to see how successfully they can be grown further afield," says Michael. "So we also have a few in Motueka in the South Island, to see how they'll go."

Once planted, the trees need time to establish a frame strong enough to carry the fruit that should appear within a couple of years, building to full production at the age of five-to-seven years.

And once that happens, Michael Breitmeyer believes the market - both domestic and export - will be ready and waiting.

"These varieties have already proven themselves in terms of both taste and quality and there is always room in the market for premium products," he says.

"We also have an advantage in that the plantings are staggered - rather than all going in at once - which gives us time to work with the retail market and establish effective marketing programmes."

#### LICENSED AVOGREY GREENSKINS:

#### GreyStar (12-15cm)

Featuring rich, nutty flavour and creamy texture, was developed from the Sharwil avocado and produces large, small-stoned greenskin fruit that cuts well with no stringiness.

Produces fruit that is mature on the tree between December and March. Weight averages 400g.

#### **Eclipse (12-15cm)**

Offering great eating and resistance to ripening disorders, produces ovate fruit that hangs on the tree well from April through to June and beyond. Weight averages 400g.

#### Titan (12-17cm)

A B-type pollinator producing fruit that weigh up to 700g and with a relatively small stone, offering a large proportion of flesh. Mature on the tree from November to January.





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Eric and Noreen Johnson with their daughter Hannah, son-in-law Vinnie and grandchildren

# New season of berry bounty from Dunedin farming family

In a quiet suburban street on the outskirts of Dunedin lies a two-hectare commercial blueberry farm, tucked away in its own microclimate. Eric and Noreen Johnson have owned Blue Willow Blueberries for more than 20 years, but are now looking to the next generation to continue the family business. AIMEE WILSON reports.

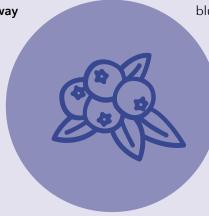
Blue Willow Blueberries is currently halfway through an eight-year succession plan, transitioning the operation over to Eric and Noreen's daughter Hannah and son-in-law Vinnie Booiman.

Eric and Noreen bought the property from the late Peter Waters, who once exported 300kg of blueberries a season back in the 1980s.

Because of the short window for picking, the family decided Pick Your Own (PYO) blueberries was best, with offerings eventually expanded by way of selling at the Otago Farmers' Market.

The operation continues to supply the market today, employing one or two pickers to help them get orders ready for the market when the season is in full swing.

The family is now looking at new, alternative markets to try and scale down the PYO side of the business - which has



grown at an exponential rate in recent years. The sheer volume of summer crowds that PYO attracts each year has also kept Eric and Noreen involved in the business despite best intentions to fully hand over the reins.

Come opening day in early January, Blue Willow Blueberries welcomes upwards of 1000 people through the orchard for PYO blueberries.

Day one of the season completely blows them away every year.

"There is a constant stream of pickers arriving throughout the day," Hannah says.

Blue Willow Blueberries welcomes upwards of 1000 people through the orchard for PYO blueberries

Social media has meant the already busy blueberry farm continues to get new people visiting for several weeks of the year as the word spreads. Then there are the loyal customers, with the same families coming back each year to pick a specific crop.

The Johnson family love their little piece of paradise set amongst duck ponds, gardens and willows, with its serenity - and it is clear that visitors love it too.

"But by the end of the season we are sometimes struggling to know what we love about it," Eric jokes.

The work is labour intensive and requires a full family effort. Hannah was brought up picking the fruit, but with two colour blind brothers, she jokes that they weren't much help.

You would think it was obvious to people visiting the orchard how to pick a ripe blueberry, but Eric says sometimes logic goes out the window.

"We do tell people to pick the blue ones.

But there is a definite mythology to picking them," Eric says. "They grow in a bunches

but not all of them are ripe at once - you have to gently roll your fingers over

a bunch, this encourages the riper berries to roll off into your palm [or] waiting container.

"Once they come off the bush, they don't ripen any further," Hannah says.

The couple don't just have the orchard to keep them busy - Hannah is a nurse and also takes care of their two young children,

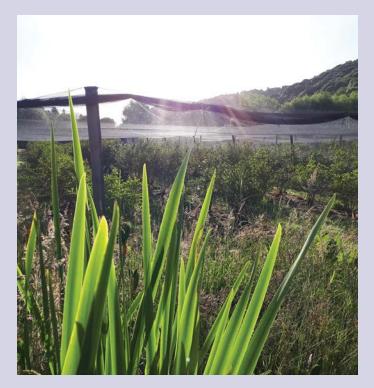
and Vinnie is a full-time agribusiness programme manager. Hannah says being out amongst the blueberry bushes in the orchard and listening to the birds singing is a great way of switching off from their day jobs.

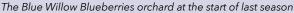
"It's a beautiful atmosphere," she says.

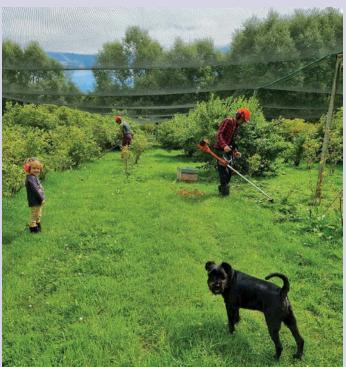
Do they ever get sick of eating blueberries? A resounding "never" comes from all four family members, followed by suggestions of how to consume all their bounty: put them in salads, make a smoothie, add them to breakfast cereal, or just eat them by the handful.











A true family operation...

There are many blueberry varieties growing in the orchard with three main ones - Brigitta, Nui and Blueray, planted when they expanded the orchard from its original 800 bushes. These are the most suitable for the climate in the south. Some of the original blueberries from 40 years ago are still going strong.

The older varieties have a distinct taste and although they can be smaller in size, they don't lack for flavour and shouldn't be overlooked when picking, as they are particularly sweet.

There is no advanced technology used on the orchard - Vinnie and Eric spend hours patching up the holes in the nets, keeping on top of weeds and mowing the lawns among other things. During the season, most evenings are spent picking and sorting through the picked berries to find any squished fruit and removing stalks, leaves and the odd spider.

This season marks the first that the company will operate as certified organic under BioGro NZ, a process which has taken four years.

Eric says the orchard has never required pesticides or herbicides, and the bushes themselves have never needed spray at all, with spray only applied for weed control around the bushes.

Being an organic operation, Blue Willow Blueberries completes regular soil testing to measure chemical residues and determine the overall soil health, with an audit being completed on their orchard management plan once a year.

"There is increased consumer interest in sourcing organic and sustainable product," Vinnie says.

The orchard has grown to 2000 bushes, and opting for an organic operation requires particular effort to control perennial weeds such as ryegrass, plantain, dandelion, curly dock and the troublesome couch grass.

# There is increased consumer interest in sourcing organic and sustainable product

Despite many orchards being affected by October's devastating frost damage, Vinnie says Blue Willow Blueberries were more fortunate and are expecting their season to be "business as usual".

"We have the benefit of being slightly later in the season," Vinnie says. "We had a bit of snow damage that snapped the smaller branches, but nothing too serious."

"And blueberries actually benefit from colder temperatures while dormant over the winter," Noreen adds.

The Blue Willow Blueberry farm will be producing berries from early January through to mid-March 2023. ■

#### **AVO UPDATE**



## The arrival of 2023

Jen Scoular: NZ Avocado chief executive



I am not a big celebrator of New Year, and this year I was particularly reticent about the arrival of another year.

Since 2015, NZ Avocado has been thinking about hosting a World Avocado Congress. For seven years it's always been in the thinking. In 2019 in Colombia, we won the rights to host the 10th World Avocado Congress, having previously been beaten in Peru four years prior. So on 31 December 2022, it was the last time I could say - oh yes, that's next year. Wonderfully, I woke on 1 January 2023 and thought oh wow, it's this year!

We have worked incredibly hard to sell the congress, here in New Zealand and across the world. Hosting a World Avocado Congress is not our bread and butter (we should really make a new saying - 'it's not our avocados on toast!'). But with huge effort from our wonderfully passionate team we have a very viable congress ahead of us. Sponsorship and partnership now exceed our budget, current delegate numbers at 925 are well ahead of budget, and the global contingent is way ahead of budget. This does mean New Zealand sales to Kiwis are below budget we are not sure why more growers aren't coming. We hope they make the positive decision to attend in 2023.

> We have nearly 600 delegates attending from 27 countries outside of New Zealand, and nearly 500 of those are from outside New Zealand and Australia. This is

incredible testament to how highly regarded the congress is amongst the global avocado community.

Risk still sits pretty high in the governance agenda, of Covid-19, of travel bans, of fire or floods. But beyond that we start to imagine how fun it will be to have 1000 avocado stakeholders under one roof. How much noise can those passionate visitors and Kiwis make, as they network and share stories, and partake in a beer or two? How great will Auckland feel with 600 tourists, many of

whom have never been in New Zealand before, wining and dining in the city?

The opportunity is much bigger than avocados from New Zealand. Most of the delegates will see and hear about so much more than avocados. We want to ensure they get a real taste of New Zealand, a flavour for our integrity, our innovation, our openness. We will go wide screen with what they will see in New Zealand, the beauty, the nature, the care for our land and people. What do you think of when you think of amazing New Zealand? The people, the place or the product - or all three surrounded by beauty, by nature and by care. I hope you've bought your ticket!

We have nearly 600 delegates attending from 27 countries outside of New Zealand

How much noise can those passionate visitors and Kiwis make, as they network and share stories, and partake in a beer or two? How great will Auckland feel with 600 tourists, many of whom have never been in New Zealand before, wining and dining in the city?

## **TECHNICAL**

#### THE LATEST INNOVATIONS AND IMPROVEMENTS





# Impacts of in-orchard factors on apple quality

Fruit quality can be defined in different ways, either in relation to "fitness for purpose", "degree of excellence" or "degree of fulfilment of a number of conditions determining its acceptance by the consumer" (Musacchi & Serra, 2018).

Ardi Ash: Research Associate, AgFirst Nelson

With apples, fruit quality includes a wide range of external and internal traits. External traits include size, shape, colour, and absence of skin defects. Internal traits relate to eating quality and consist of taste, texture, nutritional value and lack of internal defects.

Although fruit appearance is what first attracts customers, eating quality later determines whether a customer will buy the product again. There is nothing more disappointing than buying perfectly sized and coloured apples with a boring flat flavour. In fact, flavour is one of the main drivers for the repeat purchases. Flavour can be described as the interaction between taste (sugar to acid ratio) and aroma (quantity and composition of volatile compounds).

> Fruit quality, including flavour, is hugely impacted by pre-harvest factors, while it can only be maintained or lost post-harvest. However, not enough has been done to correlate the in-orchard factors with fruit quality attributes, despite them being a key component. The other factors include the genetics of the fruiting variety (strain) and rootstock variety, as well as environmental factors such as light, wind, humidity, and temperature, which are harder to

control (Fig. 11).

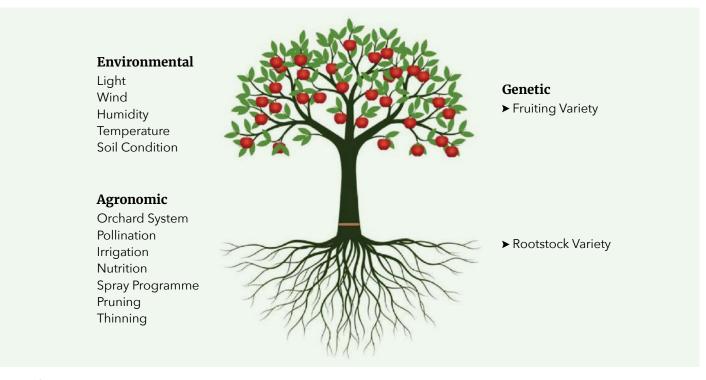


Figure  $oldsymbol{1}$  Agronomic, genetic and environmental factors associated with fruit quality

#### **Key agronomic factors**

#### **Crop Load**

cell turgor.

The number and size of fruit growing on apple trees has a major effect on the tree's photosynthetic capacity and performance. Hence, adjusting the crop load by thinning improves fruit quality attributes through optimisation of fruit to leaf ratios. Therefore, crop quality is closely related to yearly thinning decisions. As a rule of thumb, aiming for the highest yield negatively affects the quality of crops. On the other hand, lowering the crop load often results in higher dry matter as well as higher foreground colour and firmness, both at harvest and after storage. This is likely to be related to the increase in the number of cells in the cortical tissue, and to enhanced

As a rule of thumb, aiming for the highest yield negatively affects the quality of crops

Thinning, in fact, adjusts carbohydrate availability, which has a huge impact on fruit size and quality at harvest as well as return bloom. It evens up the carbon sourcesink relationship by balancing the leaf to fruit ratio, and reducing competition among the fruitlets.

Thinning is the most challenging and critical practice, which can hugely influence both fruit quality and yield. Generally, the earlier thinning is done, the higher the quality of the crop. Therefore, one feasible approach for the apple industry to increase fruit quality is to move to early thinning (bud or spur extinction and blossom thinning) rather than relying on later (fruitlet) thinning, at which time carbohydrates and nutrients are already distributed (wasted) among all the fruitlets.

#### **Pollination**

Pollination is the other key in-orchard process impacting fruit quality in different ways. Although apple flowers are hermaphroditic, most varieties display gametophytic self-incompatibility. Even self-pollinated varieties do not set more than ten percent of fruit. Therefore, commercial cropping is highly dependent on cross-pollination by insects (Garratt, 2014).

A fertilised ovule is considered a source of growth plant regulators (PGRs) such as auxins. Fruit with higher seed numbers often contain higher levels of IAA (indole-3-acetic acid), which promotes ethylene synthesis and thereby, fruit ripening. Poor pollination, on the other hand, may result in low seed numbers, misshapen fruit, and low calcium content (therefore a tendency to calcium-related disorders).

Efficient pollination depends on both intrinsic and extrinsic factors (Fig. 2). Intrinsic factors include the

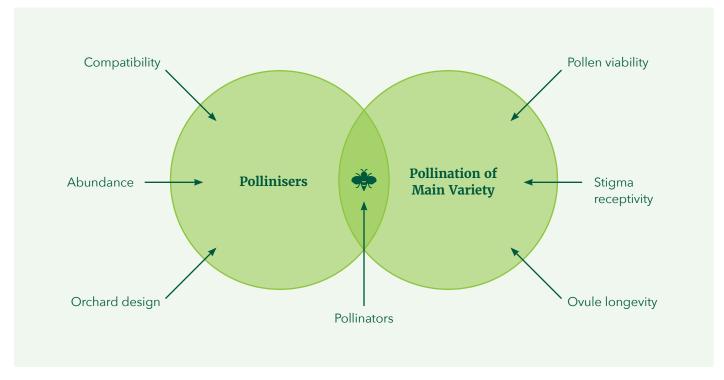


Figure 2 Diagram of factors influencing cross-pollination between polliniser and fruiting variety

availability and quality of compatible pollen, the duration of stigma receptivity, and ovule longevity. Extrinsic factors include weather conditions and their effects on synchrony of flowering, pollinator activity and orchard management practices.

Although natural cross-pollination (by honeybees and bumble bees) is the main means of pollen transfer, artificial pollination can be an alternative, or a complement, to increase the productivity of a wide range of horticultural crops. Artificial pollination often involves four stages: pollen collection, pollen handling and drying, pollen storage and pollen delivery. The pollen is typically delivered to the female flowers either manually (with a brush) or mechanically (with a sprayer or blower). Currently, application of UAVs (Unmanned Aerial Vehicles) including purpose-built drones and robotic bees are being trialled for crops such as almond and cherry.

#### Light

Increasing light interception (LI) by the canopy is a principal in-orchard practice for boosting the colour and flavour of fruit. This can be managed at different stages - from choosing the right orchard system, to pruning, through to the use of reflective cloth during the fruiting stage. For production of high-quality apples, all the areas of the tree need to receive at least 50 percent of the total incident light energy, which is possible under 2D (twodimensional) systems such as V-trellis. In New Zealand, only around ten percent of orchard redevelopment has transitioned to 2D systems so far. Forming the tall fruiting walls (on 7 or 8-wires trellis) can significantly improve

light interception and overall fruit quality. In Australia, where sunlight is abundant, there are ongoing research programmes to find the best canopy design which is capable of intercepting light more efficiently (Fig. 3).

For production of high-quality apples, all the areas of the tree need to receive at least 50 percent of the total incident light energy

#### Irrigation

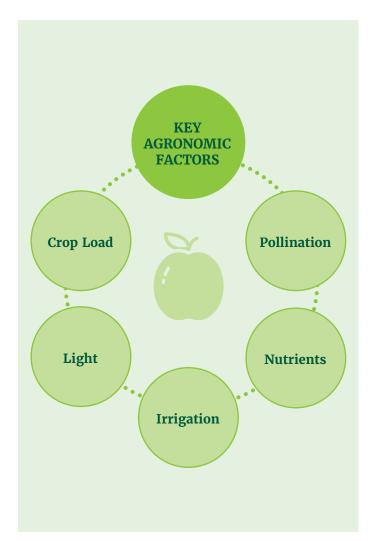
Irrigation is even more critical for 2D apple orchards, where the orchard's economic success depends on high yield and quality in early years after establishment. Maintaining reasonable irrigation levels is crucial for quality improvement. Excess irrigation during the fruit development process often decreases the overall flavour.

There is a new sensing technology available, measuring stem water potential (SWP) - a reliable parameter for continuously determining the relative water content of the trees. A plant's water use is dynamic and changes throughout the day, as does water stress. In fact, SWP sensors work on the principle of using plants as 'biosensors', where soil-water, atmospheric conditions and plant response are integrated.

This is particularly important for growers who benefit from the advantages of mild deficit irrigation, lifting dry



Figure 3 Sundial Research Orchard at Tatura, Australia (APAL)



matter and limiting vigorous growth. Efficient and frequent irrigation gives trees just what they need, when they need it, and no more.

#### **Nutrients**

Mineral nutrition and fruit quality are strongly linked, and some disorders have been identified as an excess or lack of particular elements (Musacchi & Serra, 2018). Hence, both toxicity and deficiency effects of macro and micro-elements must be considered in the development of nutritional programmes (Stiles, 2004). One of the most common apple disorders is bitter pit, which is associated with a low level of calcium (Ca) (Fig. 4). On the other hand, while providing trees with moderate nitrogen (N) supply improves fruit flavour, excessive nitrogen levels can deteriorate it by substituting 'fruity' aromas with 'grassy' aromas. The fruit is also often greener, softer, and more prone to drop. Most of the nitrogen found in the fruit at harvest is accumulated during fruit cell expansion - after the cell division stage (Neilsen & Neilsen, 2009). The optimal N/Ca ratio is around ten, at which fruit can have good storability, whereas high ratios (>30) can cause premature senescence and other disorders.

Fruit quality is also affected by other nutrients including potassium (K) and magnesium (Mg). High levels of potassium increase the risk of scald, bitter pit, and breakdown after storage. Conversely, potassium deficiency reduces fruit acidity, causes poor fruit colouration, small fruit, low organic acids, and low vitamin C. Likewise, magnesium deficiency can



Figure 4 Bitter pit incidence at calyx end of the fruit (Purdue University's newsletter)

adversely affect productivity and fruit quality. Some varieties such as Golden Delicious are very susceptible to magnesium deficiency, causing leaf drop. The regression between the (K+Mg)/Ca ratio and bitter pit development is often stronger than either potassium or magnesium alone.

**Under the current** climate, growers are urged to apply the best agronomic practices to maximise the qualitative traits of their crops pre-harvest, as there is no chance for quality improvement post-harvest



The other element of interest is boron. Boron deficiency has synergic interaction with calcium uptake and can cause internal or external cork in the fruit. Conversely, excessive levels of boron may lead to early maturation and increased incidence of watercore.

It is worthwhile to mention that there might be more physiological disorders linked to excess of essential microelements, which are unknown and need further research.

#### **Conclusion**

With the current dynamic of apple breeding programmes offering a new variety almost every year, nowadays costumers have much more choices and higher expectations. Therefore, only growers whose crops can meet certain quality criteria set by individual markets, can achieve premium prices. Fruit quality is even more sensitive under current global post-pandemic conditions, causing several challenges for logistics and labour supply.

Under the current climate, growers are urged to apply the best agronomic practices to maximise the qualitative traits of their crops pre-harvest, as there is no chance for quality improvement post-harvest. This includes setting an optimal crop load, efficient pollination, maximised light interception, and balanced irrigation and nutrition. Taking these factors into account can ensure the quality of fruit and increase the marketability and subsequent profitability of crops. Otherwise, developing Future Orchard Planting Systems (FOPS) solely in the context of adding new technologies without understanding and integration of these agronomic factors under an intensive production system will not result in practical outcomes.

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# 2022 warmest year on record – again

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

Last year was once again New Zealand's warmest year on record, knocking 2021 off the top spot. It was also the eighth most unusually wet year on record, with heavy rain falling in areas that would usually be much drier.

The nationwide average temperature based on recordings taken at stations in NIWA's 'seven-station series' was 13.76°C, which is +1.15°C above the 1981-2010 annual average, and surpasses 2021 by +0.20°C.

The top four warmest years on record have all occurred since 2016, a trend that is consistent with climate change. We would not have had our four warmest years in such short order without climate change.

#### Warmer than average most months

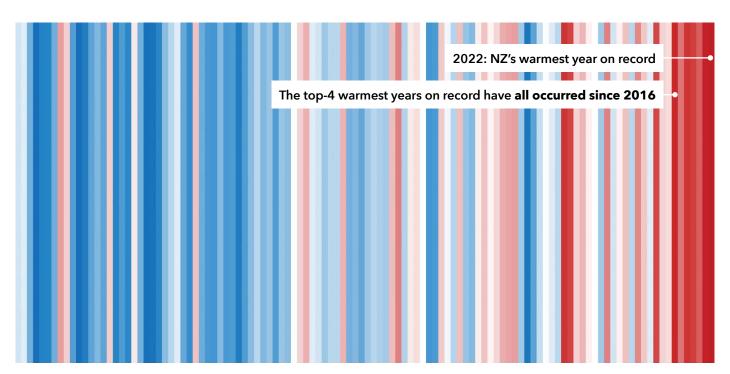
Data from NIWA's seven-station series also showed that there was no month in 2022 when below average temperatures (more than 0.50°C below the monthly average) were experienced, and during ten out of the 12 months temperatures were above average (+0.51°C to +1.20°C above the monthly average) or well above average (>1.20°C above the monthly average).

#### Unusually wet across the country

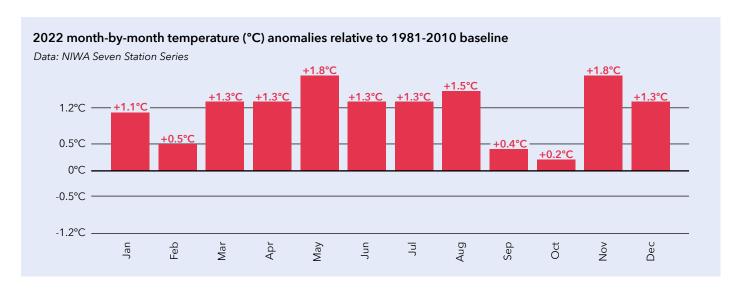
Last year was also New Zealand's eighth most unusually wet year on record, and the most unusually wet year since 2018. This is based on data from NIWA's Virtual Climate Station Network, which goes back to 1960.

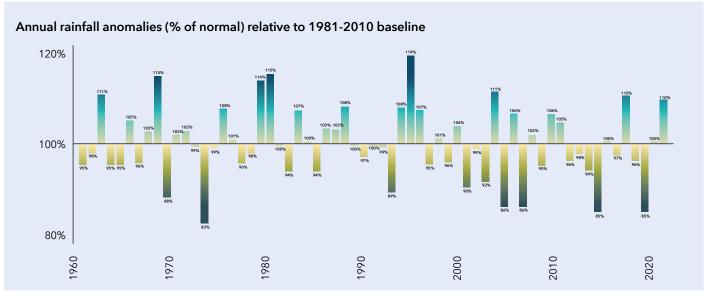
The nationwide rainfall anomaly during 2022 was 110 percent, meaning that it was ten percent wetter than normal - a substantial departure from the norm when averaged across an entire year.

The top four warmest years on record have all occurred since 2016, a trend that is consistent with climate change. We would not have had our four warmest years in such short order without climate change



Based on monthly temperature anomalies from NIWA's seven station series relative to the 1981-2010 average





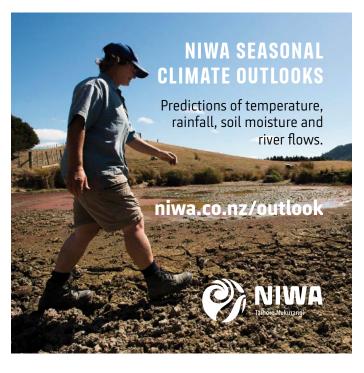
#### Which locations took out the 2022 weather records?

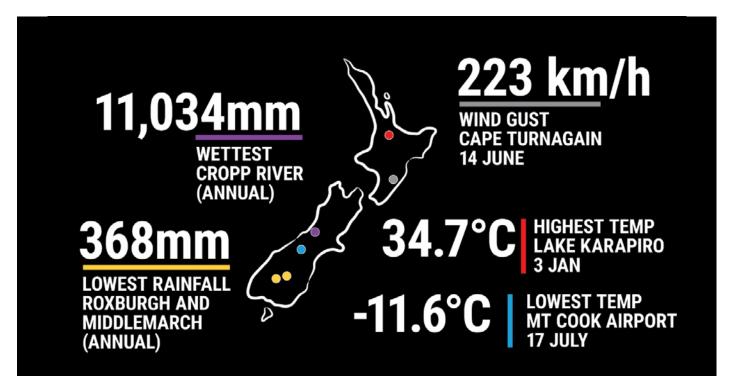
The highest air temperature was 34.7°C at Lake Karapiro on 3 January and the lowest was minus 11.6°C at Aoraki/ Mount Cook Airport on 17 July.

The wettest location was Cropp River on the West Coast (975 metres above sea level) with 11034 mm rainfall. The lowest annual rainfall was at Roxburgh and Middlemarch, both in Otago, with just 368 mm recorded for the year.

Taranaki experienced New Zealand's highest annual sunshine total for the second year in a row, with 2659 hours recorded at New Plymouth. This was consistent with more easterly winds, which warm and dry as they blow down off the North Island's Central Plateau.

The typical sunshine crown wearers, such as Nelson, Marlborough, and Bay of Plenty, had some extra cloud during the year.





2022 weather records

#### Why was 2022 so wet and warm?

Several climate drivers contributed to the unusual warmth and wetness in 2022.

The primary driver was La Niña. The 2022 La Niña event came with higher-than-normal air pressure near and to the east of the country and lower pressures to the north. This pressure set-up caused more sub-tropical, northeasterly winds than normal, driving up air and sea temperatures.

Climate change continues to influence New Zealand's long-term temperature trend, which is occurring at a rate of approximately 1.17°C (± 0.2°C) per century according to NIWA's seven-station series

Sea surface temperatures (SSTs) near New Zealand also had a big impact. Warmer than average sea surface temperatures can drive up humidity and lead to persistently above average air temperatures, especially near the coast. This can contribute more moisture to approaching low pressure systems. During 2022, coastal SSTs were above or well above average every month, culminating in a marine heatwave event around our coastlines for much of the year.

Another climate driver, called the Southern Annular Mode (SAM) - a measure of the strength and position of the westerly wind belt that encircles the Southern Ocean and brings storms to New Zealand - played a

role too. The Southern Annular Mode was positive 76.2 percent of the time in 2022, its highest annual percentage since at least 1979. A positive Southern Annular Mode is associated with higher-than-normal pressures over the New Zealand region.

In the Indian Ocean, a sea surface temperature seesaw known as the Indian Ocean Dipole (IOD) became active during winter and continued through spring. This was associated with higher-thannormal atmospheric moisture across the wider

Australasia region. This extra moisture was picked up and transported into New Zealand by mid-latitude low pressure systems and fronts.

Climate change continues to influence New Zealand's long-term temperature trend, which is occurring at a rate of approximately 1.17°C ( $\pm$  0.2°C) per century according to NIWA's seven-station series.



#### What should we expect for the rest of summer and early autumn?

While La Niña continued during January and sea surface temperatures remained above average, La Niña is most likely to ease to neutral by early autumn. However, there can be a lag between when oceanic patterns change near the equator (where La Niña occurs) and when atmospheric patterns change closer to New Zealand.

Patterns of heavy rain that frequently reached our shores during December 2022 and early January 2023 will likely repeat a few times in the months to come

During February and March air pressure is forecast to be higher than normal over and to the south of the South Island, and lower than normal north of the country. Temperatures are about equally likely to be near average or above average in the north and east of the South Island and east of the North Island, and very likely to be above average across the remainder of the country. In other words, it is unlikely to be a colder than average start to the year.

Rainfall is most likely to be above normal in the east of the North Island, below normal in the west of the South Island, near normal in the west of the North Island, and about equally likely to be near normal or above normal across the remainder of the country. Patterns of heavy rain that frequently reached our shores during December 2022 and early January 2023 will likely repeat a few times in the months to come. Regions that will have weather ripe for holidaymakers but possibly challenging for farmers are the West Coast, Otago and Southland - here, rainfall is most likely to be below normal.

Soil moisture levels are most likely to be near normal in all regions, although soggy grounds are expected following the more frequent deluges.

New Zealand's risk for ex-tropical cyclone activity is normalto-elevated through to April. As we saw in January with Cyclone Hale, these systems can cause flooding rainfall, strong winds and coastal hazards.



The information in this article comes from NIWA's Annual Climate Summary and January to March Seasonal Climate Outlook - you can read the summary at www.niwa.co.nz/climate/summaries/ annual-climate-summary-2022 and the outlook at www.niwa.co.nz/climate/sco.

# Irrigators should plan ahead for upcoming resource consent expiration

Water is the most common substance on the earth's surface and one of the most critical when in short supply. As climatic conditions vary so does the increased need for irrigation water to maintain productive crop growth through the growing seasons.

Groundwater resource consents are granted by Regional Councils in Bay of Plenty and Waikato Regions allowing for the take of groundwater for beneficial uses including horticulture and farming, among others. Almost half of the Bay of Plenty region's resource consents to take water were granted under the Water and Soil Conservation Act and became 35-year consents under the Resource Management Act 1991. In 2026 there are a total of 1259 consents due to expire, with 751 (59%) being water take consents. The majority of the water take consents that will expire are for agricultural use.

Water users are encouraged to make plans early if they need to complete water bore installation, pumping testing, assessment of effects and application for renewal of their groundwater

take resource consent

At a minimum, renewal of these water take consents will require some consultation with Regional Council, application submission and payment of fees. In many cases, groundwater take resource consent renewals will require pumping testing of the bore and assessment of environmental effects on other users and the environment. Bay of Plenty Regional Council expects that applications for renewal of expiring water take resource consents will be lodged starting 6 to 12 months prior to the 2026 expiration date. This push for applications will likely be preceded by a flurry of activity in the pumping testing and water bore replacement industry. A high demand on a limited number of quality contractors may result in higher prices for work and extended completion times. Water users are encouraged to make plans early if they need to complete water bore installation, pumping testing, assessment of effects and application for renewal of their groundwater take resource consent.



Another critical aspect of these events is that the regional councils will have the opportunity to reduce overall groundwater take in overallocated catchments in an effort to better manage catchment hydrology. Some groundwater catchments are significantly overallocated, meaning that groundwater is recharged at a rate less than is allocated to be taken out. Overallocated catchments may experience declining groundwater levels over time as well as related hazards such as land subsidence and saltwater intrusion. The individual user, renewing their consent in affected catchments, may be required to reduce their allocation.

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### Seasonal worker accommodation beds



With over 30 years of furniture and homewares product development, design, contract manufacturing and procurement, Haven Distributing's Commercial Division provides the best quality and fully safety compliant bunk and bed options for seasonal worker accommodation.

Haven's products are acknowledged by seasonal accommodation providers, backpackers, holiday parks, council-operated and student accommodation facilities. Haven is the product developer, importer and distributor of commercial furniture and mattresses, and is well known for its consistent high-quality products and service, and full safety standard compliance of products designed for commercial use.

Haven's bunk beds comply with the AS/NZS safety standards, providing a level of safety awareness and minimising risks, and the importance of using only fully compliant and certified bunks in accommodation facilities cannot be understated.

The AS/NZS 4220:2010 bunk safety standard covers Australia and New Zealand, and was further enhanced with the introduction of the accommodation industry Handbook Standard (HB393:2011) in 2011, providing additional

specifications and guidance for short-term accommodation providers relating to the purchase, installation, maintenance and the use of bunk beds in facilities.

The standards include many specific and detailed design and manufacturing requirements and approval processes. Haven's products comply and are fully certified to these standards, giving accommodation providers peace of mind.

Haven Commercial offers an extensive range of safety compliant products to the commercial sector, providing a direct-from-source purchase at competitive prices, with nationwide distribution. "We look forward to helping growers and seasonal worker accommodation providers plan their sleep system requirements."

For more information contact Roger or Scott Harris, Haven Distributing Co Ltd Commercial Division on 09 213 3024 or email sales@havennz.com

