

Citrus News

March/April 2024

Levy Order Consultation Grower Shed Meetings

Levy Order Consultation

NZCGIs commodity levy order expires in February 2026 and the Board have directed Citrus NZ to apply for a new commodity levy order. Consultation with growers and third party collectors will be commencing soon, and voting will take place towards the end of this year.

Grower Shed Meetings

Citrus NZ will be holding a series of Shed Meetings following last year's successful format. A varied and interesting programme is being developed and will include:

Consultation on the Commodity Levy Order, an update on the recent Australian Citrus Congress, R&D Update, and the launch of a Biosecurity Response Guide.

Mark your diaries as the dates are:

24 June - Gisborne | 2 July - Bay of Plenty | 3 July - Kerikeri

Watch your email for venue, times and final details of the programme - this will be coming to your inbox soon.



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Wayne Hall - Citrus NZ Chair

The satsuma season is underway! The commencement of the Northland mandarin harvest signals the start of another harvest season that will extend through the winter months, and into spring, when the majority of citrus across all categories will be hitting the supermarket shelves. The quality of the mandarin and navel orange crops looks excellent, and it is lining up to be a great tasting year for these varieties. Lemon volumes in general are down, with fruit size likely to be on the larger side this season, which could make sales challenging.

In March, several NZ citrus growers had the opportunity to attend the Australian Citrus Congress in Queensland. They joined Citrus NZ board members and management to learn about current trends and challenges facing the citrus industry in Australia, and benefit from the networking between other growers, researchers, and marketers.

A pre-congress tour enabled growers to look at new innovative growing systems that growers are

now investing in to potentially increase citrus yields and fruit quality.

Funding for the trip was assisted through the MG Charitable Trust, which generously provided funding to allow growers to attend the event. At the Citrus NZ conference in September attendees will hear about the conference from those that attended.

Citrus NZ is preparing for a busy few months ahead, with retailer meetings in April, grower 'shed meetings' in June and July, and our Citrus NZ 30th anniversary industry conference in September, which will be held in Gisborne. We welcome any suggestions or ideas that you may have regarding what you would like to see at your industry conference. Please forward your thoughts on to any of the Board members or to Chrissy at Citrus NZ.

Happy growing everyone.

Wayne



2024 Australian Citrus Congress

By Sally Anderson (Citrus NZ Research Manager)



New Zealand citrus was well represented by a 14-strong team of the NZ citrus industry personnel at the recent Australian Citrus Congress and Biosecurity Forum held from the 5th to 7th March on the Sunshine Coast. Among the NZ attendees were six growers who had received travel funding from Citrus NZ and MG Charitable Trust. The six travel recipients were Tony Hayward (Northland), Richard St George (Kerikeri), Sandy Murphy (BoP), Rowan Wallace (BoP), Bruce Sutton (Gisborne), and Campbell Crisp (Gisborne). Citrus NZ was represented by Wayne Hall (CNZ Chair), Matt Carter (CNZ Board), Sally Anderson (CNZ Research Manager) and Lisa Wong (CNZ Biosecurity Manager). We were also pleased to welcome Dave Hansen, Doug Crisp, Gareth Knox, and Phil Croy as part of the NZ contingent.

So what was the Congress all about? This was an inaugural event organised by Citrus Australia, combining what traditionally has been two separate conferences into one (the Market Outlook Forum, and the Technical Forum). On the 2 days preceding the Congress there was a Field trip and a Biosecurity Forum. Overarching themes for the Congress were 'Research, Connection, and Direction' and brought together over 400 delegates from around Australia and from around the world.

All facets of the event provided a wealth of insight and information, and while the primary focus was on the Australian citrus industry, the Biosecurity and Congress Programme attracted some world-leading speakers on the state of citrus globally, new technologies on the

horizon, and the severe threat that pests and disease pose to global citrus production, and the experiences on the ground in the USA and Brazil, two countries that have been seriously affected by Asian Citrus Psyllid and Huanglongbing.

Our sponsored growers have all being tasked with sharing their insights and learnings, and we start with an article penned by Sandy Murphy for this issue of Citrus News and her impressions from the Congress with a particular focus on clean citrus budwood. Look out for more information in Citrus News and presentations at the Citrus NZ AGM and Conference in September.

A varied and interesting field trip

The Congress events kicked off properly on the 4th March in Bundaberg. A small NZ contingent of Matt Carter, Sally Anderson, Phil Croy, Sandy Murphy, and Gareth Knox participated in the field tour. Interest was raised right from the start of the tour at the Bundaberg



The NZ Citrus team. L to R: Tony Hayward, Matt Carter, Lisa Wong, Richard St George, Sandy Murphy, Rowan Wallace, Bruce Sutton, Sally Anderson. Missing from this photo—Wayne Hall and Campbell Crisp.

Research Station with the demonstration of an autonomous citrus sprayer by Fieldin. The display showcased a tractor driving autonomously through the orchard, turning on and off the spray unit as the tractor turned into each row. The technology converts a normal tractor into an autonomous unit, using LiDAR and GPS to direct the unit. It was quite something to see a driverless tractor rolling down the rows. The Fieldin team did point out that the operation

of the autonomous unit still needed human supervision and a good wi-fi connection.

The citrus breeding programme in Queensland at the Bundaberg Station was showcased. Malcolm Smith, a citrus breeder at the Queensland Department of

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“ It was a great leveller for a humble NZ citrus grower. It put into perspective the New Zealand citrus industry and where it sits globally. I think New Zealand was mentioned on one or two slides throughout the whole event! I recommend anyone who gets the chance to attend one - go you won't regret it. Bruce Sutton, Gisborne



Field trip participants viewing the autonomous citrus sprayer in action. (Credit: S Anderson, Citrus NZ).

Agriculture and Fisheries (QDAF) explained the breeding programme that he is leading using native Australian citrus species, such as Australian desert lime, that have shown tolerance to HLB and crossing these with commercial citrus varieties. The long-term objective is to breed HLB tolerant or resistant cultivars. Presently the trees are a long way from being a commercial reality, being very thorny, with small fruit.



Breeding for HLB tolerance using native Australian citrus at the Bundaberg Research Station. (Credit: S Anderson, Citrus NZ).

The next stop on the tour was an hour south of Bundaberg at Spencer Ranch where the QDAF native citrus hybrid trials and blackspot trials were showcased. The aim of the blackspot trials was to look at ways to manage spore inoculum levels in the orchard and developing IPM-based programmes. Copper trials to control black spot were showcased at Abotsleigh citrus as well as a walk through the packhouse to view the 6-lane Tomra grader system. The final stop of the day was a further 1hr drive south to Golden Grove Citrus Nursery to view the smart farm technology used in the nursery, this includes sensors to measure weather, water, drainage, irrigation, chlorine, fertigation, pest trap cameras, with the objective of using the myriad of sensors and data to improve production efficiency,

The Congress at a glance

Day 1

- Macro trends impacting profitability - looking big picture at the factors that define our production and trade environment.
- Raise the bar to raise the return – a detailed look at how the Australian consumer landscape impacts the industry's profitability.

Breakout sessions

- Postharvest and packaging - A session covering postharvest advancements driving profitable outcomes.
- Production - A grower-focused session covering production techniques, ag-chem and pest control solutions that are boosting farm-gate returns.

Day 2

Breakout sessions

- Technology - A deep dive into how technology is transforming the citrus industry, unlocking adding value in the process.
- Varieties - A look at varietal development within the citrus sector, both in Australia and internationally.
- Australian citrus trade: challenges and opportunities - A deep dive into the export trade in the face of a new political landscape and post-Covid era.
- Planning the profitable future of the Australian citrus industry - Industry resilience will be determined by our ability to review, respond, restore and rebound.

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irrigation management and the quality of tree production. A number of new citrus varieties available to Australian growers was showcased by Variety Access, an Australian company specialising in the commercialisation of new citrus and subtropical fruit varieties.




New citrus varieties showcased to Australian growers. (Credit: S Anderson, Citrus NZ).

The Australian Citrus Congress was 2 days full of citrus insights and learnings

The Congress was held on the Sunshine Coast at the Novotel Resort and Conference Centre. The first day began with a look at macro trends and global economics and the factors that define global citrus production and trade. The take-home message from Patrick Vizzone (Fresh Analytics) was that global citrus production has grown strongly over the past 10 years driven by strong demand, particularly from China. Asia and more specifically China, is the main export market for Australian citrus, taking 88% of exported volume. Globally, the Asian/China market is forecast to continue to drive global demand for premium fresh produce. From an Australian perspective, geopolitics is having an impact on trade with disruptors such as the US presidential elections (Trump v Biden) and the deterioration in Australian-China relations impacting trade. As a consequence, China has continued to shore up its own supply chains and focus on domestic food, energy and technology security.

Wayne Prouse (Fresh Intelligence Consulting) presented

 **China continues to be the main export market for Australian citrus.**

“ Scale drives greater width in innovation and research; we need to collaborate more with each other as well as with Australia who are also doing so with the US, Spain and Brazil to identify solutions and opportunities. No one will solve the industry's challenges alone. Rowan Wallace, Grower, Bay of Plenty

on the opportunities and challenges for the Southern Hemisphere and some interesting statistics. Of the 166 million tonnes of citrus produced globally (in 2022), only 15.6 million tonnes (9.1%) of global citrus is actually traded. The Asian region produces 75.2 million tonnes of citrus (45.2% of global production). By contrast Australia produces 0.6 million tonnes (0.4% of global production). In total the Southern Hemisphere countries (Australia, Sth Africa and Sth America) collectively produce 40 million tonnes of citrus (24% of global production). 88% of Australia citrus is exported to Asia, the main competitor being Sth Africa as supply is at the same time as Australia. Peru, Egypt and the USA are also looking towards Asia for export. China itself produces 48 million tonnes annually, but exports only 1.2 million tonnes mostly to SE Asian countries. China's domestic production is expected to grow.


Chris Cockle from Wonderful Citrus in California provided a perspective of a large vertically integrated citrus producer. Wonderful Citrus produces more than 11 billion pounds of citrus annually (that's 4.9 million tonnes), farming an area of 32,000 ha (to put this in perspective NZ total planted area is approx. 1,600ha, with production of 30,000 tonnes). Chris's view of the global citrus market is one of consolidation. Over the last 10 years rising production costs have matched a lowering of price (\$/kg). As a result, large producers are looking to diversify their risk (markets) and reduce costs of production by looking for new technologies, this might be through new, more productive varieties, reduced labour costs and costs of inputs (e.g. agrichemicals).

Tristan Kitchener explored the changing consumer and retail landscape. He observed that consumers are managing the cost of living by trading down to cheaper products (fresh to frozen), looking for specials, and purchasing expensive products less regularly. Consumers are demanding sustainability AND affordability. Regarding sustainability Tristan noted that consumers expect it but are not willing to pay for it. Large supermarket retailers are starting to benchmark their suppliers against Sustainable Development Goals

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(see World Benchmarking Alliance <https://www.worldbenchmarkingalliance.org/> for more information).


Looking at strategies to increase consumption of citrus, Belinda Aanensen (Fiftyfive5) highlighted 4 key themes to unlock growth in her presentation; 1. Look beyond snacking and grow consumption in meal consumption throughout the day, 2. Boost confidence in versatility of use and inspire new ways to use citrus, 3. Increase 'love' of citrus through improved taste and flavour, 4. Dial up provenance by creating trust in locally grown produce. Building on this theme Emma Becket of FoodIQ proposed that Vitamin C is no longer enough to promote citrus and the promotion of citrus needs to be re-framed as a superfood having a wide nutritional benefit and complex of nutrients such as potassium, folate, fibre and polyphenols. Both of these presentations provided some useful insights into how NZ citrus might be better promoted to the NZ consumer.

 *Long known for Vitamin C, moder nutritional research shows there is much more to citrus fruits than just vitamin C .*

The Production session covered a lot of practical information of interest to growers, including presentations on soil health and tree nutrition, soft chemistry, tree spacing, irrigation and frost susceptibility of citrus varieties.

Graeme Sait (Nutri-Tech Solutions, <https://nutri-tech.com.au/>) provided a masterclass on tree nutrition and noted 4 key minerals to optimise being calcium, magnesium, phosphorus, and boron. The company promotes the concept of Nutrition Farming® an integrated system that links soil health, crop resilience and farm profitability. The hidden workforce of the farm were the soil microbes, and improved management of the soil microbiome will lead to improved farming success. Graeme promoted the use of composts, foliar fertilisers, cover crops, and earthworms all being important to restore and maintain soil health. Michelle Leslie (elemental enzymes) provided an update on the advancements in soft chemistry and the biological products (amino acids and peptides) that are being developed that can act on the plant or plant pests in a variety of ways. These products are not yet available in NZ, but potentially offer exciting future control options.

The pros and cons of Citrus tree spacing was discussed by Etienne Rabe from Wonderful Citrus based in California. Increasing labour and input costs are the main drivers for reducing spacing and intensifying plantings.

 *I was one of six lucky recipients of a grant to attend the Australian Citrus Congress. It was amazing, invigorating and in places scary. Sandy Murphy, Citrus Nursery Owner, Bay of Plenty.*

High density plantings are considered to be 4 X 1.5 - 5 X 2 m (trees/ha) [1000 to 1,666 trees/ha]. Productive volume increases per ha with denser spacing and less shaded area. Etienne presented a variety of planting configurations including tramline and trellising Tatura/Y and vertical systems but noted there is 'no right' spacing. For citrus the main consideration is to optimise spacings to allow light access, so for instance for a 5m spacing trees should be no more than 3m high (60% rule). Setting up an orchard for future mechanisation, particularly mechanised pruning and harvesting, is also a consideration. Robotic harvesting is already in place on apples, but that requires plucking/pulling, unlike the clipping required on citrus. Presently there are no commercially available robotic harvesters for citrus. Citrus varieties most suitable for high density planting include Satsuma, Murcott types (mandarin-sweet orange hybrids), and Nadorcott-(Afourer) types. Regarding rootstocks, Etienne noted the need to use a reasonably vigorous rootstock (Trifoliolate, C-35) to grow a canopy quickly. The main issue with high density planting is that eventually distribution of light becomes limiting if the tree canopy is not actively managed.

"Higher density spacings quite often fail to achieve the intended goals unless sticking to a predetermined plan: once optimal light interception is achieved, prune early and correct to maintain the desired light distribution maintain productivity" Etienne Rabe .

Dave Monks from NSW DPI followed from Etienne Rabe presenting research in Australia on tree intensification. NSW DPI have a number of very useful resources on their website on pruning techniques, intensive planting case studies, and the use of dwarfing viroids to manage tree size (see: <https://www.dpi.nsw.gov.au/agriculture/horticulture/citrus>). The NSW DPI currently has a research programme underway looking at different trellising systems and assessing financial aspects of each system.

The Technology session on Day 2 of the Congress provided an overview of the technologies just over the horizon such as traceability on all fruit, the use of AI and smart farm systems. Labour saving through automation of tasks such as spraying and herbicide application is

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seen as having the most potential. There was general agreement that robotic/autonomous harvesting was a long way away and would require a rebuild of tree structure.

David Daniels (GM Market Development, Citrus Australia) summarised the trade insights for Australian citrus. From 2020 to 2022 Australian citrus was poorer quality, over 2023-24 the fruit quality has improved. There have been significant citrus plantings over the last 3-4 years with over 18,000 ha of citrus now planted in Australia. David noted there is now a risk of oversupply and no export market for the fruit volumes that are predicted. Exports to China are improving with strong returns but the relationship remains difficult. Other

potential growth markets for included the USA and Canada, South Korea, Vietnam, and India. India is an interesting market as it is dominated by roadside vendors rather than large supermarket chains and the lack of cold chain facilities and modern retail approaches means that this market will be difficult.

Overall, the Congress offered all the NZ attendees the opportunity to hear about Australian and global topics related to citrus growing, producing, marketing and exporting. Members of the Citrus NZ grower group will be providing their insights on the Congress in upcoming editions of Citrus News and at the Citrus NZ Conference in September.



The NZ Citrus Team debriefing following 3 intensive days of talks. L to R: Rowan Wallace, Bruce Sutton, Lisa Wong, Sandy Murphy, Tony Hayward, Campbell Crisp, Matt Carter, and Richard St George.

Citrus NZ would like to thank and acknowledge the support of MG Charitable Trust for travel funding assistance.



Biosecurity Update

Australian Citrus Congress - Biosecurity Symposium

A one-day Biosecurity Symposium was held on 5 March 2024, preceding the two-day Australian Citrus Congress, held on the Sunshine Coast in Queensland, Australia.

Huanglongbing (HLB) and its vector, Asian Citrus Psyllid (ACP) were the key focus of the symposium as they have significantly impacted many citrus growing regions around the world. ACP and HLB are absent from Australia and New Zealand. However, the Australian citrus industry is understandably nervous because ACP and HLB are present in Indonesia and Papua New Guinea, and very close to Australia's northern border.

International speakers from the USA (Florida and California), Brazil, China, and Indonesia presented their perspectives on how the impact of ACP and HLB had affected citrus production in their countries.

The scene was set by **Nate Jameson**, the co-owner of Brite Leaf Citrus Nursery in Florida, who gave us an overview of the situation in Florida - from the initial discovery of ACP through to current day production practices that are needed to grow citrus trees in the presence of HLB, citrus canker and citrus black spot. Nate also discussed what it is like to grow citrus trees in fully enclosed, protected culture production systems and the necessary protection measures required to achieve disease-free trees. Under state law in Florida, citrus trees must be produced in protected nurseries.

Etienne Rabe gave a presentation on the current state of HLB in California and how the situation is being managed in the state. In California, significant efforts are used to survey and manage residential citrus trees in order to protect commercial citrus production. Etienne is the Vice-President of Agronomy at Wonderful Citrus, one of the leading companies in the USA that grows, packs, and markets fresh citrus.

In the USA, ACP is present in all citrus producing states and territories. So far, Florida and California have each spent US\$1-2 billion to combat and live with the disease, and to maintain citrus production in each state.

The impact of HLB on citrus production in Brazil was discussed by **Franklin Behlau** from FundeCitrus, a grower and processor funded R&D organisation in the state of Sao Paulo. Brazil is the world's largest producer of oranges and juice, where the presence of HLB has driven major changes in production practices including growing in protected nurseries, and changes in tree size, pruning, irrigation, and pest and disease management.



Photo caption - Sally Anderson presenting New Zealand's perspective on preparing the citrus industry for exotic pest incursions.

On a regional level, **Jessica Lye**, Biosecurity Manager for Citrus Australia outlined work being undertaken to build relationships between industry and state/federal agencies to improve biosecurity response outcomes, to develop training and education initiatives, and projects to increase grower and public awareness of ACP and HLB. Citrus NZ's Research Manager, Sally Anderson was invited by Citrus Australia to present at the Symposium. She outlined the New Zealand biosecurity system, the Citrus NZ Biosecurity Workplan, and how Citrus NZ is preparing the industry for an incursion and response.

A small group of growers was supported to attend the Biosecurity Symposium and the Congress with funding from MG Charitable Trust obtained by Citrus NZ. After hearing about the devastation that ACP and HLB has caused to citrus growing regions around the world, the message from these growers was loud and clear - New Zealand and the citrus industry needs to be prepared and ready for ACP and HLB, and Citrus NZ must continue its work to safeguard the industry.

Citrus NZ can learn from the eradication and management programmes that have been undertaken overseas, and could use or adapt these for New Zealand conditions. The best course of action is to prevent the entry of ACP and HLB in the first place, and for growers to report anything unusual as soon as you see it.

The Symposium provided reassurance that Citrus NZ is on the 'right track' with its Biosecurity Workplan (for details see Citrus News October 2023) that includes projects to keep growers informed and develop resources for them, to increase public awareness, and to maintain and build Citrus NZ knowledge for a biosecurity response. Longer term projects include

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Biosecurity Update (cont'd)

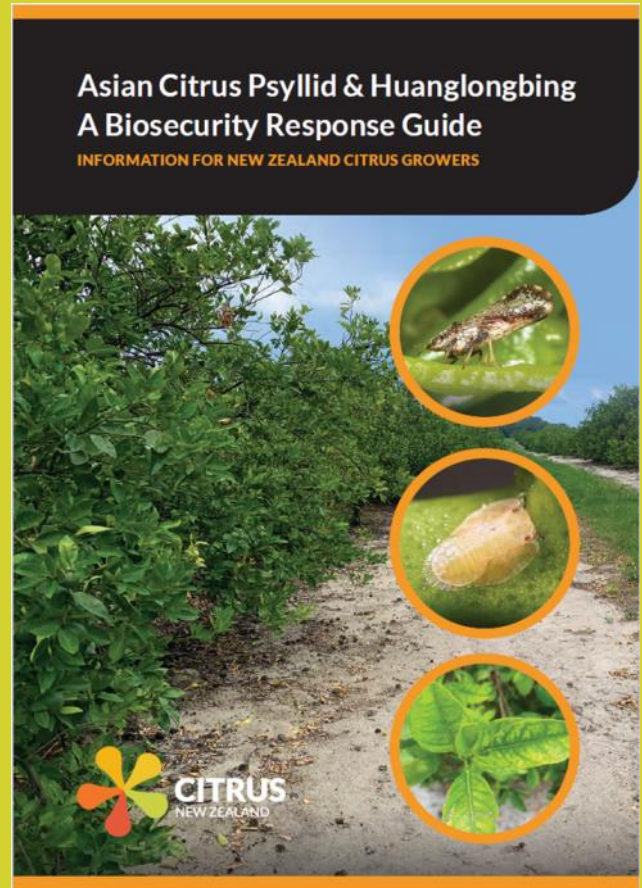
planning for pest management and changes in production practice that may be needed if ACP and HLB were to enter and establish in New Zealand.

Keeping growers informed is a key outcome of the Biosecurity Workplan. One of the resources being developed for growers - *Asian Citrus Psyllid and Huanglongbing. A Biosecurity Response Guide* - is almost complete and will be ready to launch at the Grower Shed meetings scheduled for June and July. The booklet covers a range of topics including explaining what happens in a biosecurity response, outlining actions that are undertaken by the MPI Response team, and how your orchard may be affected if it is in the response zone.

With the support of citrus growers, who endorsed the funding of biosecurity activities at the recent AGM, we can begin these projects that will build biosecurity awareness and resilience, and strengthen the citrus industry.

Lisa Wong PhD

Citrus NZ Biosecurity Manager



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Mark your diaries with these important dates ...

Levy Order Consultation to be held at Grower Shed Meetings

Citrus NZ will be embarking on a programme of consultation meetings with Growers and third party collectors. We look forward to talking to you about priorities, key programmes, future plans and the renewal of the commodity levy, which will take place at this year's grower Shed meetings.

All growers and third party collectors are invited to attend the Shed meetings to be held on:

24 June - Gisborne
2 July - Bay of Plenty
3 July - Kerikeri

The shed meetings are also a great opportunity for networking and enjoying food and drinks with fellow growers. Come along and also see presentations on: the recent Australian Citrus Congress, what's happening in the R&D space, and the launch of a Biosecurity Response Guide.

Please watch your email in-box for venues, times and finalised programme.

We're look forward to seeing you there.

Date Announcement:



Annual General Meeting and Conference

Wednesday 18 September 2024

The 2024 event is back in Gisborne and will be held at the Farmers Air Showgrounds Event Centre.

This years event is significant as its the 30th anniversary of NZ Citrus Growers Inc and a special programme is being planned.

It is a one-day event culminating with the Industry dinner.

Watch this space for further announcements on the programme and guest speakers.

The 2024 event will be one not to miss!

Do we need a centralised source for clean budwood?

By Sandy Murphy, Alexandra Joy Citrus Nursery, Katikati

I was one of the six lucky recipients of a grant to attend the Australian Citrus Congress. It was amazing, invigorating and in places scary. As an industry and a country, one of the major threats we face is the arrival of ACP (Asian Citrus Psyllid) and the bacteria HLB (Huanglongbing), also known as Citrus Greening. ACP is the vector which carries HLB to and between citrus trees. The effects of which be devastating. The effected citrus trees produce a green bitter fruit which can't be sold, before the tree eventually dies. In 2004, Florida produced 240 million 90 lb boxes of oranges. This compares to an estimated 16 million boxes in 2023. This massive drop is attributed to HLB.

The symptoms of HLB do not show up for 1 to three years after infection and initially the tree looks like it has a nutritional deficit. You can also have infected trees which are asymptomatic. Due to these factors, the budwood we use could be infected with HLB without the budder knowing. This means HLB could spread rapidly around NZ if it and ACP were to arrive here.

At the conference we were fortunate to listen to speakers from Indonesia, Florida, California, and Brazil who have lived with the effects of HLB. Their recommendation is that we (Australia and New Zealand) have a secure mandatory budwood repository which contains safe, clean budwood. This is vital to manage HLB and something that needs to be discussed and implemented now, while we don't have HLB, rather than waiting until it arrives.

Having seen pictures of and heard how HLB has decimated the citrus industry in Florida I am 100% behind having one central budwood source. However, I fear setting this up and getting compliance would not be as easy as many of us in the citrus industry would hope.

It would be easy to get nurseries which supply citrus trees to orchardists to comply. If they don't use certified clean budwood, there would be no market for their trees. In comparison, it is the nurseries which supply garden centres or directly to the public and the one-man bands who will be more difficult to get on board. Some people are supplying citrus out of their sheds, selling on Trade Me, Facebook Marketplace, or local markets. The public will still want to be able to buy their citrus trees for their home. Even the government loves citrus. Currently Housing Corporation specifies that every house they build must have six fruit trees planted, including citrus.

NZ orchardists grow around 40+ varieties of citrus trees, and there are well over 150 varieties *Continued next page*



Image above: HLB infected citrus in Florida. (Credit: S Anderson, Citrus NZ)



Image left: ACP nymphs with characteristic honeydew secretions (Credit: S Anderson, Citrus NZ)



Image above: ACP adult



Do we need a centralised source for clean budwood? (cont'd)

in NZ. I personally have 79 different varieties in my nursery and am increasing this number all the time. At the conference a respected kiwi orchardist said to me “it is in your interest to have a national clean budwood supplier”. I totally agree. If we get HLB my business is gone but if the repository only holds commercial / orchard varieties my business is also gone.

I think we urgently need to start thinking about what this budwood repository would look like.

To get the discussion started here are some questions and points for you to think about:

- Do we wait until ACP is in NZ before we do anything about a centralised budwood scheme?
- How do we fund the budwood scheme? It is not as simple as just adding an extra cent on the citrus levy. Nurseries and the one-man band people don't pay citrus levies. Is it fair for orchardists to foot the bill only? The economy is tight, who has spare money at the moment?
- We can pay for the budwood when we purchase it, but what about the 3 years it would take to set the scheme up and probably 5 years till peak production. Where do these millions come from?
- How do we get the people who supply home gardeners to buy into this scheme? Currently the garden centre market is struggling after the Covid. Nurseries will not be keen to pay up to a dollar per tree for budwood when most of them have access to free budwood. Due to NZ being small it is unlikely that we would be able to produce budwood as cheaply as Australia does (60 cents).
- Most people outside of the orchard industry have not heard of ACP or HLB. How do we get them on board?
- We saw what happened when government legislated that members of key industries needed Covid vaccines to keep working or we needed a vaccine to go to restaurants. If we made it compulsory to use clean, centrally supplied budwood would it split the country again? Would we have black-market trees,

protests from the home gardener who bud their own trees (there is surprisingly a lot of people doing this) or want a specific variety of tree?

- Would it be economic to carry every variety we have in NZ? If its not we would again run the risk of black-market budwood.

Let's get talking.

Hoping to see you at the citrus conference where I will share what I learnt about the risks backyard growers pose to the citrus industry if HLB becomes established in NZ.



Image above: Stages of citrus propagation at an Australian citrus nursery. (Credit: S Anderson, Citrus NZ)





Clark Fletcher Memorial Citrus Bursary

End-of-studies report from 2021 recipient - Sarah Tallon

Kia ora! I'm Sarah Tallon, and in 2021 I was awarded the Clark Fletcher Memorial Citrus Bursary to support the first year of my studies towards a Master of Crop Sciences at the University of Hohenheim, Germany.

My degree consisted of three semesters of course work, in which I chose a range of plant science modules together with broader subjects such as economics and environmental policy, and one semester for the master's thesis. I learnt so much, not just from my lecturers but also from my international classmates whose perspective and experience were often very different to my own. My research thesis titled '*Closing the rural-urban nutrient cycle: an investigation in the efficiency of designed fertilisers*' was carried out within the interdisciplinary project RUN: Rural-Urban Nutrient partnership. The RUN project is a closed-loop nutrient management concept that uses a novel method to produce 'designed fertilisers' such

as struvite (magnesium-ammonium-phosphate crystals) and loaded zeolite for agricultural use from urban kitchen and toilet waste. These nutrient-rich fertiliser products are considerably

under-researched and there is conflicting evidence regarding their effectivity and the most efficient way to use them.

To address this problem, I designed two experiments. The first experiment trialled two ways of improving struvite performance as a placed 'underfoot' fertiliser for maize: intercropping with broad bean and mixing zeolite in the soil as a soil conditioner. The results showed that overall zeolite application did improve the mean fertiliser efficiency, although not significantly, and that intercropping treatments had similar results to monocropping treatments, although in almost all metrics the struvite fertiliser proved inferior to conventional

diammonium phosphate fertiliser. My second experiment trialled using struvite in a fertigation system for pot-grown basil as a proof-of-concept model that struvite could be used in indoor hydroponic systems. The results were inconclusive due to a critical experimental design error in the fertilisation rate, but I could still provide several useful recommendations for further trials.

But my time at Hohenheim was not just about studying, as I took the opportunity to be engaged in the community. My biggest commitment was leading a small group of students to bring back the *Cafete*, the student-run charity café, after its closure over the pandemic. Since re-opening, we have sold hundreds of mugs of fairtrade coffee and raised ~€3,000 per semester to donate to charity. I was also involved in leadership in the university Christian fellowship, sang soprano in the

university classical choir, and helped organise sustainability-themed events. I also picked up the German language in my free time and passed the TestDaF fluency exam.



It was a truly enriching time at the University of Hohenheim, but after two years of being away from home the call of Aotearoa became stronger and I applied for a research associate position with Plant & Food Research. In January I started work at the Kerikeri research station in the Sustainable Production portfolio, primarily focussing on kiwifruit but there's a good chance I'll be working with citrus as well. I'm really looking forward to exploring a new part of country for me, and to getting some great research experience that'll set me up for the next stage of my career. My studies would not have been possible without the generous support of scholarships like the Clark Fletcher Memorial Citrus Bursary, and so I thank you for your support.

Sarah Tallon



Clark Fletcher Memorial Citrus Bursary 2024 Recipient Announcement

Citrus NZ was thrilled with the high calibre of applicants who applied for the 2024 Clark Fletcher Memorial Citrus bursary. This year the bursary was shared between the following two recipients:

- **Brooke Morrison** - will be commencing her Master of Science (Genetics) at the University of Otago.
- **Sam Koll-Haertel** - will be studying a Bachelor of Horticulture Science at Massey University .

We look forward to hearing about their progress and will share their study experience with you in the next edition of Citrus New.

Applications for the 2025 bursary will be called for late September.



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Agrecovery's Small Bags Recycling Programme: simple steps can make a big difference

Agrecovery's Small Bags Product Stewardship Scheme is a free and sustainable solution for recycling your plastic bags commonly used for products like seed, feed, and fertiliser bags (25kg and under in size).

This initiative is a substantial leap forward in sustainable agriculture, offering a viable recycling solution for LDPE plastic (#4) and Woven PP plastic (#5) bags. With over 60 leading agricultural brands on board, the scheme is set to reduce the environmental impact of plastic waste significantly.

Felicity Mitchell, Agrecovery National Scheme Manager, highlights the importance of the programme: "Agrecovery's Small Bags Product Stewardship Scheme plays a crucial role in providing New Zealand farmers and

growers with a practical and responsible solution for managing Woven PP and LDPE plastic packaging. It promotes the principles of a circular economy, ensuring that these materials are recycled and repurposed rather than ending up burnt or in landfill causing significant environmental harm."

Mitchell also emphasises the collaborative nature of this initiative: "The success of this voluntary scheme relies heavily on the leadership of the scheme's founding brands, who have shown commendable commitment by joining the scheme from the outset and taking responsibility for the plastic packaging they put into the sector. Their active participation enhances the schemes overall effectiveness and reach by inspiring other brands to join, highlighting the importance of collaboration and

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RECYCLE YOUR SMALL BAGS



Agrecovery's Small Bags Scheme provides a FREE recycling solution for your seed, feed and fertiliser plastic bags (25kg and under).

Woven PP (number 5 plastic) and LDPE (number 4 plastic) bags from participating brands can be recycled at over 200 fixed collection sites throughout New Zealand.

Find out how easy it is to do the right thing.

Visit agrecovery.co.nz/small-bags





Agrecovery's Small Bags Recycling Programme: simple steps can make a big difference (cont'd)

shared responsibility in addressing plastic packaging management challenges. We are extremely grateful to these brands for their proactive stance on sustainability."

For over 17 years, Agrecovery has been at the forefront of the recovery and recycling of plastics in the agricultural sector. Their voluntary product stewardship schemes for the responsible disposal of unwanted agrichemicals, and the recycling of empty plastic containers, drums, IBCs and now small seed, feed and fertiliser bags are a structured approach to managing on-farm waste, instilling a culture of kaitiakitanga and environmental stewardship among New Zealand's primary sector.

But just what is a Product Stewardship Scheme (PSS)?

A PSS is where manufacturers, importers or retailers pay a levy for their packaging or waste to be removed from the environment and recycled into a circular economy. It is a collaborative approach that manages the lifecycle of products to minimise their environmental impact.

Agrecovery's Small Bags scheme offers nationwide access with over 200 convenient drop-off locations, providing an effective and efficient service for New Zealand farmers and growers.

"Agrecovery would like to recognise and thank our merchant partners - Farmlands, Farm Source and PGG Wrightson - for helping to establish these collection sites, along with Waikato Regional Council, Waipa District Council, New Plymouth District Council and South Taranaki District Council," Mitchell says. "They have provided invaluable support in expanding the programme's accessibility and impact."

Mitchell urges all farmers and growers to leverage Agrecovery's programmes. "Simple steps can make a big difference. We're confident you'll find our programmes an easy solution for your on-farm waste."

For detailed information on how to participate, visit agrecovery.co.nz.

MPI issue warning under Section 289 of the Food Safety Act 2014

Our Fruit Box Limited raw fruit juices have not been manufactured with the required food safety controls.

Our Fruit Box Limited is a mobile operation moving between regions based on availability of fruit. Growers may be approached to supply fruit. If growers are approached, they should be aware **Our Fruit Box Limited** is not currently operating using a registered or verified risk-based measure to manage risks associated with the manufacture of juice.

Further information is published on the MPI website: [Our Fruit Box raw fruit juices | NZ Government \(mpi.govt.nz\)](https://www.mpi.govt.nz/our-fruit-box-raw-fruit-juices)

If you have further information about this operator or have any queries please contact MPI directly at: Food.Compliance@mpi.govt.nz

Voluntary Best Practice Fact Sheet

Following the 2023 Annual General Meeting the Fact Sheet is now available on the website [here](#) under Citrus Quality & Marketing.

A Lighter Touch Newsletter

Have you signed up for the A Lighter Touch newsletter yet?

Keep up to date with latest news from this programme focused on supporting plant food producers to move from reliance on agrichemical crop protection to an agroecological approach – sustainable farming that works with nature.

Sign up for [here](#) for In Touch, the monthly newsletter of the A Lighter Touch programme.

CHECKING-IN

Tools and connection for a tough season

New events
and dates!
Checking-
in.co.nz



For more information on these events and the Checking-in tools & tips online series, please go to www.checking-in.co.nz



New events announced for Checking-in rural recovery project

Community events and online tools & tips for rural people navigating a tough season.

Several new 'Checking-in' events to support North Island rural communities impacted by last year's adverse weather events have been announced for 2024.

One year after Cyclone Gabrielle caused widespread damage to the northern and East Coast regions of New Zealand, the rebuild, cleanup and need for support across communities remains ongoing.

Checking-in spokesperson Gerard Vaughan of Farmstrong said they hoped the events – ranging from lighthearted comedy, wellbeing and resilience programmes to the celebration of women who have made an impact in weather-affected communities – would strike a chord with North Island communities tasked with building back.

“Often when we are under the pump we forget to do the things that help us to get through. These events create

an opportunity for farmers and growers and their families to have a night off, have a laugh and connect with others. Having breaks away from the day-to-day challenges is a great way to refresh so you are in a good headspace to keep going”.

For more information on upcoming events or the tools and tips online series, please visit checking-in.co.nz

About Checking-in: 'Checking-in' is a collaboration project run by the Agri-Women's Development Trust, Rural Women New Zealand and Farmstrong, supported by the Rural Support Trust. The project is funded by the Ministry for Primary Industries as part of the NIWE (North Island Weather Event) response and aims to help rural communities affected by adverse weather through in-person events and programmes.

Trellising, is this a way for the future of citrus?

By Sally Anderson (Citrus NZ Research Manager) and Matt Carter (CNZ Board)

Trellising in horticulture is not a new phenomenon, it is used with great success in apples and cherries. The benefits of using trellis structures include the ability for more intensive plantings (i.e. more trees per hectare) and potentially greater productivity, automating certain tasks (e.g. picking platforms for easier harvest), the potential of robotics in the future, and more efficient use of resources e.g. land and water. However, there are differences in

“ For commercial citrus production the trellis concept is a new approach, and as an evergreen crop presents its own challenges compared to deciduous crops such as apples and cherries.

approaches for different tree crops, for example, apples versus cherries in terms of how the trellis is designed and how the trees are grown and managed on the trellis structure. For commercial citrus production the trellis concept is a new approach, and as an evergreen crop presents its own challenges compared to deciduous crops such as apples and cherries. Citrus NZ is currently working on developing a “Future Orchards” project, which will encompass aspects of new growing methods, and will include trellising or growing on structures. As part of scoping for ‘Future Orchards’ a small group participated in a visit to Mildura and Leeton areas to explore trellising plantings underway in Australia to develop an understanding of what is being trialled, planted, and researched on trellising approaches for citrus.

The participants were Sally Anderson (CNZ Research Manager), Matt Carter (CNZ Board Member, R&D Portfolio), Tam and Dan Jex-Blake (Gisborne based growers using trellis), Tony Hayward (Northland grower). The group was joined on Friday 1st March visits by Ken Breen and Jill Stanley from PFR.

The trellising tour began with a visit with Dean Morris located in Leeton, NSW. Dean is a pioneer in establishing



Figure 1: Afourer on a 6-wire trellis—under net.

citrus on trellis and has had plantings of Afourer mandarins on trellis since 2007. These original plantings were impressive having been established on a 6-wire structure to 3.5m height and 3.75m wide row spacing. This variety produces vigorous vertical growth and requires regular pruning (Figures 1 and 2). Although this has worked well, the costs to set it up was high, and so other methods have been trialled.



Figure 2. Canopy of trellised Afourer - note the horizontal branches along the wire.

The key learning from this planting was that it is best to go high early with a main leader, rather than trying to train a standard tree to the wire. From the main leader horizontal cordons can be laid down at different heights over time. The pruning of this type of canopy included removing larger branches where there was a replacement available and removing (ripping) strong upright growth (water shots) and pruning summer vigour.

Dean has now adopted a new approach to trellis planting using a single 700mm high wire. Row spacing is 3.7 m and tree spacing 1.8 m (1,500 trees/ha). The single wire is a hybrid, using trellis to help structure the tree and maintain its narrow aspect, as well as training the tree itself to be tall,

narrow, straight, and strong (Figure 3). This is a more cost effective method in terms of structure development, but does require some good pruning and training to get the required output.

The group also viewed other trellis plantings of navel

Continued next page



Figure 3. New Afourer planting on single wire trellis. Note the new whip tree with first leader bent to the South. Once the second shoot is tall enough it will be laid down onto the wire to the north.

oranges and Dekopon (Figure 4 and 5). Each variety needed a slightly different management approach depending on the growth habit. Navels for example is bushier and more difficult to train in the first few years and could be more suitable to a hedging-type of pruning approach.



Figure 4. Single wire 3 year old navel orange trial.

The group travelled to Mildura to meet with Dave Monks and Steve Favilene at the NSW DPI research station in Dareton. Jill Stanley and Ken Breen from PFR joined the group for the day's visits.

The primary focus of this site is the sustainability of citrus production. The main focus projects at present are:



Figure 5. Dekopon on trellis with net and retractable rain covers.

- Rootstock trials, breeding and importing new rootstocks.
- Dwarfing trials using rootstocks and viroid's.
- Nutrition and deficit irrigation
- Variety evaluations

A trellising project is underway to look at new methods of growing and reducing labour costs. Platform picking options are a big driver for this project. The current trellis trial has seen older Atwood Navel trees cut back and re-worked to a trellis system and new growth trained to either freeform, cordon, or espalier systems (Figure 6). The trial is evaluating different pruning methods and the economics of the different trellis structures for example, labour costs of pruning and picking, yield comparisons.



Figure 6. Trellis trial of Atwood Navel trees cut back and re-worked to a trellis system.

The group then travelled to Tumut Grove Citrus (FPG) in Colignan to meet Tristan Smith and Lloyd Foss. The orchard has extensive trellis plantings, with trellised navels varieties planted around 3 years ago (Cara Cara, Late Lanes, Washington). The motivation for adopting a trellis system is for improved production, uniform fruit

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size and quality, ability to use platform picking and pruning. The navels are being trellised with a two-wire system to help set up the structure of the tree (Figure 7), as they are bushier than mandarins and more difficult to train. The plan is to have 4 layers of branches and grow to approx. 2.8m tall with a width no wider than 1m. Once



Figure 7. Navels on a two-wire system.

the growth pattern is established the trees do not need additional structural support. A 95 ha new planting of Summerina mandarins has been established on a single wire trellis (Figure 8).



Figure 8. Newly planted Summerina mandarin tree laid down on single wire trellis.

From the information gathered in Australia and ongoing discussion with PFR, Citrus NZ is in the planning stages of a 'Future Orchards' programme to look at establishing trial trellis plantings of different varieties and styles of trellising. These trial plantings would provide the opportunity to showcase to growers these approaches, collect data on the fruit quality, size, yield, return crop yield, and economics and return on investment versus conventional plantings.

The group would like to express our collective thanks to all the growers and researchers that we visited over the four days, for sharing their knowledge, spending time showing us around, and for being so welcoming.

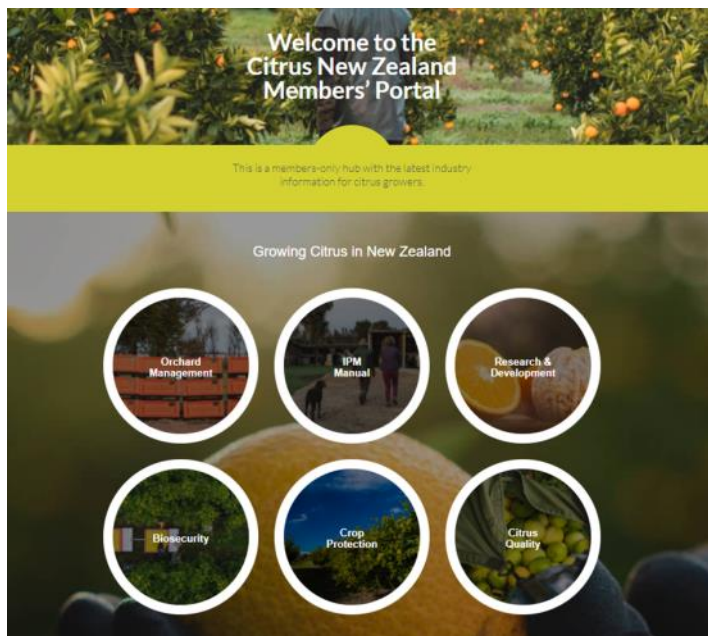
General observations on trellis systems:

- Trellis options are varied and dependent on the variety being grown.
- New trellis plantings are single or double wire, tall trellis structures are expensive and are not viewed as being necessary. This appears to be working for some varieties where the growth habit of the tree is able to be trained to the system e.g. Afourer mandarin on single wire. May not be suitable for all varieties, depending on growth habit.
- Plantings in Australia are still relatively new, and time will tell whether the commercial feasibility stacks up against traditional plantings.
- The main drivers (in Australia) to establish trellis plantings include:
 - ◆ Labour cost and the potential to mechanise/automate harvest and other operations via use of platforms and (maybe) in the future, robotics.
 - ◆ Maximise the area of productive canopy intercepting light, raising total yield and production potential.
 - ◆ Intensive pruning minimises wind blemish.
 - ◆ Improvement in fruit quality, return crop and yield compared to conventional plantings.
 - ◆ Sprays have better penetration and coverage.
 - ◆ In NZ – better utilisation of an expensive land asset.

Resources on the Citrus NZ website

Accessing the Citrus NZ portal

If you have trouble logging into the members portal please contact the CNZ office. The log in details should be the email address you have registered with Citrus NZ in both fields. We strongly encourage members not to change this.



Growing Citrus in NZ Guide

The new guide has been developed as a series of modules and is available in hard-copy and online. Each module contains detailed guidance, supported by references and additional reading. These resources can be downloaded from the Citrus NZ website (www.citrus.co.nz) by logging into the member portal.

Hard copies of the Growing Citrus Guide modules are available to growers by contacting the following people:

Northland – Ben Barker, phone: 021 944 162

Bay of Plenty – Keith Pyle, phone: 027 567 5259

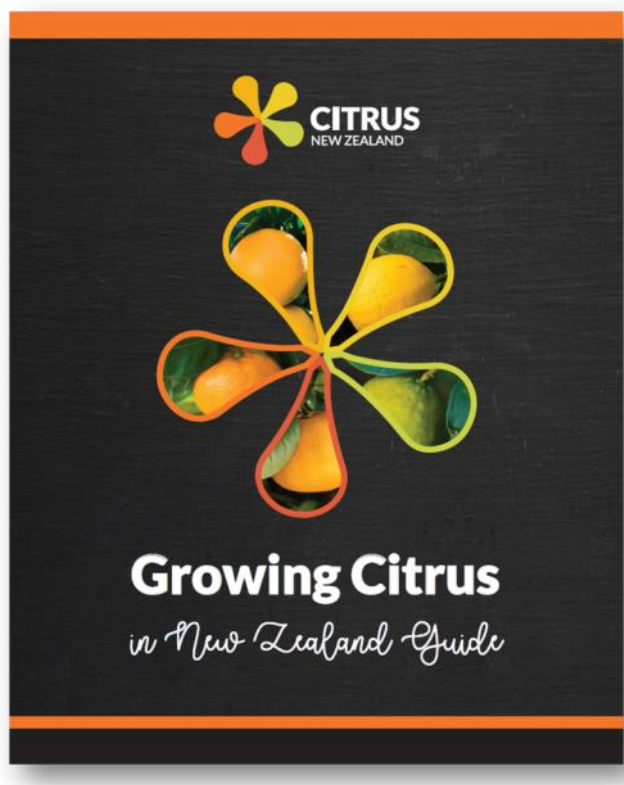
Gisborne – Matt Carter, phone: 021 242 0051

Citrus Research Catalogue

Over the years, Citrus NZ has funded a considerable amount of research to support NZ citrus growers. Topics range from breeding and rootstock, improving citrus production, understanding and treating pests and diseases, through to annual monitoring of oranges, mandarins and lemons.

The research reports, journal articles and conference proceedings is compiled into a catalogue and is regularly updated with new research reports and information. To explore the full range of topics and publications, log into the member only area of the Citrus NZ website. Go to the Research and Development section to download the catalogue.

Specific reports can be requested from Citrus NZ (info@citrus.co.nz), obtained via the DOI link supplied, or requested from your local library. If you require further information, contact Citrus NZ.



News from the A Lighter Touch Programme

Successful Biodiversity Forum

A Lighter Touch (ALT) has just hosted an educational forum focused on Biodiversity in a cropping farm environment, which included a field visit of the biodiversity projects at the Pukekohe demonstration farm. The Biodiverse planting in perennial crops project, which was demonstrated in two citrus orchards in Gisborne, was ALT's first foray into biodiversity and the work has since carried on in perennial systems with Summerfruit New Zealand and branched out into vegetable crops at the Pukekohe demonstration farm.

Speakers at the recent biodiversity forum included Dr Charles Merfield discussing why a biodiverse landscape is important, Dr Brad Howlett of Plant and Food Research speaking about native plantings that support beneficial insect biodiversity, and consultant James Gardner talking about how to plan a biodiversity project on farm or orchard. The forum also shared results from the biodiversity project at Pukekohe, and the experiences of commercial grower LeaderBrand with their biodiversity planting in Canterbury. Grower resources from the forum will be shared on the A Lighter Touch website as they are produced. These will include video presentations from the speakers and a plant species resource.

<https://a-lighter-touch.co.nz/our-projects/biodiverse-planting/>

New project approved to test the regulatory approval pathway

A newly approved ALT project is focused on taking a new-to-New Zealand bioinsecticide through the regulatory pathway. This bioinsecticide is for the control of diamondback moth, a priority pest in brassica crops, but the main purpose of the project is to use a case study approach to provide guidance to industry on how to navigate the complexity of the regulatory pathway in a faster and more cost



Above and below. Participants at the ALT biodiversity forum closely examining the perennial plantings at the Pukekohe demonstration site. (Credit: Gina Jewell, ALT)



effective manner. This project is part of the work by ALT to increase the availability and use of biological control agents (BCAs) for pest management, as part of agroecological crop protection.

Keep informed about the ALT programme

The A Lighter Touch e-newsletter is published monthly and contains news and updates of projects as well as links to relevant resources, articles and industry events. To subscribe to the newsletter email: news@a-lighter-touch.co.nz.



CITRUS
NEW ZEALAND

5+ A Day Citrus Promotions 2024

Following on from the success of the 2023 campaign Citrus New Zealand has partnered with **5+ A Day Charitable Trust** to run another programme of citrus promotions throughout 2024.

This year's campaign will have a strong focus on **Buy New Zealand**. It will also continue the theme on the health and nutrition benefits of citrus fruits, and other key messages about seasonality and delicious taste.

The campaign has already kicked off with a Lime giveaway promotion via Facebook and Instagram, and two lucky winners won a 5kg box of New Zealand grown limes. There was an impressive reach of 5,838 via Facebook and 2,164 via Instagram.

Other planned activities to look out for include:

- ◆ Television advertising
- ◆ Social media content including recipes and nutrition information
- ◆ Seasonal media releases, ie Autumn fruit, Winter fruit, Spring fruit
- ◆ Advertising throughout other platforms, e FMCG, Supermarket news, LinkedIn
- ◆ Giveaways on @5aday social media.



Compulsory Citrus levies reminder

Levies must be paid on all citrus. If you directly sell fresh and or processed citrus you must pay Citrus NZ a levy. It is a legal requirement that the levy be paid. Citrus NZ can send an invoice if you contact the CNZ office to declare your total volume.

This link explains the levies and has a payment calculator that can be downloaded:

www.citrus.co.nz/membership-and-funding/

Citrus Levy Rates

1c/kg

Fresh mandarins, oranges, tangelos, grapefruit, lemons and limes

0.3c/kg

All citrus intended for processing

0.5c/kg

Biosecurity levy on all fresh and processed citrus – from 01 April 2020

Compliance requirements

To comply with the citrus levy and auditing and payment reconciliation requirements, the person collecting and submitting the levy must keep records of the:



Name of the grower and purchaser



Quantity of citrus purchased and sold for sale or export



Amount of levy collected and paid to CNZ

Collection agents must also provide a copy to CNZ to determine the amount payable. Remember to keep these records for at least two years.



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Always read the full label text before applying any products mentioned in *Citrus News*. It is legal in NZ to use crop protection products "off-label", in a manner which is not endorsed by the label claim and registration of the product. CNZ does not endorse off-label use and any use of products off-label is completely at the grower's own risk. CNZ reminds all growers that the off-label use of products has risks, which includes but is not limited to there being no guarantee of efficacy, the possibility of adverse events, and potential for non compliant residues. CNZ **does not** promote the sale of products for off-label use. Residue tests are required to ensure produce meets the maximum residue limits in place for the destination market. Regional air plans and HSNO regulations must be consulted as there may be further limitations imposed by these regulations.

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