

AUSTRALIAN

# Citrus News

AUTUMN 2020



Forward vision drives  
Gol Gol expansion

P 30

# Extend the working life of your current grading equipment

"Like driving a 5 year old car and hopping into a brand new one, it's amazing to see the advances in electronics over that period. With the increase in productivity the upgrade quickly pays for itself."



## RETROFIT

### Benefits

- Extended machine life
- Minimum training required, easy to use software
- Cost effective solution

### Features

- Latest technology available
- Compatible with most sizers
- LED lighting (efficient & economical)
- New digital cameras with HD resolution
- Remote access, net support (requires internet connection)



UNDISPUTED MARKET LEADER IN GRADING, PACKING, AND HANDLING OF FRESH FRUIT AND VEGETABLES, WE ARE COMMITTED TO ELABORATING SOLUTIONS MATCHING THE VERY NEED OF OUR CUSTOMERS.

OUR ENGINEERING TEAMS ARE DEDICATED TO GIVING YOU THE TECHNOLOGICAL ADVANTAGE YOU NEED TO BE ONE STEP AHEAD.



VISIONARY ENGINEERING FOR THE WORLD

MAF Oceania is always looking for dedicated, enthusiastic Sales Representatives. Please feel free to send your Resume to the email address below.

### MAF OCEANIA

11 Park St, Bacchus Marsh, Victoria, 3340 Australia

Ph: +61 3 5367 3155 Fax: +61 3 53674480

Email: [accounts@maf-oceania.com](mailto:accounts@maf-oceania.com) [www.maf-roda.com](http://www.maf-roda.com)



# AUSTRALIAN Citrus News



Australian Citrus News is written and published by Citrus Australia Limited. (ACN 130 238 792)  
94 Lemon Avenue Mildura Vic 3502  
PO Box 10336, Mildura Vic 3502 Australia  
T: (03) 5023 6333  
F: (03) 5023 3877  
E: admin@citrusaustralia.com.au

[www.citrusaustralia.com.au](http://www.citrusaustralia.com.au)

#### MANAGING EDITOR

**Stephen Cooke**  
Industry Engagement Manager  
Citrus Australia Limited

M: 0427 124 437

E: stephen.cooke@citrusaustralia.com.au

#### DESIGN & LAYOUT

**Clare De Luca**  
Fresh Republic

M: 0413 563 654

E: clare@freshrepublic.com.au



Australian Citrus News has been funded by Horticulture Innovation Australia Limited using the national citrus levy and funds from the Australian Government.

**DISCLAIMER:** Citrus Australia Limited (CA) acknowledges contributions made by private enterprise through placement of advertisements in this publication. Acceptance of these contributions does not endorse or imply endorsement by CA of any product or service advertised by contributors. Any advice provided in articles contained in Australian Citrus News is intended as a source of information only. Always read the label before using any of the products mentioned. CA and its officers do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your practical purposes and, therefore, disclaim all liability for any error, loss or any other consequence that may arise from you relying on the information in this publication. All articles and other material published in this journal is CA copyright (unless otherwise stated) and may not be reproduced in part or full without the written permission of the authors and publisher.

## In this issue...

### CEO REPORT

- 4** COVID-19 impacts on industry key focus of Citrus Australia

### NEWS

- 5** Growers must plan for potential coronavirus disruptions  
**6** COVID-19 Guide in the Orchard and Packing Shed  
**7** Secure labour through the harvest  
**8** Megan MacDonald, Greg Fraser appointed to Citrus Australia Board

### MARKET OUTLOOK FORUM

- 9** Chile an emerging rival for China trade  
**10** Supermarkets set own MRLs in Europe  
**11** MRL compliance an essential part of trade  
**12** Spanish wax formulation protects at low temperatures  
**13** Plastic the sustainable option when used well  
**14** India 'tricky' but worth the effort long term  
**16** Citrus Australia to undertake \$200,000 pilot project on traceability  
**18** Science makes verifying fruit origin simple  
**19** Remote sensing gives early indication of eventual yield  
**22** Market Outlook Forum Gallery

**Cover image:** *Tim Vandenberg on his Gol Gol farm.*

### CITRUS AUSTRALIA HALL OF FAME

- 24** Jack Parr made his vision a reality  
**25** "The tree pays for everything."

### CITRUS VALUE CHAIN INNOVATORS

- 26** Fresh thinking boosts export demand for juice  
**27** Dracula Citrus puts theatre into retail

### MANAGEMENT

- 28** Reward for advocacy on labour issues  
**29** Farm labour guide exclusive to members  
**30** Forward vision with an end goal in sight  
**32** Diversification at heart of expansion plans

### BIOSECURITY

- 35** New multi-industry airborne pest surveillance trial  
**36** Citrus canker restrictions lifted in Darwin

### INNOVATION

- 38** One chapter closes, another opens in citrus postharvest research  
**40** A refresher on postharvest degreening

### OUR CORPORATE PARTNERS





# COVID-19 impacts on industry key focus of Citrus Australia

At the Market Outlook Forum on 3-4 March, several speakers tried to forecast how COVID-19 (coronavirus), which was then most prominent in China, would affect Australian exports.

Unfortunately, as we now know, it has had a much larger impact across the world than most could have imagined.

When Prime Minister Scott Morrison closed our borders on March 20 – as many approved Pacific Islanders were due to board flights to assist with the Queensland harvest – it was clear COVID-19 would not just affect exports, but the entire supply chain.

It has been an extremely busy time for Citrus Australia and our growers as we work with government at the local, state and federal level to find solutions to severe restrictions in accessing a workforce.

We have provided an update on pages 5-7 but I advise you to visit the dedicated COVID-19 page on our website at [www.citrusaustralia.com.au](http://www.citrusaustralia.com.au) for the latest information relevant to your business. Just click on the orange COVID-19 banner on our homepage.

We have also produced the detailed 'Guide to COVID-19 in the Orchard & the Packing Shed' – a living document, which can be found via the COVID-19 page.

It has practical tips to apply to your business, as well as links to current government advice and announcements, to provide one central

source of information. We will continue to revise and update the guide during the season and advise when this happens.

Citrus Australia has reviewed its usual communications, events and programs in preparation for ongoing Government restrictions on movement.

To gain the latest information, growers can follow us on facebook at [www.facebook.com/citrusaustralia](http://www.facebook.com/citrusaustralia)

We have also formed a 'closed' facebook group for citrus growers only. Visit our facebook page and click the blue 'Visit Group' button under the big Vitamin C banner.

We encourage all growers to join this group as we will share regular information on a range of topics.

Despite travel restrictions on staff, our pre-harvest maturity testing in the Murray Valley and Riverland continued under the guidance of Mara Milner, thanks to the help of several businesses, including MFC, Nippy's, Nutrano and Lochert Bros.

Citrus Australia has also been working closely with Department of Agriculture, Water and the Environment (DAWE) to ensure the 2020 KCT export list details are simplified and submitted to China earlier than previously. I am happy to report that the export list has been published on the Chinese Customs website.

Preliminary discussions with Chinese customs have indicated a smoother approval process in 2020 although COVID-19 may cause issues out of our control, such as shipping logistics, movement restrictions and staff availability.

Citrus Australia continues to collaborate with DAWE to ensure the challenges of 2020 are mitigated wherever possible.

Again, we advise you to subscribe and read our eNewsletter and follow us on facebook for updated information on exports.

At the Citrus Australia AGM in March, Queensland grower Megan MacDonald, Redlea Citrus, was appointed to the Citrus Australia Board as a Grower Director, replacing Robert Hoddle, Gunnible Pastoral, who stepped down after two terms to concentrate on his expanding business. Robert made an important contribution during this time and will remain an advocate for our industry.

Current board member Shane Kay, Moora Citrus, WA, was re-elected for another term.

In a separate process later in the year, Plant Health Australia Executive Director Greg Fraser was appointed to the Citrus Australia Board to fill the Independent Director's position that was vacated by Charmaine England.

I would like to congratulate all three and welcome working with them for the betterment of all our members.

The NT government has developed strategies to continue working through to area freedom despite the impacts of COVID-19 on staff movement.

The outbreak of this disease in 2018 was a dark period for our industry but one that we were able to overcome through collaborator.

The impacts of COVID-19 will be felt for many months after the initial restrictions are lifted. Some markets, including our own food service industry, may take years to build back to what they once were as consumer confidence builds. I believe that as an industry we will navigate the pitfalls of this season by once again working together. ●

**NATHAN HANCOCK**  
Chief Executive Officer,  
Citrus Australia



*Nathan Hancock at the Market Outlook Forum in March.*

# Growers must plan for potential coronavirus disruptions

Decisions made by Federal and State governments in response to COVID-19 (Coronavirus) have seen significant disruptions to businesses at the beginning of harvest.

The decision by Prime Minister Scott Morrison to close Australia's borders on March 20 stopped Pacific Islanders about to board flights to Australia to work under the Seasonal Worker Programme (SWP).

The initial decision not to extend the working visas of Working Holiday Makers (backpackers) and those Islanders already in Australia under the SWP caused further angst; as did the Prime Minister's announcement that backpackers would have to self-isolate for 14 days before working, to the surprise of Federal departments and state governments.

State border closures restricting interstate travel (and also intrastate travel in WA) also caused concern.

Citrus Australia has been in daily consultation with Federal and state government Ministers and departments, and other horticulture industry groups, to advocate for our growers.

Meetings with our Regional Advisory Committees and feedback from individual growers have enabled Citrus Australia to raise specific issues and concerns to enable us to seek answers.

Pressure on the Government was instrumental in gaining bridging visas for Working Holiday Makers and Islanders already in the country. Citrus Australia is also working with state governments and departments to gain clarity and guidelines on announcements that affect an accessible workforce.

As information changes so quickly in the current environment, Citrus Australia has created a specific COVID-19 page on our website ([www.citrusaustralia.com.au](http://www.citrusaustralia.com.au)) which is continually updated.

You can find it easily by clicking the orange 'Coronavirus (COVID-19) Updates' banner at the top of our homepage. You can also receive regular updates by following us on facebook and on twitter.

## Key points

- ❖ Information updated daily on website
- ❖ Contingency plans advised
- ❖ Strong domestic demand for citrus

Citrus Australia has formed a 'closed' facebook group for citrus growers only. It is a grower-led group where you can share information on any issue or management practice. Visit our

facebook page and click the blue 'Visit Group' button under the big Vitamin C banner.

We have also created the COVID-19 Guide to the Orchard & the Packing Shed (see story page 7). This living document is also continually updated and will prove invaluable to all growers this harvest.

The regularly updated Guide contains tips and information that growers can apply to their business.

It is important that each business develops a plan using the Guideline,

*continued on page 6*



Citrus Australia has created social media tiles like this, promoting the health benefits of citrus (available from the COVID-19 page on our website) that can be shared and used in your business.



*continued from page 5*

and that they document what is being implemented and make records.

This will be what the authorities in your state will be looking at if you have someone fall sick with COVID-19.

It will minimise the number of people who get sick and the number who will need to be isolated.

Ultimately it will reduce the impact on your business and keep your people safe.

From our work so far, Citrus Australia advises all businesses to:

- Visit our website and see what rules apply to your particular State, including border movement, quarantine and isolation
- Use our Guide to prepare contingency plans for a suspected or confirmed case of COVID-19 in your workforce
- Ensure your business can meet social distancing requirements in the orchard and the packing shed

- Register your labour requirements with MADEC on 1300 436 332. This will help MADEC ensure registered workers are in the regions when required

Businesses that have already implemented a biosecurity plan and that are food safety accredited will find it easier to add COVID-19 policies to protect staff on farm, in packing sheds and in offices.

As an example, all visitors (including delivery drivers) should report to the office, where social distancing information and added hygiene practices (sanitiser) should be in place. Signs on the front gate should be added to alert people (including backpackers) not to enter the property if they have not made a prior arrangement.

Although all scheduled Freshcare FSQ4.1 Update workshops have been postponed, Citrus Australia has created an online learning tool at [www.citrusaustralia.com.au](http://www.citrusaustralia.com.au)

In good news, several sources have

revealed there has been strong demand for citrus, as consumers recognise that fresh produce is good for their health. Citrus Australia has created social media tiles promoting the health benefits of citrus (available from the COVID-19 page on our website) that can be shared and used in your business to help promote this. Further marketing campaigns will be run over the course of the season.

We have been informed that shipping lines are working as well as can be expected and refrigerated containers will be available when export season is on in earnest.

Packing sheds and exporters have been strongly encouraged to liaise with shipping companies to keep them aware of expected volumes to be shipped, and to try and stay as accurate to that estimate as possible. Shipping companies will require the best intelligence possible to meet export requirements. ●

# Guide to COVID-19 in the Orchard and Packing Shed

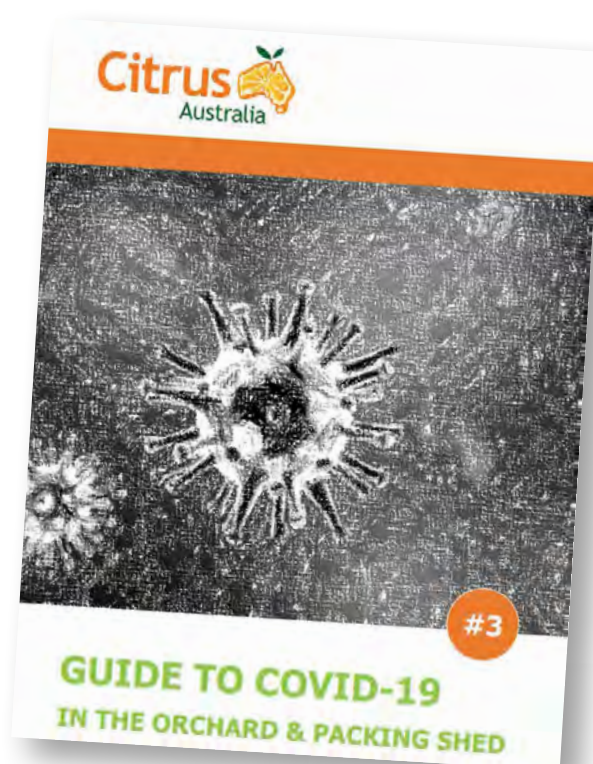
Citrus Australia has prepared a comprehensive guide for the citrus industry on dealing with COVID-19 in the orchard and packing sheds.

You can find it easily by clicking the orange 'Coronavirus (COVID-19) Updates' banner at the top of our homepage ([www.citrusaustralia.com.au](http://www.citrusaustralia.com.au)).

It has practical tips to apply to your business, as well as links to current government advice and announcements, to provide one central source of information. We will continue to revise and update the guide during the season and advise when this happens.

The guide has detailed sections on:

- Preparing a pandemic plan for your business
- Risk management
- Managing your workforce
- Practical safety measures
- What to do with suspect or confirmed cases of COVID-19
- A checklist for business
- Personal disclosure statement ●



# Secure labour through the harvest

The decision by Prime Minister Scott Morrison to close Australia's borders on 20 March stopped Pacific Islanders about to board flights to Australia to work under the Seasonal Worker Programme (SWP).

Citrus Australia and other horticulture peak bodies lobbied the Australian Government to extend the visas of both Pacific Islanders already working in the country through the Seasonal Worker Programme (SWP) and Pacific Labour Scheme (PLS), as well as Working Holiday Makers (backpackers).

On 4 April, Agriculture Minister, David Littleproud, announced that SWP and PLS workers would be eligible to extend their stay in Australia for 12 months to work for Approved Employers.

There are approximately 8,000 Seasonal and Pacific Workers in Australia at present.

Citrus Australia policy officer Kerry Thompson advises that for businesses interested in hosting workers through the SWP or PLS, now is a good time to apply to become an Approved Employer at [www.employment.gov.au](http://www.employment.gov.au)

Under the new rules, SWP workers with visas due to expire will be able to apply for a Temporary Activity (subclass 408) visa in the Australian Government Endorsed Event (AGEE) stream.

PLS workers with visas due to expire can apply for a new Temporary Work (International Relations) (subclass 403) Pacific Labour scheme stream visa via the Department of Home Affairs online lodgement portal, ImmiAccount.

"Once a worker has applied for a new visa, they will need to await the outcome of this application," Kerry said.

"During this time, their current visa may expire, in which case they will automatically transfer onto a bridging visa.

"Workers currently in Australia under these programs will also be exempt from the requirement to work for a single employer, and will be able to move between Approved Employers,

## Key points

- ❖ Prepare contingency plans
- ❖ Secure labour needs now
- ❖ Prepare for unusual interruptions

allowing flexibility and continued support for the agriculture sector in meeting seasonal workforce demands."

Current SWP and PLS arrangements will be carried over to the new visa, continuing the link with the agricultural sector.

These temporary measures are not intended to prevent the recruitment of Australians to undertake this work.

Before seeking access to SWP workers, employers must first try to recruit Australians (labour market testing).

"Existing portability arrangements will continue for seasonal workers employed by Approved Employers in the pilot regions of Sunraysia, Goulburn/Murray, Riverina and Wimmera Mallee, which commenced on 1 January 2020," Kerry said.

Approved Employers can share Seasonal Workers in a multi-sponsor arrangement under the Worker Portability Pilot program. They should call the SWP Information Line on (02) 6240 5234 to discuss their plans to share seasonal workers.

Any Seasonal Workers in Australia that still have a valid visa, but do not have any work will be placed into a pool, to be relocated where work is available.

Measures will be taken to try and limit the movements to within the State given the various border restrictions and quarantine requirements.

Those seeking Seasonal Workers can contact (02) 6240 5234 or [SeasonalWorker@dese.gov.au](mailto:SeasonalWorker@dese.gov.au)

"You do not necessarily need to be an Approved Employer, as there may be a local contractor that you can hire SWP or PLS workers through."

## Working Holiday Makers (WHM)

There are approximately 140,000 WHMs in Australia at present.

Minister Littleproud announced that Working Holiday Makers who work in agriculture or food processing will be exempt from the six-month work limitation with one employer, and will be eligible to work for up to 12 months.

WHMs will be eligible for a further visa, if their current visa is due to expire in the next six months.

WHMs must apply for a new visa before their current visa expires. Whilst a decision is being made on their new visa, a bridging visa will come into effect, to allow them to remain lawful, and to continue having working rights.

WHMs and employers can check Visa Entitlement Verification Online (VEVO) to view WHMs work rights.

If a WHM is working in agriculture but is not eligible for a further WHM visa (because they haven't completed their 88 days) and is unable to return to their home country, they can apply for a Temporary Activity (subclass 408) Australian Government Endorsed Event (AGEE) stream visa, which includes working rights, for free.

As we go to print we are expecting announcements from states and territories relating to the movement of temporary visa holders and seasonal workers (including Australians).

We encourage you to check our website regularly for updates. ●

Further information:  
<https://covid19.homeaffairs.gov.au/>



# Megan MacDonald, Greg Fraser appointed to Citrus Australia Board

Queensland grower Megan MacDonald, Redlea Citrus, Coringa, was appointed to the Citrus Australia Board as a Grower Director at the AGM in March.

Current board member Shane Kay, Moora Citrus, WA, was re-elected for another term.

In a separate process later in the year, Plant Health Australia Executive Director Greg Fraser was appointed to the Citrus Australia Board to fill the Independent Director's position that was vacated by Charmaine England.

## Megan MacDonald

Megan and husband Hamish have 40,000 mandarin and lemon trees on 110 hectares over three sites on the Burnett River.

The MacDonalDs grow mandarins, including Imperial, Honey Murcott and Royal varieties, as well as seeded and seedless Eurekea lemons.

They have a packing house onsite and send to several export markets,

"Citrus Australia is not new to us," Megan said. "After participating in a Citrus Australia tour to China, our business has focused on more export varieties and the value that brings to a business."

The MacDonalDs are also accredited labour providers, which enables them



*Hamish and Megan MacDonald on their Queensland farm.*

to extend the season for their workers from the Pacific Islands through further employment on other farms in the region.

Unfortunately, COVID-19 border restrictions meant they could not access their regular workers from the Pacific Islands this year.

Being owner/manager with Hamish of a smaller citrus business, and a working mother, will frame her contribution to the strategic direction of Citrus Australia, Megan said.

"I would think that our business size and make-up would be representative of many growers in the industry," she said.

Hamish manages the orchard and is responsible for labour, and Megan manages the packing shed and marketing of their fruit. As such, she believes the recent formation of the World Citrus Organisation could prove a great benefit for the Australian industry.

Megan replaces former Grower Director Robert Huddle, Gunnible Pastoral, who stepped down after two terms to concentrate on his expanding business.

Citrus Australia CEO, Nathan Hancock, said Robert had made an important contribution during two terms on the board.

"Robert's passion for the industry is evident to all those who have met him, and he brought this energy and enthusiasm to Citrus Australia," Mr Hancock said.

"He always had the requirements of members front of mind, searching for ways to improve their profitability within the bigger picture of industry growth.

"We thank Robert for his time and know he will remain an advocate for our industry."

## Greg Fraser

Plant Health Australia Executive Director Greg Fraser has been appointed to the Citrus Australia Board as one of two Independent Directors.

Greg was appointed to fill the casual vacancy caused by the resignation of Charmaine England, who stepped down due to increased family and business commitments.

Greg has been CEO at PHA since 2008 and will retire from that position in July. He has been Chair of the Plant Biosecurity Research Initiative since July, 2018, and is a graduate of the Australian Institute of Company Directors.

"Clearly a big issue for the industry is biosecurity - both our borders and on-farm. We must strengthen both and everyone has an important role to play."

Greg worked with Citrus Australia CEO Nathan Hancock and other stakeholders in the citrus canker response in the NT and northern WA.

Stakeholder engagement at PHA, whose members were all levels of Government and industry bodies, including Citrus Australia, was integral to its success, Greg said. He plans to apply the same approach to his role at Citrus Australia. ●



*Greg Fraser, Executive Director, Plant Health Australia*



# Chile an emerging rival for China trade

Chile's debut as a source of citrus for China and intention to increase plantings by 12,000 hectares hover as a potential challenge for Australian exporters, Citrus Australia general manager of market development David Daniels says.

China granted Chile permission to ship to China late last year.

In 2019, Chile delivered 360,000 tonnes into the US for US\$998/t while Australian oranges to China sat at about US\$1600/t.

"Clearly the Chileans could be very, very competitive on price," David said.

"The assertion that our fruit's better and sweeter and has better colour is very, very true, but at the end of the day they're producing a lot of it, they're shipping a lot of it and somebody's eating it."

Mainland China and Hong Kong took 122,000t of Australian citrus in 2019, or about 40 per cent of the more than 300,000t sent overseas.

"The value last year was \$541 million, with growth led largely by mandarins," David said.

"While we don't feel that Chile will compete very well on quality, there are a number of factors in their favour."

He said the existence of a solid Chile-China bilateral relationship unencumbered by political



David Daniels



Some 220 delegates attended the Market Outlook Forum in Melbourne.

complications allowed the countries to reach agreement on access incredibly fast.

Secondly, they also have a Free Trade Agreement with China so it is a level playing field as far as tariffs go.

Chile is also free from fruit flies so their fruit does not have to undergo any treatments.

And finally, Chilean exporters will be sending fruit "on consignment" so it will be a year where their fruit will be really tested in the market.

"I'm sure the Chinese trade will happily receive the fruit if they don't have to make payment until it is sold."

David warned that Australia's focus on trade with not only China but also Japan left it perhaps overly reliant on these two markets.

"The other major competitor we have is South Africa - a massive exporter.

"The Spanish actually export more citrus than anybody else but they don't do it by ship so technically South Africa is the world's biggest shipper

with two million tonnes - something like six times the volumes we're doing at the moment."

He said roughly 300,000 tonnes of this went to China and Hong Kong in 2019 but South Africa was projecting an increase in yield of up to 500,000t once upcoming plantings entered production.

David said South African exporters worked around the generally inefficient port network by chartering an entire vessel to move 5000t of fruit to China last May.

"We know that South African access to the Philippines is also a done deal that could be a very real threat; the Philippines is a market we've worked very hard at developing. It's cracked the 10,000t mark and it's well inside the top 10 for us." ●

# Supermarkets set own MRLs in Europe

Options for treatment of citrus both in the field and after harvest are dictated increasingly by buyers in Europe's more prosperous regions, where supermarkets now routinely set their own maximum residue limits (MRLs).

Decco research and development manager Dr Clara Montesinos shared insights from the perspective of the Spanish-based company, a world-leader in supplying post-harvest solutions.

"The trend in Europe is going green," Clara said. "Over the past decade there's been more and more concern about health and environmental studies.

"The citrus-growing areas are all in the south of Europe; we're not the richest. In the centre the money is more concentrated and that's where most of the supermarkets are established and the political decisions are taken."

Typically, citrus labels must now list any pesticides used post-harvest – something not required for any other fruit. "You can eat the peel of apples and you don't need to know which pesticide is there, but you don't eat the peel in citrus and we still need to mark it," Clara said.

And of the 10 fungicides approved for post-harvest use at the start of 2019, half have now been deregistered completely or had their limits lowered.

Clara said pressure exerted by groups such as Greenpeace was influencing consumers.

"Around 2010 Greenpeace analysed all the fruits and vegetables in the supermarkets and published a list of the ones with the highest content of fungicides and pesticides," she said.

"That started a competition to be the greenest supermarket."

Clara said packing houses in Spain received tables from their customers specifying acceptable limits, which in some cases were only one third of the official European MRL. Cumulative treatment totals were also given, she said: "If they set a maximum of five, between the field and post-harvest the most that can be used is five."



*Clara Montesinos*

She said as consumers became ever-greener "some of the supermarkets are going totally residue-free".

Europe's fresh produce was categorised in four tiers, Clara said: 'conventional' (few pesticides), 'non-tratée' (no post-harvest fungicides and only some pre-harvest pesticides), 'zero residue' (no pesticide residue from either pre- or post-harvest) and 'organic' (no pesticide residue; all alternative treatments must be certified).

Clara said "only organic citrus is really paid better than conventional – zero-residue fruit doesn't have a different price so the farmer or the packing house is not getting more money".

On the plus side, "all the zero-residue is sold, that's for sure, because there's not enough being grown for demand in the market".

In response Decco has released a line of zero-residue substitutes.

"The first thing we do when a packing house is turning from the conventional mode of production to

zero-residue or organic is be clear: alternative treatments are not as effective as conventional treatments with pesticides.

"They need to be more careful about the way they work. They need to be cleaner and more organised. They need to disinfect more carefully and get rid of the pesticide residues they have in all their materials.

"This is a process from the field to the market."

Clara said waxing was also restricted, with some customers using a vegetable wax or even "edible proteins" based on fatty acids.

Decco's priority was to continue developing natural fungicides and biological controls such as a yeast that out-competed pathogens for nutrients and surface space, she said. ●

# MRL compliance an essential part of trade

Agrichemical manager Alison MacGregor said communicating changes in MRLs was central to Citrus Australia's role in supporting trade.

"A Maximum Residue Limit is the maximum concentration of an agrochemical that's legally permitted to be present in food at harvest," Alison told MOF 2020 delegates.

"Internationally, MRLs are set by the World Health Organization, and known as the Codex Alimentarius MRLs, but every country can also set its own MRLs for each agricultural chemical in each crop.

"The challenge our industry has is making sure we comply with MRLs within all these markets."

Alison said "when a country is setting MRLs for citrus, they consider the 'acceptable daily intake' of each chemical - essentially, how much of the chemical we can consume, from all sources in our diet, without any effect on health".

"It's not just how much chemical we're getting in citrus; they have to consider how much chemical we're getting in everything we eat.

"Then they work out the proportion of that chemical that could be in our diet from citrus, based on how much citrus the average consumer eats.

"In Australia there are fruits that children eat a lot of. Think about how many mandarins go into primary school lunch boxes.

"Because kids eat a lot of mandarins, MRLs for chemicals in popular fruit like mandarins need to be set VERY low to limit the potential intake of chemicals from mandarins.

Another factor is that diets vary between countries. Alison said consumption of cabbage was an example.

"Each year, the average Korean eats 12 kilograms of cabbage. In Australia we eat less than half of that."

She said if a chemical is permitted in a staple food, like cabbage in Korea, but is also applied to citrus, then MRLs for citrus imported to Korea could be set comparatively low in order to keep the total residue of that chemical in Korean diets well below the acceptable daily intake.

Alison said Citrus Australia produced an up-to-date table of MRLs every six months covering Australia's 15 major markets. Any changes to MRLs in the preceding year are highlighted in yellow.

More frequent alerts on specific topics are also circulated.

She said participation in a screening program that is aligned with the Federal

government's National Residue Survey provided citrus with an accurate annual assessment of industry's compliance with MRLs.

"In 2019, 17 packers were involved and sent off samples for more than 500 tests - an amazing cross-section of the industry," Alison said.

"The screening includes 310 chemicals and metabolites - a wide screen to take in as many agrichemicals as possible during the test.

"Only 51 of those in the screen are actually registered for use in citrus, but it's important to show our overseas customers that we screen for everything that could possibly be in there."

Alison said about 20 per cent of samples were also analysed for biological pathogens such as E-coli, Salmonella and Listeria, and for heavy metals.

She said in 2019 the detection of just one chemical in a sample was confirmed as exceeding an Australian MRL; just a single sample out of 500 multi residue or biological test samples suggested Australia's citrus industry was "doing very, very well". ●

Contact Alison at [alison.macgregor@citrusaustralia.com.au](mailto:alison.macgregor@citrusaustralia.com.au) or on (03) 5023 6333.

## THE PERFECT DELIVERY SYSTEM FOR CITRUS



### UNIRAM™



- ✓ Locally manufactured to ISO 9261
- ✓ Largest filtration area of any dripper
- ✓ Wide range of flow rates - 0.7, 1.0, 1.6, 2.3, 3.5 L/H
- ✓ Available in AS, CNL and RC
- ✓ The most robust Dripper for 20+ years\*  
(\*subject to following Netafim maintenance instructions)

### FERTIKIT™ 3G

Modular, fully configurable multi-channel delivery system



### NETAJET™ 4G

Ultimate precision in minimum time dosing system



→  
Tel: 1300 307 407  
[au.networks@netafim.com](mailto:au.networks@netafim.com)  
[www.Netafim.com.au](http://www.Netafim.com.au)

# Spanish wax formulation protects at low temperatures

Spending 40 days in transit at only 2°C creates an elevated danger of chilling injury in citrus leaving Spain for the booming China market.

As a result, Spain's leading provider of post-harvest solutions, Decco, has developed a solution.

"After Spain was banned by Russia due to quality conditions we had to open new markets," Decco's global research and development manager Dr Clara Montesinos said. "The largest are Canada, Southeast Asia and the Gulf countries but China is also very good for us because of the price it's willing to pay."

The presence of Mediterranean fruit fly is an export impediment, however.

"China needs the fruit to be really firm and a beautiful colour with no blemishes but there are quarantine protocols we have to follow," Clara said. "For Spanish exports, the temperature needs to be 1.7°C for a journey of 17 days or 2.1°C or less for 21 days or longer. Our shipment time to China is up to 40 days.

"With 40 days at 2°C there's a high risk of chilling injury, and for some cultivars this is impossible to do."

With the aim of supporting customers in this trade, Decco has worked to devise a new form of protective wax.

The result is Citrashine Long Life.

Initially, laboratory evaluation of the product was based on monitoring Navelina oranges treated with a range of five waxes – four of which, including Citrashine, were new – against a control group to determine both weight loss and cold damage. The fruit was stored boxed and unboxed for 38 days at 0.5°C and three days at room temperature. Weighing was carried out twice: after 13 days at 6°C and eight days at room temperature.

"We stored the fruit colder than required for the protocol and also left



**Custom Designed, totally integrated packaging solutions for the Australian Citrus Industry.**  
*Complete turnkey installations and after sales support.*



- Laminated film options
- Wineglass, Clip2Clip and adhesive labels
- Clipping wire
- Knitted and extruded net

**edp australia pty ltd**

phone: (03) 5820 5337

**www.edp.com.au**

 email: [robm@edp.com.au](mailto:robm@edp.com.au)



some at higher temperatures to make sure there was enough weight loss to appreciate the difference between the waxes. All were more or less the same weight as the control.”

However, variations in appearance, firmness and flavour were clear, favouring Citrashine across the board.

Additionally, in a second round of testing, “treatment with hot water previous to waxification improved efficacy”, Clara said, and when the

Citrashine trial was repeated with Ortanique mandarins, 40 per cent of control fruit suffered chilling injury while the waxed fruit was firmer and unblemished.

“In real-life tests fruit treated with Citrashine Long Life has had less than four per cent chilling injury and only slight damage,” Clara said.

She said Citrashine’s relatively dark colour compared with conventional polyethylene waxes made using

the right dose and even application essential but “with more than 17,000 litres of the product sold since the second half of last season going to China, Dubai, Korea, Saudi Arabia and the US, customer satisfaction is already very high”. ●

# Plastic the sustainable option when used well

Plastic itself is not the cause of environmental pollution but complications arise when consumers are unable to dispose of it appropriately.

This point was shared by the world’s leading provider of fresh-product packaging systems and solutions, Giró, via group business strategy and sales director David Porta.

“Is plastic the culprit?” David said. “No.

“Materials are not ‘good’ or ‘bad’; materials are used in the ‘correct’ or ‘incorrect’ way.”

Based in Spain, where it was founded more than 90 years ago, Giró supplies the Australian citrus industry through local distributor EDP.

“Giró was initially a textile company producing stockings,” David said. “It was the grandfather of the current president who had the brilliant idea of putting fruit inside instead of women. In that way Giró invented, more than 50 years ago, the net pack.”

Conscious of the need to work with retailers to produce environmentally sustainable outcomes, Giró is at the forefront of innovation once again through its development of a new range of 21st-century packaging machinery and consumables.

“Sustainability is everywhere,” David said. “There is widespread demand for a more sustainable world and there is concern about single-use plastics.

“We all need to educate consumers on intelligent disposal of this plastic so

that we don’t float it into the rivers and the sea.”

For Giró, the solution involves not only minimising the plastic content of its fruit packs but also collecting and recycling these in a circular economy.

David said many consumers were unaware that plastic was actually more sustainable than paper in terms of its carbon footprint: “When producing paper we need a lot of water and much more energy than when producing plastic so in the end plastic is more sustainable if we can recycle it.”

Under its recently established Ecogiró brand, Giró now offers a lightweight recyclable known as Netpack.

While the original extruded Ultrabag comprised 18.14 grams of plastic (10.35 grams of net and 7.79 grams of film), today’s knitted equivalent – giving the same storage, transportation and presentation advantages – requires barely more than one third of that: 6.26 grams of plastic (1.75 grams of Ecolight net and 4.51 grams of film).

Streamlining its own use of plastic, working to eliminate over-packaging and emphasising the need to recycle are not the only steps Giró is taking, however.

At the same time, in response to pressure from European supermarket chains, it is providing organic



David Porta

packaging for produce in lots of up to 1.5 kilograms.

“Europeans are saying ‘We want good 100 per cent compostable materials’ while the US, the UK and Australia are looking for lightweight plastic packaging that won’t confuse consumers and contaminate the plastic waste bins.

“We’re seeing these two different trends.” ●

# India ‘tricky’ but worth the effort long term

While much of the citrus world focuses on either breaking into or expanding already-established markets in China, India looms as a potential key importer of fruit such as mandarins and premium navel oranges, Citrus Australia CEO Nathan Hancock says.

Nathan, who visited India late last year, told delegates that high density populations and road congestion meant that fruit and vegetable sales were sold on an ultra-local scale through an estimated 12 million street kiosks and small format stores called Kirana.

“That last mile is by far the most difficult part, how we as an industry will get sales into the Indian market that overcome the last mile and find the end consumer,” he said.

“Kirana isn’t where I see the growth for our industry. There are many examples of modern retail in India, many combinations of bricks and mortar and online sales.

“The retail sector is growing at a fast pace and is heavily influenced by international chains.”

Egyptian citrus has made inroads into the market, as has South Africa. Both predominantly trade Valencia oranges.

Many feel there is an opportunity to upsell the superior qualities of Australian navel oranges as a premium product.

However, India tended to favour local produce as a means of supporting its own agricultural economy, often regardless of its low quality when compared to imports.

He said that, as in any market, building relationships would be crucial as Australia looked to forge trade links with Indian customers.

In the same session a snapshot of the trade environment throughout South Asia in general was presented by Sam Munsie, assistant director of trade and market access with the federal Department of Agriculture.

“South Asia as a whole - Afghanistan, Bangladesh, Bhutan, the Maldives, Nepal, India, Pakistan and Sri Lanka - is home to a quarter of the world’s population and is the most populous



Market Outlook Forum MC Jon Hey, from Fruit Net magazine, with panel members Neil Barker, BGP International, Sam Munsie, Federal Department of Agriculture, and Nathan Hancock.

and most densely populated region,” Sam said.

*“In terms of the Indian market itself, it’s huge. It’s 1.3 billion people. We’d like to say it’s too big to ignore, really.”*

“India’s middle class is growing at quite an amazing rate, just the sheer volume.”

Sam said 24 per cent of households were categorised as being middle-income or higher in 2018 but that was expected to hit 51 per cent by 2030.

“That’s expected to lead towards a quadrupling of consumer spending,” he said.

However, Australia was “not alone in seeing the opportunities of the Indian market”, he warned.

“A lot of our competitors are also watching to see what’s going on but some of the momentum we have through our government’s business to business level puts us perhaps in a little bit better place than some others.”

Sam said two reports relating to the India market were useful: the ‘India Economic Strategy’ and one written by the Australian Bureau of Agricultural Resource Economics called ‘What India Wants’.

He said it was important to acknowledge that India was in fact a collection of individual markets rather than a single entity, arranged as a federation of states in the Australian style.

Indian demand for fresh fruit in general was skyrocketing, Sam said.

“Between 2009 and 2018 fruit imports in India grew by 178 per cent. Consumption of fruit is expected to grow by a further 246 per cent



51 per cent of India's population will be classified as middle-income or higher by 2030.

by 2050, based on those 2009 levels, and imports are expected to make up a larger proportion of total consumption."

Challenges included the fact "Indian trade policy is dominated by Indian domestic politics – and that means tariffs, excise duties, a lot of non-tariff

barriers that can all affect trade", he said.

"Much of this is driven by the fact the Indian Government, overall, wants to feeds its people and make sure it supports its poor. There's currently no Australian free trade agreement with India but, importantly, it's unlikely that

many of our competitors are going to get an FTA, either."

In a panel discussion also involving Neil Barker of fresh produce exporter BGP International, Nathan said in the interests of establishing a presence in India Australian businesses might adopt a long-term strategy and "accept a slightly lower price – it doesn't have to be right back to second-grade or third-grade prices; it just needs to be slightly off what China's been paying – in order to build relationships".

Neil said the window of opportunity for landing citrus in India was from roughly July until early October.

He said the lack of cold storage facilities and the belief that navel oranges were prone to decay made Valencias the preference among Indian buyers. Oranges in general were not widely eaten as whole fruit but were more often processed so scope existed for educating the public on a new way of consuming citrus. ●

## CITRUS AUSTRALIA WOULD LIKE TO THANK OUR MARKET OUTLOOK FORUM 2020 SPONSORS

### Joint Major Sponsors



### Sponsors



### Exhibitor Sponsors



# Citrus Australia to undertake \$200,000 pilot project on traceability

Agriculture Victoria has engaged peak body Citrus Australia to undertake a \$200,000 pilot program aimed at improving traceability in horticulture supply chains.

Emerging technology has the ability to strengthen traceability in fruit supply chains – from the farm right through to domestic and international consumers.

The pilot traceability scheme will demonstrate the application of these technologies to a horticultural business in a real time environment – from application of unique codes to individual packs, through to tracking them in the marketplace.

Potential weaknesses in the ability to validate the provenance of Australian citrus, counterfeiting and food recalls can all jeopardise supply chains and

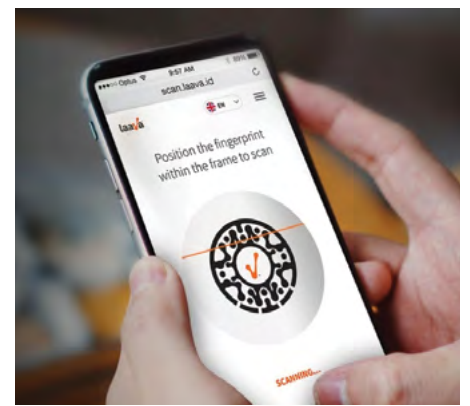
these will be addressed in the pilot.

Citrus Australia CEO, Nathan Hancock, said:

“The Australian citrus industry has grown to over 27,000 hectares and contributes over \$850 million to the national economy through farm gate sales.

“In 2019 the industry achieved new export records of 304,000 tonnes of high quality citrus at a value of A\$541 million.

“International customers are vital to the future success of the industry



*Laava Smart Fingerprint technology will be used in the traceability pilot.*



## REACH NEW HEIGHTS

- » Turbulent, targeted air
- » Superior coverage
- » Drift reduction
- » Reduced water rates

Don't take any chances with your fruit – Quantum Mist fans are unmatched in horticulture application worldwide for coverage, both on the canopy leaves and the fruit beneath. The proof is in the harvest.

**Farm demonstrations available - call us today.**

**Freecall 1800 999 162**  
**Email [sales@croplands.com.au](mailto:sales@croplands.com.au)**  
**[croplands.com.au](http://croplands.com.au)**







*MFC is taking part in the pilot.*

and we're excited to lead this project, which will help secure existing and future market access and protect our reputation of growing the world's best citrus fruit."

Citrus Australia has engaged technology companies Laava ID, provider of Laava Smart Fingerprint technology, and Trust Provenance, a provider of blockchain technology, to develop a traceability system pilot for export citrus fruit supply chains extending from Australian growers to overseas consumers.

Laava ID uses advanced computer vision technology developed in collaboration with CSIRO to produce a unique 'fingerprint' that can be scanned by any smartphone.

Unlike barcodes or QR codes which have been used in the past, Laava's Smart Fingerprint technology is much harder to impersonate or replicate (a technique known as 'spoofing') and much more secure, making it more resistant to counterfeiting.

It also delivers detailed brand and product information and interactive experiences to consumers and can be easily modified to include new features.

Trust Provenance have built an integrity system that allows multiple data points on a product to be linked into the one data platform.

Real-time, digitised data, secured using distributed ledger cybersecurity infrastructure (aka blockchain) and available to supply-chain partners using permission for who-sees-what.

Citrus Australia partners in the trial will include Mildura Fruit Company, Australia's largest packer and exporter of fresh citrus, and Nu Leaf IP, which is the master licensee in

Australia for Tang-gold, a high value seedless mandarin variety bred by the University of California, Riverside, USA.

MFC Sales and Marketing Manager, Marcus Scott, said the company was excited to take part in the trial.

"Protecting our brand is vitally important now, and will be even more so in the future. We are excited to see how this technology can be applied to the advantage of the industry."

Nu Leaf IP General Manager, Matthew Cottrell, said growers invest significant time and resources planting premium varieties such as Tang-gold.

"So it is crucial that technology that can support and protect growers and the proprietary varieties also improves and innovates.

"Nu Leaf sees benefits in this technology throughout the supply chain, from legitimising plantings and fruit through to the protection of brands."

The project will be delivered within a seven-month period that encompasses the 2020 citrus harvest period.

Results of the trial will be used to educate other horticultural industries of the benefits of traceability. ●

## COMPLIANT, RELIABLE LABOUR HIRE FOR YOUR NEXT HARVEST



### Delivering quality permanent and casual staffing solutions to Australia's citrus farms

Work with our experienced team who genuinely understand the staffing requirements of citrus farming and the industry challenges for growers.

#### HOW WE DO IT

Agri Labour Australia are agriculture recruitment specialists with a **national footprint** and offices nationwide that sees us operationalising skilled labour anywhere in Australia.

Our unique **workforce retention capability** allows us to partner with clients to deliver work ready, compliant and experienced staff to increase productivity for your next harvest.



#### STAFFING SOLUTIONS FOR

- ✓ ORANGES
- ✓ LEMONS
- ✓ MANDARINS
- ✓ LIMES
- ✓ GRAPEFRUIT

#### WHEN YOU NEED

- ✓ GRADERS & PACKERS
- ✓ PACKSHED SUPERVISORS
- ✓ QA MANAGERS & ASSISTANTS
- ✓ TRUCK & FORKLIFT OPERATORS
- ✓ WASTE MONITORS
- ✓ PICKERS



Connect with candidates who get the job done

Call 1300 247 823

| [www.agrilabour.com.au](http://www.agrilabour.com.au)



# Science makes verifying fruit origin simple

Being able to verify the physical source of citrus starts with establishing a baseline origin fingerprint for fruit from particular areas.

Gordon Fisher explained the process used by New Zealand company Oritain, a specialist operating throughout Australasia, Europe, the UK and the US.

“The name is from the phrase ‘proving origin, protecting reputation’,” Gordon said.

“Oritain was formed by a couple of professors out of the University of Otago using forensic science.

“We partner with food, fiber and pharmaceutical clients who want to protect and promote their brands.”

Gordon said traditional traceability relied largely on labelling and barcodes with the result that it “is lost often once the packaging is tampered with or removed”.

The Oritain solution, on the other hand, is a scientific test of the physical product itself that cannot be forged.

“Why are we hearing more and more about the importance of traceability? In short, consumers are expecting it, with safety and quality every time.

“The citrus industry is clearly one of the leaders in this area, where we’re regarded as having higher quality and food safety attributes that allow us usually to price at a premium. But, with the claims brands are making, of course the risk of counterfeit inevitably grows.”

Gordon described the incidence of food fraud globally as “huge”: “It’s a massive problem in export markets, where brand origin is a key purchasing driver for the majority of consumers.”

Science enabled origin to be proven, he said. “Nature is all we really need. Oritain tests the actual product for its



*Gordon Fisher*

very own ‘origin fingerprint’, based on different trace elements and isotopes absorbed as a result of growing in a particular region. It’s influenced by the soil, bedrock, sun, wind and weather generally.

“In the case of horticulture we physically collect samples at the point of harvest and Oritain’s science team then analyses these.

“Depending on the requirements of the client, this could be a country, a geographical region or even all the way down to a farm of origin fingerprint.

“If we collect samples of citrus from an orchard in Griffith they will have a different origin fingerprint from citrus grown in Mildura due to the physical locations of the trees. This is where it becomes really insightful in determining where something is from, particularly for clients who have brands they want to protect.”

Gordon said once the baseline origin fingerprint had been determined Oritain was able to compare it to in-market audit samples of products claiming to be from a particular source, gathered from various points in the supply chain.

“We take these back and test them and then determine if the samples match with the claim of origin.” ●



## Citrus growers, don’t gamble with frosts.

Extreme temperature ranges are here to stay. That means managing frost risk to avoid devastating losses.

Calculate the R.O.I. by installing a quiet, reliable and efficient **FROSTBOSS C49**.

[bossthefrost.com.au](http://bossthefrost.com.au)

**Ben Daking**  
**M** +61 448 111 384  
**P** 1800 797 629  
**E** [info@aussiefrostfans.com.au](mailto:info@aussiefrostfans.com.au)  
[aussiefrostfans.com.au](http://aussiefrostfans.com.au)

**AUSTRALIAN**  
**frost fans**

FRF 101

# Remote sensing gives early indication of eventual yield

Remote sensing of citrus blocks can give an early indication of eventual yield, Professor Andrew Robson of the University of New England says.

“Basically, we’re measuring something without physically destroying it,” Andrew said. “There are lots of tools that do it – some are really good, some are in the evaluation stage – but they all provide useful information if used appropriately.”

Andrew said for the first time he could present results specific to citrus.

“This work was done in Western Australia with Moora Citrus.

“We evaluated satellites and planes over Moora to work out whether we could measure tree health and how to correlate that with given quality.

“At Moora we identified seven different blocks: some Washington navel, some mandarin.

“We looked at the variability in those blocks and tree health and selected locations that represented high, medium and low growth.

“The airborne system was run by ArborCarbon, an airborne system in Perth, that runs a plane with 2.5cm up to 30cm pixels – really high resolution.

“We captured it in February, which was basically final fruit set, and in May, pre harvest.

“We also used the WorldView satellite provided by NASA at a cost of \$22 per hectare.”

Andrew said the first priority was examining variability in each block.

*“If you’re a grower looking at all your farm, it’s useful to see which spots are performing well and potentially which ones aren’t.*

“We classified each block separately so we got that variability of high growth meeting low growth.”

As part of the project WA Citrus industry manager Bronwyn Walsh counted individual pieces of fruit on selected trees to establish calibration points for high, medium and low growth.

“We built a relationship between the canopy reflectance from all these



*Andrew Robson, University of New England.*

points, then did a forecast. We applied that and got a prediction of the average kilograms per tree.”

Andrew said figures recorded at harvest showed the accuracy of projections based on pre-harvest sampling had been “quite high”.

Attempting to apply an algorithm developed in one crop in one year to another situation was “dangerous”, he said, but remote sensing required fruit on only 18 trees to be counted as opposed to the 70 typically sampled by Moora Citrus’s Shane Kay when preparing estimates.

He warned that the more “time and effort we spend on those 18 trees to get it right, the more accurate the calibration is”.

Andrew said the next step would be moving into a three-year federally funded project to identify the most effective sensor for yield forecasting and at the same time map all commercial citrus Australia-wide, starting with a continuation at Moora Citrus and extending to the Mildura and Riverina areas to produce an accurate overview of not only existing plantings but also industry expansion. ●



*Trials were conducted at Moora Citrus in Western Australia.*

# JOIN US TODAY



## WE INVITE ALL GROWERS TO JOIN AS MEMBERS

Taking a membership with Citrus Australia provides additional funds to invest in our team and programs, including government liaison, which will become more critical as we provide grower representation in the areas of labour, water, biosecurity, market access, agrichemicals, infrastructure, energy, research and development.



### MEMBERS ALSO RECEIVE THE FOLLOWING BENEFITS:



Nominate to represent your fellow growers on the Citrus Australia board



Unlock the members section of the Citrus Australia website



Get your special invitation to Citrus Australia meetings and events



Own a piece of Citrus Australia



Nominate to represent your fellow growers on one of Citrus Australia's eleven committees



Be the first to hear of new data and information that impacts your growing decisions



Access citrus industry communications to keep you in the know-how, both on paper and online

For more information visit [www.citrusaustralia.com.au](http://www.citrusaustralia.com.au) or call (03) 5023 6333



# SILVAN'S AVO JET TALL TREE SPRAYER

Silvan Australia released its new Avo Jet auxiliary spray unit in 2017 designed for targeted spraying in medium to tall trees such as citrus, avocados, mangoes and macadamias and its popularity is continuing to grow.

A key feature is the hydraulically driven fan that delivers a high velocity air stream into the top of the canopy. When combined with Silvan's patented Radak conveyor, the Avo Jet provides complete tree coverage.

The Avo Jet is fitted with four adjustable cannon jet nozzles per side assisted by five air outlets to direct the chemical into the top of the tree which can be difficult to reach and is often the area where pest and disease pressure is at its highest.

*The Silvan Avo Jet auxiliary sprayer compliments the Silvan Radak conveyor to obtain effective spray penetration tall trees such as avocados, mangoes and macadamias.*

*Standing five metres above the ground, the Avo Jet has a hydraulically controlled frame to lower the spray head for road transport and storage.*

When fully extended for spraying, the Avo Jet stands five metres above the ground and is mounted to a hydraulically controlled frame which can be conveniently lowered from the tractor cab for road transport and storage. The Avo Jet can be fitted to any Silvan 4000L orchard sprayer in conjunction with the Radak conveyor.

Silvan Australia's spraying product specialist David Carr says that his company's long experience and leadership in spraying equipment and accessories

confirms that it is important to adapt to the changing needs of farmers.

"We are regularly talking to farmers about the challenges they face in managing pests and disease".

"The development of the Avo Jet was a direct response to listening to the needs of fruit growers for a product that directs chemical into the top of tall trees and compliments the proven Silvan Radak conveyor" Mr Carr says.

For further information: call 1300 SILVAN (1300 745 826), email [info@silvanaust.com.au](mailto:info@silvanaust.com.au) or see [www.silvan.com.au](http://www.silvan.com.au) for technical information



## TARGETED SPRAYING IN MEDIUM-TALL TREES WITH THE RADAK CONVEYOR

**Ideal for tall tree crops and those with dense canopies such as citrus, macadamias, avocados, mangoes, olives and lychees.**

The patented air volute design maximises the use of the airflow generated by the 920mm fan, the Radak ensures thorough coverage of the targeted canopy by directing airflow into the foliage from above using the top wings and underneath via the bottom wings.

### FEATURES:

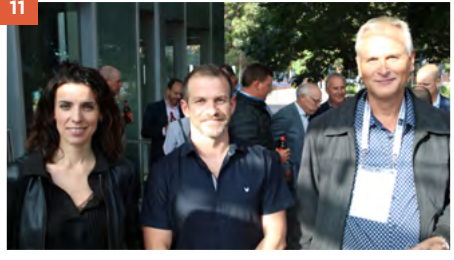
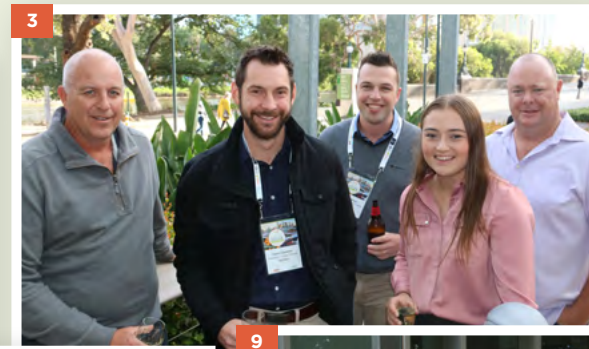
- 920mm fan
- Complete tree coverage



**Silvan**

The Spraying Specialists

CALL 1300 SILVAN (745 826) OR VISIT [silvan.com.au](http://silvan.com.au) FOR MORE INFORMATION OR TO FIND YOUR NEAREST DEALER



1. Matt Strmiska, consultant, E.E. Muir & Sons; Adam Kennedy, Carter and Spencer, Qld; Matthew Spencer, Carter and Spencer, Qld; Allan Jenkin, Ironbark Citrus, Mundubbera, Qld.
2. Phil Croy and Matthew Carter, First Fresh New Zealand.
3. David Lyell, David Gardner, Brad Baker, Julia Payne and Peter Morrish, Southern Cross Farms.
4. Justin Lane, MFC, Craig Wooldridge E.E. Muir & Sons, David Stevenson, Nutrano.

5. Greg Bennett, FMC; Richard Byllaardt, Nutrano; John and Merryl Morris, Leeton, NSW.
6. David Stevenson and Tania Chapman, Nutrano.
7. Bindi Pressler, 2PH Farms, Emerald, Qld; Ebony Faichney, DAF Qld.
8. Mick Lentini, East Coast Beveridges; John Golding, NSW DPI; Jeff Milne, Citrus Australia; Sam Munsie, Dept Agriculture, Water and Environment.
9. Mano Babiolakis, Global Produce Solutions; Perry Hill, MFC; Peter O'Donnell, Southern Cross Farms; Nathan Hancock, Citrus Australia; Bill Robinson, MFC.

10. Ken McDougall, Jemalong Citrus; Greg Chislett, Chislett Farms; Marcus Smart, MFC; Fiona Hoddle, Gunnible Pastoral.
11. Clara Montesinos, Decca; Andrew Robson, University New England; Japie Kruger, Kruger Plant Production.
12. Mick Lentini, East Coast Beverages; Chris Horn, Zummo Juicers; Nick Stagg, Zummo Juicers.
13. Dumi Mhlanga, Hort Innovation; Shane Kay, Moora Citrus, Moora WA; Damien Guthrey, Moora Citrus, WA.



**14.** Steve Falivene, NSW DPI, and Lisa Liang, Killala Creek Citrus, Qld.

**15.** Matt Strmiska, consultant, E.E. Muir & Sons; Nick Weckert, Corteva; Danny Thornton, E.E. Muir & Sons.

**16.** Sue Parr, Gold Grove; Susan Chislett, Chislett Farms; Peter Lang, Te Mata; Bill Robinson, MFC.

**17.** Rohan Ashley, MFC; Jon Watson, MFC.

**18.** Marcus Diaco, Legacy Packing; Ramsay Zreikat, Colin Campbell Chemicals; Mara Milner, Citrus Australia; Roy Stipo, Colin Campbell Chemicals.

**19.** Margaret Rowles, Margram Citrus, Gayndah, Qld and Ainslie Emmerton, Quebec Citrus, Mundubbera, Qld.

**20.** Kellie Nulty, Kylie McGinty and David Daniels, Citrus Australia; Yvonne Diab, Freshcare.

**21.** Nicole Zerveas, Mara Milner and Kerry Thompson, Citrus Australia.

**22.** Adam Kennedy, Carter & Spencer; Ben Reilly, Steritech.

**23.** Ken MacDougal, Jemalong Citrus, with Susan Chislett, Chislett Farms.

**25.** Cris Bryant, Blue Cow Citrus, Gayndah, Qld; Nicole Zerveas, Citrus Australia; Kerry Thompson, Citrus Australia; Thomas Hertel, Growcom.

**24.** Megan and Hamish MacDonald, Redlea Citrus, Coringa, Qld.

**26.** Hamish MacDonald, Redlea Citrus, Coringa, Qld; Troy Emmerton, Quebec Citrus, Mundubbera, Qld; Craig Meyer, 888 Citrus, Mundubbera, Qld; Graham Rowles, Margram Citrus, Gayndah, Qld.

**27.** Dean Trembath, Andrew Mann, Claire Wraight and Marcus Diaco, all Legacy Packing



# Jack Parr made his vision a reality

The late Jack Parr's vision and energy has been integral to the development of the Australian citrus industry – and it was recognised when he was inducted into the Citrus Industry Hall of Fame at the Citrus Australia Market Outlook Forum.

His thirst to improve production techniques and expand potential markets, saw the development of the Australian export industry to Japan, the introduction of technology including wind machines and ethanol gas ripening, and the expansion of integrated pest management.

Jack left his home state of NSW, citing Queensland as the land of opportunity for citrus growing and in the 1930s his search led him to Mundubbera, where he purchased the original Golden Mile Orchard property.

Jack knew reliable water would be integral to any success so the Burnett River was a major attraction.

The Golden Mile was originally a dairy farm and Jack planted his first citrus trees in 1936.

The major flood of 1942 swept his dairy herd and flourishing orchard away. He decided against re-stocking livestock and re-built his orchard. It grew into the largest privately owned orchard in the southern hemisphere at the time.

Jack and his cousin, Percy Wrench (grandfather of Gayndah grower, Kevin Parr, Glen Grove Orchards), would travel to California and Florida every year to investigate new varieties and new technology.

Jack would import new varieties from the University of California budwood scheme and test them on 10 acre trial blocks at Golden Mile. He brought back the Honey Murcott mandarin and pink grapefruit varieties.

He also imported the first wind machines in the country, overhead sprinklers, cardboard boxes, technology for ethanol gas ripening, oscillating spray booms, amongst other technology.

He would travel the US with a self-taught engineer, who would draw up blueprints of technology, which was then built in Australia.



*The late Jack Parr*

In 1963, Jack visited Canada and recognized the scope which existed there for a market for Ellendale mandarins. Golden Mile orchard supplied the Ellendes for the first shipment in 1964 of a few tonnes to Canada, and later Europe.

As far back as 1962, Jack recognized export opportunities in Japan, after a visit to that country. He began working with importers, the Japanese Ministry of Agriculture and the Australian Government.

After 20 years of negotiations with the Japanese Ministry of Agriculture, they lifted the ban on Australian citrus. Unfortunately, the decision was made only days after Jack passed away in 1982.

Jack didn't limit his expansion plans to international markets. He established citrus in Wiluna, Western Australia, east of Meekathara.

Again, he was ahead of his time and had to move on because of logistical barriers that couldn't be fixed. This was in the days when buying a loaf of bread would take a week-long train ride.

His vision wasn't limited to markets. In the 1970s, Jack negotiated with the Queensland Department of Primary Industries to develop entomology control in Queensland citrus.

Jack with the assistance of the late Dan Smith, employed Dan Papacek, interviewing him after finishing university, and setting up a small insectary on the Golden Mile. It was a major turning point to reducing the amount of insecticides used at the time.

They introduced Rhodes grass between tree rows which would be alternate slashed rows, enabling insects to build up in Rhodes grass seed.

The release of the parasitic wasp in 1979 can be hailed as a considerable success. Other IPM programs developed and fine-tuned at the time underpins current work still conducted by Dan Papacek.

Jack's grandson, Wayne Parr, accepted the award on the night. ●





# “The tree pays for everything”

There wouldn't be many involved in the citrus industry that haven't been influenced in some way by Bill Robinson, and not many that haven't heard his catchphrase: “The tree pays for everything”.

This catchphrase and Bill's philosophy have become something of a mantra at MFC, where Bill first gained employment in March 1975 working in accounting and administration for several years before switching across to an agronomy role as Fruit Procurement Officer in 1990; around the time of the opening of the new MFC packing shed.

Following the merger of Mildura Co-op and Sun Garden Packers in 1997, the extra grower base gave Bill the opportunity to show his worth in the position of Grower Services Manager - a role in which he flourished.

In both his jobs as Fruit Procurement and Grower Services Manager, Bill had a significant role in all aspects of the US Program - setting up grower protocols and scheduling harvest to meet vessel volumes.

With a genuine interest in developing strong relationships with citrus growers, Bill certainly made his mark at MFC, with good communication, regular orchard visits and initiating grower meetings - all this for the benefit of growers so they could receive relevant technical support, information on markets as well as general industry news.

Bill pioneered grower study tours from Australia:

- To a number of other citrus growing regions throughout the world to give access to the latest cultural practices; and
- To overseas markets so that growers could view their fruit at the point of sale which gave growers an understanding of customer expectations

These trips were invaluable to growers, not only for the wealth of information gained, but for the many contacts made and the strong alliances and networks formed.

With Bill's vision of helping to bring the Australian Citrus industry forward, he recruited Spanish Citrus consultant John Chavarria, who with Bill's support and guidance has certainly help



*Bill Robinson accepts his award.*

developed the technical aspects of MFC growers.

Bill, together with John Chavarria and Danny Thornton authored the MFC Citrus Protocol, a very comprehensive booklet that was made available to suppliers of citrus to Mildura Fruit Company. This initial publication and subsequent editions have provided a wealth of technical information on all things growing citrus. No doubt, this MFC in-house publications has found its way into the hands of many non MFC growers.

When there was a whole lot of doom and gloom in the industry a decade ago and even industry leaders were stating publicly that there were too many navel trees in the ground, Bill was adamant that the wheel would turn and that we should seek more export opportunities - China then becoming the target for MFC.

Under Bill's guidance, a small number of growers backed MFC in and embarked on the orchard compliance protocols for access to the KCT markets - and what a great success this proved to be with many in the industry following.

Bill made a public statement many years ago that “China will become a mainstream market in time - just like Japan”. Bill's prediction has certainly come true and the industry has been a major beneficiary of the effort he

put toward making the KCT program a success.

Bill has always been willing to give of his time, knowledge and experience. He has been a supporter of industry associations, participating in committees and working groups - often putting forward MFC's name to assist with trials be it on management of pests and diseases or some other beneficial orchard practice.

He has spoken at many industry events in citrus regions throughout the country openly passing on his knowledge and views. He has also recently retired from his role on the Citrus Australia Variety Committee.

Bill has had a huge part to play in the culture and development of MFC, being a senior manager for 23 years. Bill in his position of influence, was always a strong advocate for the grower, much of which rubbed off on other members of the MFC staff and growers have always been a consideration at all levels of MFC decision making.

Bill retired from full time employment at the end of February, 2020 - a truly great servant to the many MFC growers, past & present, and the industry he has been a part of. ●



*Citrus Australia Chair Ben Cant with Hall of Fame inductee, Bill Robinson.*

# Fresh thinking boosts export demand for juice

The installation of an AsepTec linear filler in 2018 has allowed the family-owned Nippy's at Moorook, South Australia, to produce long-life juices that closely mirror fresh juice in both flavour and appearance.

In a game-changing decision, these varieties - orange, cloudy apple, blood orange and pink grapefruit - now have a potential shelf-life of at least a year and can be exported and placed in the chilled section alongside fresh juices.

Now in its 52nd year of manufacturing, Nippy's has been processing long-life juice and flavoured milk since the mid-1980s. With about 300ha of orchard the Knispels currently provide 20-25 per cent of their own juicing requirements.

The machinery in the Nippy's factory was becoming quite old so the company had to consider either buying the next generation of filling machine or maybe deleting the product.

In the end Jeff and the team decided that rather than simply replace like with like they would invest in a major upgrade.

Their research showed that a plastic bottle would be the favoured container for this type of product for the next few years.

They decided if they could find a PET filler that would not only produce a long-life product but also do more than one sized packaging, they could



*Jeff and Tina Knispel.*

explore possibilities other than just the one-litre market.

The Knispels' new equipment fills a sterile pack with a sterile produce within a sterile environment.

The bottle itself also has certain barrier properties, which means that a premium not-from-concentrate juice can have a significantly longer shelf-life while keeping the transparent PET bottle with a single-stage, tamper-evident cap that consumers are accustomed to seeing for fresh juice.

In the case of Nippy's, breaking with tradition by introducing a new container type was the impetus for elevating the product into a higher value category.

Because they were starting something new, Nippy's asked their customers in Japan to treat it as a cool-chain product.

It's cold-pressed from chilled fruit and cold-filled. Nippy's sea-freight it refrigerated and their Japanese customers warehouse it refrigerated. It goes into refrigeration in the retail outlets - the dairy cabinet as opposed to the dry grocery aisles.

Not only does this preserve the fresh flavour and appearance of the product but it also creates a perception with consumers that if it's with the yoghurts, cheeses and milk it must be a fresh product, too.

While Nippy's could confidently assign all four juices a shelf life of at least 12 months it prefers to specify only half of that to encourage repeat sales and ensure the product is consumed before any slight deterioration in quality occurs.

They are selling a one-litre and also a 300-millilitre single serve that's already in 7-Elevens in Japan and sales continue to grow strongly, as their decision to look outside the square has been rewarded. ●



**nesa**  
nu-edge solutions  
australia

*Innovation through Partnership*

**[www.nu-edge.com.au](http://www.nu-edge.com.au)**

**STEFAN BEKKER 0429 924 190 • MORNE LAKER 0457 856 760 • CRAIG DAVISON 0447 684 886**



# Dracula Citrus puts theatre into retail

Melbourne-based Pinnacle Fresh has developed a brand strategy “Dracula Citrus” which gives retailers the opportunity to invest in Retail theatre, has underpinned a successful US export program, and beaten all initial expectations.

This brand enables customers to turn a commoditised category into a fun, interactive and wickedly healthy experience for the consumer, adding value to all stake holders throughout the supply chain.

The brand has been developed over the past four years and is increasing year on year both in sales value and tonnage sold.

The brand is now recognised in a number of markets (Particularly in major retailers) across the world, including Australia, USA, Taiwan, Thailand, Puerto Rico and Canada, and has gained support from major retailers.

In particular, major retailer CostCo has embraced the value of theatre during Halloween. The themed promotions

over Halloween have helped Pinnacle Fresh build its brand in the US.

It has helped the company build a successful export program into the North American market.

The Australian-grown citrus marketed through the Dracula brand in the US includes Dracula Blood Oranges, Dracula Baby Mandarins (easy peelers), and Dracula Pink Cara Cara (navels).

Pinnacle Fresh has developed some eye-catching imagery to help project the brand’s tagline ‘Wickedly Healthy’.

This artwork is proudly displayed on fruit cartons and assorted point of sale materials, giving retailers a distinctive avenue to market fresh produce, particularly over the Halloween period.



*Pinnacle Fresh Managing Director Jordan Bain and Account Manager Daniel Newport with their value Chain Innovators Award.*

Their promotions also drive and encourage healthy eating, particularly with children, as promotions encourage a ‘healthy option’ for Halloween – a time renowned for sugary snacks for trick or treating activities.

Pinnacle Director Jordan Bain says the ability to develop and sell a brand story delivers real value in the US.

“The retail landscape is different to just about anywhere else in the world when it comes to promotions,” Jordan has said.

“If you create the brand, you also create the theatre behind it.”

Dracula citrus is now sold in over 3,000 stores across the US. This reach far exceeds Pinnacle Fresh’s initial expectations when it launched the brand in 2017.

Early hopes involved reaching 100 stores initially and the company said it really is a testament to the power of themed marketing in a market like the US.

Pinnacle Fresh is also using themed marketing to develop consumer awareness of Dracula citrus in the Australian market, with Halloween having become an established part of the Australian calendar. ●



*The ‘Dracula Citrus’ brand gives retailers the opportunity to invest in retail theatre.*



# Advocacy bringing results for on-farm workforce

Citrus Australia continues to engage with its members, state and federal government Ministers and their departments to help ease the difficulty of sourcing skilled and unskilled workers in Australia.

Citrus Australia provided support to AUSVEG in developing a Horticulture Industry Labour Agreement (HILA), which was approved by the Department of Home Affairs, and made available for application from 1 January 2020. The Labour Agreement template was finalised in March and can be accessed at [www.immi.homeaffairs.gov.au](http://www.immi.homeaffairs.gov.au)

In late 2019 there were labour crisis meetings in Mildura with all three levels of government, and relevant stakeholders, to determine what could be done about the seasonal worker shortage. Some positive outcomes can already be seen from this:

- In November 2019, the Federal Government announced the Regional Agricultural Migration Program. This includes:
  - ~ 3 new visas to sponsor migrant workers
  - ~ Accommodation brokers to be deployed to regional areas to assist growers in accessing permits to build on-farm accommodation
  - ~ Concessions for international students, allowing them to stay in Australia for a period after studying, to work in regional areas
  - ~ Priority processing of visa applications for sponsors from regional areas
- Labour expos for growers throughout Victoria and New South Wales, with a variety of exhibitors including federal Departments to answer questions
- A two-year extension of the Seasonal Worker Programme (SWP) Regional Pilot – this is currently in Victoria and New South Wales, and aimed at assisting small to medium sized growers to access the SWP by sharing workers between farms, and having greater flexibility. This continues to grow geographically, and we hope to see it Australia wide. There is a similar pilot currently being managed in Western Australia by Vegetables WA, who are currently

seeking participation from growers.

- Thank you to all those who have completed the Horticulture Award National Survey, capturing impacts on employment practices as a result of changes to the Horticulture Award. Over 300 businesses have provided feedback which will be utilised in the next stage of advocacy with Government. If you would still like to share your feedback, you can do so at <https://bit.ly/2ZkiJxK>

## What else is Citrus Australia doing in the labour advocacy space?

### Regional Advisory Committees (RACs)

Citrus Australia have an RAC in every major citrus growing region in Australia. These committees are made up of grower members and specialist stakeholders, and are our conduit to all growers in the area. You can see which growers are in your RAC by visiting the 'our committees' page at [www.citrusaustralia.com.au](http://www.citrusaustralia.com.au) and email the Chair with issues you would like raised at the next meeting.

### Diploma of Citrus at SuniTAFE

We have been approached by the Sunraysia Institute of TAFE in Mildura who are designing a Diploma of Citrus. We have shared this with our Murray Valley Regional Advisory Committee who are providing feedback on course inclusions.

### Labour Hire Licencing Laws

Labour hire licencing laws have now been implemented in Queensland, Victoria and South Australia. Citrus Australia supports a Federal scheme.

### Industrial Manslaughter Laws

Industrial manslaughter laws come with huge penalties including life in prison and up to \$16 million in fines. Citrus Australia is opposed to these laws which are now in place in Queensland, Northern Territory, and due to commence in Victoria in July with the inclusion of mental illness.

Occupational Health and Safety, and being vigilant with your compliance of these laws will need to be at the forefront of your mind if you are based in one of these states. Citrus Australia will increase our communication to you on these matters.

### National Agricultural Workforce Strategy

Last year, Citrus Australia provided a submission and verbal evidence to the federal inquiry into the agricultural industry growing to \$100billion by 2030, where we suggested there should be focus on young Australians learning about horticulture, and that migrants should be able to study at a vocational level to work in Australia.

In early March, the federal government announced the National Agricultural Workforce Strategy, with the aim to attract, retain and upskill the domestic workforce, and identify where access to a migrant workforce is necessary, with a focus on school education and vocational training.

### Backpicker App

Citrus Australia has met with the co-founder of the Backpicker app, which was designed to provide a safe way to connect growers and backpackers and prevent exploitation. It is based on a two-way rating system designed to assist both growers in finding reliable employees and employees to find ethical employers. The app is now live on the web platform and growers have been asked to use it and send feedback via email, which will help shape the design. Apps will be available to download on Android and Apple soon. It will be opened to backpackers once growers have listed jobs.

.....

If you would like to share any thoughts or concerns on matters regarding labour, please contact **Kerry** on **Kerry.thompson@citrusaustralia.com.au** or on (03) 5023 6333.

# Farm labour guide exclusive to members

Citrus Australia has produced a new document exclusively for its members – ‘Farm Labour: All you need to know’. Citrus Australia members can access it in the members’ section of our website.

The guide includes information in regards to sourcing labour, and how to be compliant in regards to your care, and payment of workers.

Websites such as the FWO and the Australian Tax Office (ATO) can be quite complex, so the guide includes links to the relevant pages of these websites.

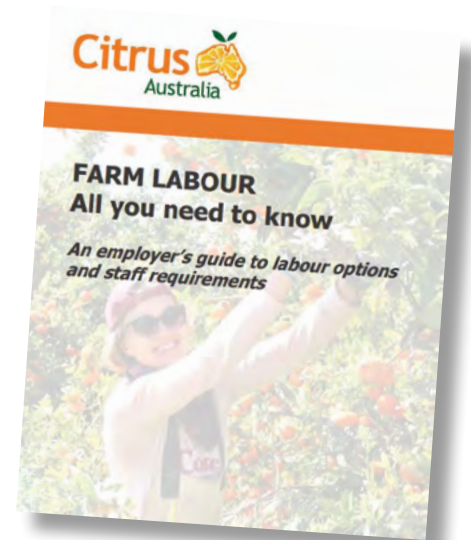
This document has been created based on questions growers have asked Citrus Australia, and information forwarded by government departments and stakeholders.

It is an evolving document and will continue to grow and change based on feedback.

The members’ section of our website also contains a spreadsheet with an easy comparison of visas that are available for growers to sponsor workers from overseas.

Information includes length of the visa, if it leads to permanent residency, and how long it takes to process. It all leads back to the relevant page on the Department of Home Affairs website so businesses can view the most up to date, accurate information.

To become a member (or see whether you are a member) of Citrus Australia, contact **Kerry Thompson** on **Kerry.thompson@citrusaustralia.com.au** or on (03) 5023 6333.



## WE'VE GOT YOU COVERED



### FORTUNA GLOBE

750g/kg Mancozeb

- High loaded Dry-Flowable granule for ease of mixing and minimal dust
- Control of Black spot, Citrus Rust Mite, Brown Citrus Mite and Citrus Bud Mite
- Produced in Europe to EU standards
- 3 year expiry date
- Available in 20kg bags



### HYDROCOP WG

500g/kg Copper Hydroxide

- Control of Black spot, Melanose, Smokey Blotch and Scab (Lemons)
- Dry-Flowable granule for ease of mixing and minimal dust
- Superior weathering and sticking properties
- Available in 10kg bags



**australia**  
**grochem**

grochem.com | for all enquiries 1800 777 068



# Forward vision with an end goal in sight

For Tim Vandenberg and his family, their approach to growing citrus begins at the end.

The end of the supply chain – with the customer and what they want – and, the end of their farming career.

This unique outlook has underpinned the strategy driving growth and innovation at his family's citrus orchard at Gol Gol, NSW.

"I think when you go into something it is just as important to have an exit strategy," Tim said.

"Most people come up with great ideas, they think 'it is great to do this,' but they don't have an exit strategy or a succession plan for what they might want to do. I've thought that process through."

The process has been more than a thought. Tim and wife Melissa (and sons Charlie 13, Harvy 10 and Patrick 7) have a 15-year plan.

The family wants to increase the scale of the business to a point where it's enticing to a large corporate farming organization or investor.

This would also mean the business would be large enough to sustain the employment of the next generation, if they wanted to follow in their parents' footsteps.

Since purchasing a 36 hectare planted property four years ago, the Vandenberg's have expanded to 101ha.

Tim wants to drive future growth, to maximise business performance and ensure the best return on investment for machinery and staff.

"We envisage, from a machinery point of view, that point would be around 300-400 acres (121-162ha) (per tractor and sprayer)," Tim said.

"We envisage, to run citrus to its maximum potential, that there would be one person working to every 100-120 acres (40-48ha)."

The ongoing drought and land development moratoriums in the horticulture industry could put a temporary handbrake on development plans, but Tim believes macroeconomic drivers such as



*Tim Vandenberg on his Gol Gol farm.*

population growth and uncertainty around food chains will bode well for citrus into the future.

This methodical, big-picture approach to business is evident right across the Vandenberg's operation and stems from Tim's career in the corporate sector.

A certified Irrigation Australia agronomist, Tim worked with large-scale agribusiness with experience in roles from agronomy to management.

As the fourth generation involved in horticulture, Tim has a Bachelor of Agricultural Science from the University of Adelaide and a Master of Business Administration (MBA).

The latter qualification was something Tim wanted to compliment his on-farm knowledge and skills before beginning his dream career as a farmer.

He thought the citrus industry was the best way he could capitalize on his education and experience.

*"The reason I went into citrus is it's a lot more challenging than some crops, not as challenging as table grapes, but it has many challenges and you are ultimately rewarded for your effort directly in pack-outs and the quality of the fruit," he said.*

.....

"In my field, and what I learnt at university, I find that very exciting from a day-to-day aspect. It's the challenge and it is always different and ongoing."

This reward for effort and ability to segregate product in the marketplace is central to the Vandenberg's business.

The majority of their fruit is sent to local packing shed Simfresh which controls most of the marketing.

Tim likes to spread his product between the US, Asia and domestic



sales, with 80-90 per cent of fruit destined for premium export markets.

The orchard has been set-up to ensure citrus supply for 10 months of the year. Wine grapes, at about 20 per cent of the business, provide income during the summer.

“From a business aspect it gives us good cashflow so we can remain in business and with high water prices that’s a major issue,” Tim said.

“With a lot of the new plantings we target around early-season to mid-season navels because we currently have some later fruit, late Lanes and even some seedless Valencias. We are also pushing into the Afourer market and hopefully have a few lemons as well.”

“It helps from a management function because they ultimately come in two-to-three weeks apart.

“From a labour supply issue we can continue to keep people employed through that period. As soon as we

pick the tree, the same people will prune the tree, depending on the weather obviously, and that ultimately keeps a crew of people employed for an extended period.”

Running with a “lean staffing structure” Tim and another employee are fulltime, while labour hire is used during busy periods.

Looking ahead, the Vandenberg family will work with his packing shed as part of its sustained fruit supply and has plans to expand into Blood Oranges.

They have implemented the Citrus Australia requirements for exporting product to Korea, China and Thailand (the KCT Program) and will keep a close-eye on what happens with US markets.

“They dictate what happens,” Tim said. “Blood Oranges are a nice bit of fruit that presents well and has nice pigmentation inside. It is what the consumer wants and they are a little different to the Washington.”

Back on-farm, water for irrigation has become the largest business cost due to ongoing drought.

In mid-March, they received 17mm rain. In the five months before that only 3mm had fallen.

“The water challenge is very difficult,” Tim said.

“We prepared ourselves earlier looking at history, looking at what’s happened in other drought periods and we also try to keep up-to-speed with what is happening with the water.

“I’m the secretary of the South West Water Users Group and I try to make sure I’m all over what is happening in the markets and the potential releases and the percentages we will get by state.

“I try to have the best read that I can.”

Two-year-old trees represent about 50 per cent of the farm, so Tim expects big yield growth in the next five years.

The Vandenberg family’s foliar program includes an application every three weeks, year-round, depending on weather.

The type of nutrient applied varies with the stage of growth and time of year, with many kelps included in the SJB AG-NUTRI Product sprays.

Foliar application rates for younger trees include 300-500 litres/ha and the nutrient spray is applied at about 8km/hour with a 1.5 per cent solution.

For older trees, it’s about 2000litres/ha for a 2 per cent nutrient solution depending on the type of season. These are spread at 6-8km/hour. Insecticides are sprayed at a slower speed.

A twin-row interlinked sprayer allows Tim and his employees to cover the farm quickly.

While the Vandenberg family has been able to achieve a lot in four years, there’s more to come.

Tim said this rapid growth and development was possible thanks to the support of his family, especially his wife Melissa.

Looking ahead, Tim said the COVID-19 pandemic could provide short-term pain for the industry with effects throughout the supply chain, but it would provide opportunities into the future because “people ultimately need food”.

“We will adjust accordingly to what we need to do,” he said.

“We have flexibility. The family who owns the farm, runs the farm and makes the decisions, that’s the difference.” ●



# Diversification at heart of expansion plans

When it comes to his fruit, Bevan Young does not want it all in one basket.

In fact, he is so committed to reducing his business's exposure to risk that diversification is at the heart of his expansion plans.

"We are planting more trees, but I'm not just picking any old tree and dropping it in the ground," the Queensland grower said.

"We are looking at what we have already got so we can spread our risk and diversify into other varieties and the export market a bit more."

Bevan and wife Kylee own Sandbar Citrus, a brand which includes three orchards and a packing shed at Gayndah in the North Burnett region.

Sandbar Orchards is 20ha, with 7000 trees including a mix of lemons, red grapefruit, imperial mandarins and low-seeded murcott mandarins.

Greenhaven Orchards is 36ha and 7,500 trees and it includes seedless lemons, Imperials, Avanas and one block of pomelos- the Asian variety which grows to twice the size of a grapefruit. This orchard includes a packing shed for their own and produce from four local farms.

The final orchard, and the one earmarked for expansion, is Rockybar.

With 121ha and 10,000 trees it's "further back" from the Burnett River and has "red-scrub soil"



*Sandbar Citrus started investing in solar about 11 years ago, but in the past two years their solar installations have increased in size and they are reaping the benefits for lower cost electricity.*

## *"It is all about diversification"*

*Bevan said.*

.....

It produces low-seed Murcotts, lemons, limes, red grapefruit, Imperials and Cara Cara navel oranges.

As part of the expansion, Bevan would like to plant more export varieties which produce fruit earlier. Varieties haven't been finalised but he's considering seedless Daisy mandarins and low-seeded murcotts.

"I wouldn't like to be completely reliant on Asia with my supply, even though it has been pretty good for the last four to five years. There's things like (the Coronavirus) that bring you back to earth and show you that you need a bit of diversification within your business."

Bevan sells 90 percent of his crop to the Australian domestic market, split between the two major supermarkets. The remaining 10 percent's sold to China and Thailand.

## Anti-Bee Netting for Seedless Citrus



**Cost-Effective Crop Protection**

Simple, Quick & Easy to Use!

Ph: 0415 663 413 W: [drapenet.com.au](http://drapenet.com.au)

e: [michael@drapenet.com.au](mailto:michael@drapenet.com.au) | [ross@drapenet.com.au](mailto:ross@drapenet.com.au)







*Bevan says the market is “ever-changing” and adapting is the key to success.*

Imperials make-up 80 percent of the Sandbar Citrus domestic market product.

This ratio’s the result of the orchards’ existing plantings. Bevan and Kylee want reduced exposure to the Imperial and domestic market.

Their ideal spread would be 70 percent domestic, split between mandarins, lemons, limes and oranges and 30 per cent export.

Last season’s production showed the dominance of Imperials in the Sandbar Citrus business.

A “high volume” year, the business sold 120,000 9kg units of imperials, 7,500 15kg cartons of Murcotts and about 12,500 15kg units of lemons. The grapefruit harvest yielded 2,500kg.

In early February rain finally arrived at Gayndah and it was just in time. The

Youngs were at risk of running out of irrigation water.

Pumps on the river had been running “24/7” watering trees.

Constant watering would have traditionally increased electricity costs, but staged upgrades to power supplies and pumps helped mitigate expenses.

Bevan and Kylee added their third solar energy system in October 2018 and upgraded their pumping system (from a centrifugal to a submersible pump) at Greenvale Orchard. This investment included a stand-alone 36kilowatt solar system, with the entire upgrade costing \$100,000.

“The benefit is that (a submersible) pump is half the size but I’ve been able to pump the same volume of water,” Bevan said. “We reduced electricity use by changing the pump and putting the solar on, it basically took out 90 percent of my costs for that pump with electricity.”

Bevan had estimated it would pay for itself in seven years. This calculation included the current grid feed-in tariff of 9 cents a kilowatt hour.

The biggest initial saving was in September 2019 compared to the same month in 2018, electricity costs decreased 127 per cent to -\$424.84. While the difference in cost between December 2017 and 2018 was 55 percent with the bill down to \$1408.91.

The Youngs first invested in solar about 11 years ago with a 5kw system on their packing shed.

A second investment, at the cost of \$35,000, was installed on the packing

shed in May 2018 to reduce costs. It was a 36kw system. Before solar, the December 2017 electricity cost was \$6130.05. This reduced to -\$162.01 in December 2018. The cost dropped 79 percent from March 2018 to March 2019. But the Youngs increased production by 6200 bins during 2019. This increase in production increased electricity costs, but the rise wasn’t as steep due to solar.

“The solar we have got on the packing shed doesn’t cover all the power we use in a day, but it will take 50 per cent of it,” Bevan said. “Obviously, the days we are not packing it is connected back into the grid and we are getting a bit of return.”

Labour and freight remain the two largest costs for Sandbar Citrus. The business has continued to invest where it gets the best “bang-for-buck” with cost reduction. An upgrade in the packing shed has been the latest investment including a new blemish machine and pack-print options (for labels). These will cut labour costs, by streamlining processes, but labour remained crucial for planting trees.

Looking ahead, Bevan said the market was “ever-changing” and adapting was the key to success.

“If you need to change things with marketers or markets, you just move with it,” he said.

“I think if you align yourself too much with one chain store or market you are exposing yourself, that’s my theory. That’s what I’m doing, making sure the risk is balanced.” ●

## FJ EARLY NAVEL VARIETY ACCESS



t: 07 4129 4002  
f: 07 4129 4463  
e: info@varietyaccess.com.au



Variety Access Pty Ltd  
4 Kent Street  
Torbanlea 4662 QLD

# Endoprime for healthier roots

Cor Greyling is the farm manager at Vitonga (PTY) LTD in Moree where he looks after 350 hectares of citrus trees, the produce from which goes to the company owned juicing facility Grove Juice at Warwick in Queensland.

When Cor started in the role a couple of years ago, the previous farm manager mentioned in the transition that he had treated a row of newly planted trees with EndoPrime®, a plant and soil enhancement product from Sumitomo Chemical Australia.

Cor freely admits that for the first year or so of the tree growth stage, he was very dubious and felt that the trial had been unsuccessful. Now however, as the trees have reached their second year of growth, he says that the difference between the treated and the untreated trees is quite marked.

As we spoke to Cor, he was driving through the orchard and described the visual differences between the treated and untreated areas of the crop. "The treated trees are definitely bigger," he said, "I would estimate between seven and ten percent bigger than the untreated. Apart from this, there is much less variability in the row with the treated trees showing a much more consistent size. The final thing that I notice is that the treated trees appear to have a greener canopy which I would expect is a result of the mycorrhizae in the Endoprime colonising their root systems leading to improved nutrient availability and utilisation". "We all know the value of a kilogram oranges, but how do you calculate the value of additional growth?"

Cor is so happy with the results from Endoprime that he is planning to treat a production block of adult trees as he believes that a healthier root system will allow better utilisation of fertilisers which should lead to

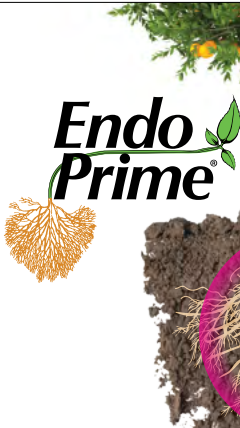


Cor Greyling of Beela, Moree

improved yield. "It doesn't take much of a yield improvement to justify the cost of the Endoprime" he told us.

EndoPrime is a plant and soil enhancement product that contains mycorrhizae. Mycorrhizae are beneficial fungi that naturally exist in soils colonising the root systems of plants. EndoPrime includes 4 high performing endo-mycorrhizae species that have been

proven to increase crop productivity and overall plant and soil health. EndoPrime can assist plants through: Improved nutrient availability and utilisation, improved water use efficiency, improved soil health and is an excellent insurance policy against non-ideal growing conditions.




**Endo Prime**

**Goes where roots can't.**

**ENDOPRIME® IS A HIGH PERFORMING MYCORRHIZAE INOCULANT PROVEN TO IMPACT:**

- Crop yield
- Root and shoot biomass
- N, P, K and trace element uptake
- Water uptake during moisture stress
- Improved soil structure
- Plant performance in variable soil environments
- Soil health
- Australian Organic Certified



**SUMITOMO CHEMICAL**  
AgroSolutions Division

[www.sumitomo-chem.com.au](http://www.sumitomo-chem.com.au)  
© Registered trademark of Sumitomo Chemical Australia Pty Ltd.

# New multi-industry airborne pest surveillance trial

A national multi-agricultural industry surveillance initiative called iMapPESTS is developing novel airborne surveillance and diagnostics technologies to speed up detection and reporting of important pests and diseases within regions.

The iMapPESTS: Sentinel Surveillance for Agriculture program aims to rapidly monitor and report the presence of airborne pests and diseases for multiple agricultural sectors, including viticulture, grains, cotton, sugar, horticulture and forestry.

The five-year program is being led by Hort Innovation, with funding from the Australian Government's Rural R&D for Profit Program, as well as 16 partner organisations.

A key feature of the program is the Sentinel, a mobile surveillance unit, that offers optimal sampling of airborne fungal spores and insects.

The Sentinel is a specialised trailer equipped with several airborne samplers, power supply, a weather sensor, telemetry and an industrial computer to remotely control and monitor the unit, including automated robotics to change pots on the samplers according to the day or capture criteria.

The Sentinel features four different air samplers:

## Key points

- ❖ Airborne samplers detect pests
- ❖ Automated robotics change samples
- ❖ Samples then sent for identification

- two spore samplers, which are high-volume air samplers specifically designed to collect airborne spores
- a two-metre insect suction trap to monitor localised insect dynamics
- a six-metre insect suction trap, ideally suited to monitor for long-distance migratory insect flights, and
- a BioScout system, a near real-time monitoring technology of fungal spores under collaboration.

A prototype Sentinel was recently launched at an agronomic field trial site in Hart, South Australia last September.

Following a six-week trial in the grains industry, the Sentinel is now in the Barossa Valley where it has been put into action near vineyards.

Important targets for viticulture, such as Light Brown Apple Moth and Botrytis grey mould, will be targeted during the Barossa trial phase via the on-board lure traps, and spore traps.

After the Sentinel captures airborne spores and insects, the samples will be dispatched to laboratories at the South Australian Research and Development Institute (SARDI) for identification of target pests and diseases.

iMapPESTS will work with growers and representatives across the sector to understand the best way to communicate and present the dynamic pest information to end users, potentially via tablet or phone, sharing which pests or diseases the Sentinel is detecting in an area at a particular time.

Wine producers and their consultants are encouraged to visit the iMapPESTS website for more information on the initiative, including where and when the sentinels will be in your region and how you can get involved. ●



The first sentinel mobile pest surveillance unit, was unveiled at the Hart Field Day in South Australia on Tuesday 17 September.

iMapPESTS is supported by Hort Innovation, through funding from the Australian Government Department of Agriculture as part of its Rural R&D for Profit Program and AgriFutures Australia, Cotton Research and Development Corporation, Forest & Wood Products Australia, Grains Research & Development Corporation, Nursery & Garden Industry Australia, Sugar Research Australia, and Wine Australia.

**Hort  
Innovation**  
Strategic levy investment



# Citrus canker restrictions lifted in Darwin

Citrus canker restricted areas have been lifted in the Darwin, Palmerston and rural Northern Territory.

Following a minimum six-month host free period without detection of citrus canker across all 12 restricted areas in the greater Darwin area, restricted areas for the control of citrus canker in Darwin, Palmerston and rural areas were lifted on 20 March, 2020.

The (13th) restricted area in the Northern Territory (NT), located in Katherine, was lifted in November 2019.

This milestone was reached through significant efforts by the National Citrus Canker Eradication Program plant health inspectors who undertook delimiting surveillance, host plant removals and regrowth inspections at all premises in the 13 restricted areas over the past 18 months.

Citrus Australia CEO, Nathan Hancock, paid tribute to Government agencies and staff involved in the response, and to growers forced to make difficult adjustments to their operations.

“The logistical challenge of tracking plants from the point of origin and inspecting all properties in restricted areas was enormous and has only been achieved through a significant amount of hard work,” Nathan said.

“We are appreciative of the time



*An example of citrus canker symptoms found during inspections in Darwin.*

taken to eradicate this disease and further monitor for its presence. If left unchallenged, it would have a detrimental effect on our citrus exports, and the significant flow-on effect this provides our regional communities.

“It has proven a difficult and challenging time for our citrus growers in the NT and we thank them for their assistance in eradicating this disease.”

Lifting the restricted areas will allow affected residents and businesses to reintroduce, grow and cultivate citrus canker host plants on their properties

and will also allow for the unrestricted movement of citrus fruit and leaves into and out of these areas.

All affected residents, businesses and growers are now being contacted directly by the Program to advise them of the lifting of restrictions.

For affected green-life retailers, ongoing compliance work will be undertaken to ensure that restocking of citrus plants is achieved from citrus canker free areas in addition to ensuring

*Continued page 37*

## RHM Mandarin VARIETY ACCESS



t: 07 4129 4002  
f: 07 4129 4463  
e: info@varietyaccess.com.au



Variety Access Pty Ltd  
4 Kent Street  
Torbanlea 4662 QLD

*From page 36*

information is available for customers about control area restrictions and to ensure ongoing monitoring of plant sales and movements.

Control areas around the greater Darwin and Katherine regions will remain in place until the NT can prove the disease has been successfully removed through an extensive surveillance program during 2020.

This means that any citrus plants, fruit or leaves cannot be moved outside or between control areas without a permit. Control areas include Darwin, Palmerston, and the Darwin rural area, Bachelor, Adelaide River and Katherine.

The program is continuing to support

the local citrus industry through regular weekly inspections of fruit and leaves to maintain interstate market access. In the last three months, 39,000 kaffir lime leaves (3000/week) and 7,800 pieces of citrus fruit have been inspected (600/week).

There are 10 citrus growers currently trading as registered growers from the NT to interstate markets.

Regular orchard inspections have taken place in accordance with trade protocols to ensure property freedom status from citrus canker is maintained and trade can continue.

Two rounds of orchard inspections have been completed, one in December and one in February. A

minimum of 600 trees per orchard are inspected each time.

Over 8,400 trees have been inspected in the last two inspection rounds. A further round of inspections is scheduled for April 2020.

The program is now focused on gathering evidence to prove that citrus canker is not present in the host plant population and has not spread from infected plants.

This will be achieved through a range of surveillance activities including re-surveillance of remaining trace plants, surveillance of sentinel plants on previously infected premises and a general surveillance of host plants in the broader community. ●

## More biosecurity funding needed to battle wave of illegal imports

Citrus Australia urges the Federal Government to increase its investment in border biosecurity following the interception of fresh limes and dried citrus infected with citrus canker in February.

Citrus Australia CEO Nathan Hancock thanked the biosecurity officers on duty for their vigilance.

“We appreciate the hard work of those at our border and appreciate their efforts to protect our industry and the community’s backyard citrus,” Nathan said.

Citrus canker was most recently detected in Australia in 2018 and is expected to be eradicated by the end of this year at a cost of \$18.7 million.

Although not harmful to humans, citrus canker kills citrus trees. If brought into Australia, it would decimate the Australian industry and lead to the destruction of millions of backyard citrus trees.

Last year, more than 12,000 citrus items (almost 33 items each day) were intercepted at Australia’s international airports. Any one of these items could have posed a serious risk.

With the rapid increase in tourism, Nathan said biosecurity funding needed to be increased accordingly.

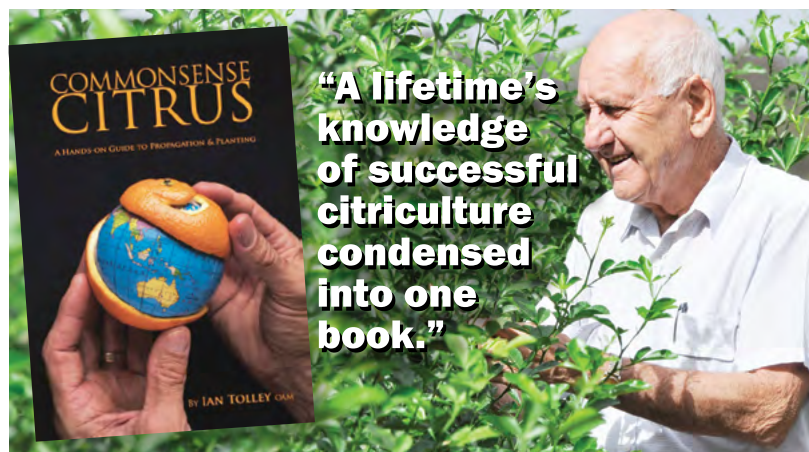
“We commend the professionalism of Australia’s biosecurity officers and detector dogs, and they should be supported with additional resources,” he said.

“Unfortunately, the importance of biosecurity is being ignored by too many travellers and we need to bolster our capabilities to weed them out.”

Nathan said Citrus Australia was pleased with the Government’s recent decisions to cancel visas of those attempting to smuggle illegal products into Australia.

“We hope that this message has been heard by those in other countries considering similar acts.

“Our national agriculture industry, and the billions of dollars it contributes to the economy and jobs it creates in regional and rural areas, cannot be put at risk.” ●



**“A lifetime’s knowledge of successful citriculture condensed into one book.”**

### **COMMONSENSE CITRUS** by Ian Tolley

A hands-on guide to citrus seedling production, propagation, orchard management and much more.

**\$129 + postage**

**FURTHER INFORMATION & ORDERS:**  
<http://commonsenscitrus.com>

# One chapter closes, another opens in citrus postharvest research

Postharvest is the crucial link between the orchard and the consumer.

To consistently and efficiently deliver high quality, safe and nutritious fruit to domestic and export markets there are many significant challenges for postharvest to overcome.

The recently completed Hort Innovation 'Citrus Postharvest Science Program' (CT15010) addressed these major challenges by focussing on two key components; (1) postharvest decay control, (2) managing fruit quality through the supply chain and postharvest treatments to reduce MRLs.

The aim of the research-based program was controlling postharvest decay and maintaining fruit quality through the supply chain where MRLs are not a barrier to market access.

## Managing Postharvest Decay

The results of the Project showed there are significant opportunities for the effective use of new postharvest fungicides and new alternative methods for the control of postharvest decay (green and blue mould).

New fungicide chemistries and new formulations were assessed and showed significant potential for the control postharvest decay (see articles in the post-harvest section at [www.citrusaustralia.com.au](http://www.citrusaustralia.com.au)).

The results also showed there may be opportunities for the postharvest control of anthracnose, which can contribute to significant out-turn problems in wetter growing regions, such as Queensland (see pages 36-37).

The results of two seasons of packinghouse surveys of postharvest fungicide technical resistance showed there could be significant issues with poor postharvest sanitation and the development of technical resistance to common postharvest fungicides.

Extension articles in *Australian Citrus News* (Summer 2017/18, Summer

2018/19) and presentations at the Technical Forum in Adelaide and numerous regional forums / meetings were given to highlight this issue and provide recommendations for effective management.

## Improving Fruit Quality

While decay is the primary cause of postharvest losses, it can be successfully managed with good postharvest practices and fungicides.

However, there are a range of other fruit quality issues which impact the ability to successfully market fruit into both domestic and export markets.

These include; (1) chilling injury, (2) development of off-flavours, (3) and adoption of new technologies to improve fruit quality management during storage.

These issues were addressed with a series of postharvest storage trials. Results showed that reduced chilling injury could be achieved through greater understanding of relevant preharvest factors and the application of postharvest treatments (*Australian Citrus News*, Winter 2019 ).

These insights need more research to assess their efficacies over different growing seasons.

A review of the potential postharvest quality effects of low dose irradiation as a market access treatment for export was also conducted.

It showed low dose irradiation has a place in the market access toolbox, where high value export markets allow this treatment.

## Improving Postharvest Outcomes

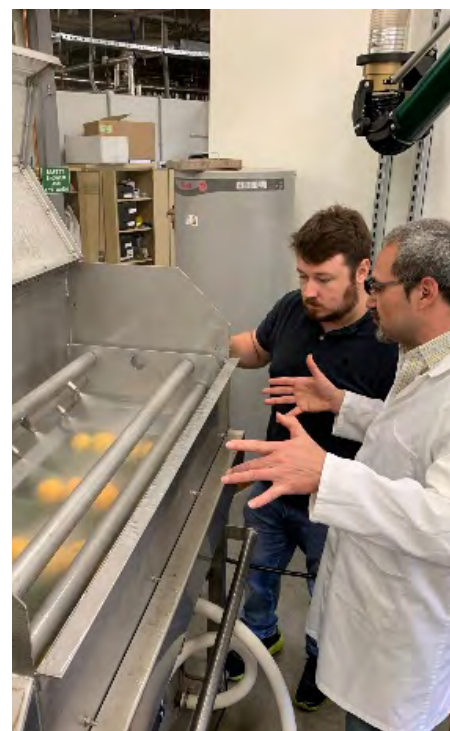
A range of extension materials were developed and extended to industry through regular contributions to industry newsletters (such as *Australian Citrus News*), citrus

postharvest web pages, and with regular presentations and workshops in all major growing regions around Australia.

The 'Packer Newsletter' was continued through this Project is now hosted by Citrus Australia (<https://citrusaustralia.com.au/growers-industry/packer-newsletters>).

The newsletter provides industry with updates of research outcomes from the Program with practical and up-to-date postharvest information for Australian growers and packers.

The 'Packer Newsletter' was written and successfully run by Peter Taverner (SARDI) for many years and is now searchable and contains a wealth of valuable postharvest information.



*On-going international collaboration with Prof Lluís Palou (right) - leading postharvest citrus researcher from IVIA Spain.*

**Where to next for improving citrus fruit quality?**

A new citrus postharvest project is being funded by Hort Innovation to continue meeting the needs of the industry around fruit quality management.

NSW Department of Primary Industries is co-investing in this work and is leading the new Hort Innovation project - 'Citrus Postharvest Program' (CT19003).

This Program will build on the success of the previous project through the development and extension of a new 'Postharvest Best Practice Manual' and increased research focus in to postharvest decay control and fruit quality.



**John Golding** is Research Horticulturalist at NSW DPI.

For more information on the outcomes of the previous project and new project R&D, contact John at [john.golding@dpi.nsw.gov.au](mailto:john.golding@dpi.nsw.gov.au) or on (02) 4348 1926.

This is a contribution from the 'Citrus Postharvest Science Program' (CT15010) and 'Citrus Postharvest Program' (CT19003) and funded by Horticulture Innovation and NSW Department of Primary Industries. Levies from Australian citrus growers are managed by Horticulture Innovation and contributed to funding this project. The Australian Government provides matched funding for all Horticulture Innovation's research and development activities.



*Citrus postharvest research trials on-farm and at NSW Department of Primary Industries trialling new techniques to control postharvest decay and improve quality.*



# “Eureka SL”

Exciting new seedless Eureka lemon variety from South Africa.

\$3.50 (+GST) per tree royalty only for fruit marketed in Australia. No fruit production royalty.

TOTALLY SEEDLESS

Fruit quality characteristics equivalent to standard Eureka lemon.



Trees Available For Sale

ANFIC Member and other sub-licensed Citrus Nurseries

Contact ANFIC on (07) 3491 9905 or Email: [info@anfic.com.au](mailto:info@anfic.com.au)





Eureka SL is protected by Plant Breeder's Rights (PBR). It is illegal to propagate, sell, export, import or stock propagation plant material from this variety under the PBR Act, 1994.

# A refresher on postharvest degreening

Degreening is the process of removing the green colour (chlorophyll) from the skin of citrus fruit after harvest using ethylene gas treatment.

It is used to meet the market demand for fully orange citrus fruit.

While degreening is a common postharvest practice across Australia at different times of the year, there is a need to revise the best handling and treatment tips.

The most critical aspect associated with degreening is ensuring the fruit meet the Australian Citrus Standard (ACS) for eating quality maturity. Immature dark green fruit will not properly degreen and, more importantly, will not meet the ACS as the fruit will have high acidity and low sugar content.

Ethylene degreening does not ripen the fruit and will not change the levels of sugars and acids.

Therefore, when degreening, it is critical to only pick fruit that meet the ACS for harvest maturity based on both eating quality and colour i.e. not just colour.

Degreening success can vary with variety, the initial colour of the fruit, concentration of ethylene used and the duration of ethylene exposure.

Whilst many growers and packers have been degreening their fruit for many years, this is a timely reminder of the best practice tips for degreening:

- Fruit should have some colour development and not be totally green
- Fruit should be colour sorted when picking
- Fruit should be internally mature to meet and exceed the ACS
- Harvest fruit carefully as any rind damage will be increased by the degreening process
- Treat fruit with a postharvest fungicide prior to degreening
- Good air circulation in the degreening room is important to ensure the air moves through the fruit load, not around it
- It is important to have an efficient

ventilation system is critical to extract the carbon dioxide (CO<sub>2</sub>) generated by the fruit during degreening

- Do not wax fruit prior to degreening as this will inhibit full colour development
- Fruit treated with a late gibberellic acid (GA) spray will take longer to degreen or may not fully colour
- Fruit treated with an oil spray shortly before harvest (within 2-4 weeks) may not achieve full colour
- High ethylene concentrations cause the fruit calyx (button) to dry out and turn brown. Fruit can be dipped in the synthetic auxin 2,4-D to help keep buttons green, but 2,4-D can also delay the degreening process

Postharvest storage trials in the previous Hort Innovation Citrus Postharvest Project (2019) highlighted the amount of time in degreening had a significant impact on anthracnose incidence ('gas burn') in Imperial mandarins (Figure 1).

Fruit that had degreened for one day had 23% anthracnose infection, while fruit treated for four days had 52% infection.

Prolonged exposure to the high temperatures and humidity necessary for degreening, drive anthracnose damage ('gas burn') in the skin.



**Figure 1:** Severe anthracnose symptoms on Imperial mandarin fruit following degreening and storage

Therefore, shorter degreening treatment times are recommended. In order to achieve shorter degreening times, it is recommended to harvest fruit at a less green stage.

As part of the same postharvest research study, different postharvest dip treatments were tested to Imperial mandarins from Queensland aimed at minimizing the expression of the anthracnose ('gas burn') (Figure 2).

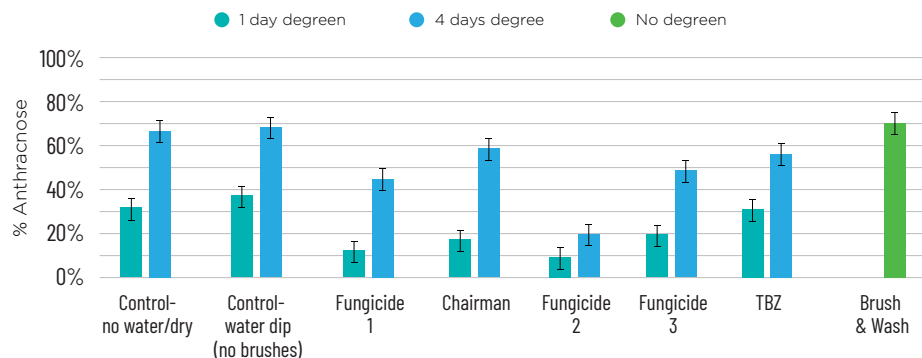
Results showed that some of the standard current postharvest fungicides for control of green and blue mould could also reduce anthracnose damage.



**Figure 2:** Degreening in experimental conditions (left) and assessing anthracnose symptoms on Imperial mandarins at NSW Department of Primary Industries



**Graph:** Percentage of Imperial mandarins with anthracnose symptoms following 4 weeks storage at 20°C. Bars are standard errors around the mean (n=4).



2017) and the Packer Newsletter, which can be accessed in the post-harvest section at [www.citrusaustralia.com.au](http://www.citrusaustralia.com.au)

**John Golding** is Research Horticulturalist and John Archer is Technical Officer with NSW DPI.

This is a contribution from the Citrus Postharvest Program (CT19003) funded by Horticulture Innovation and NSW Department of Primary Industries. Levies from Australian citrus growers are managed by Horticulture Innovation and contributed to funding this project. The Australian Government provides matched funding for all Horticulture Innovation's research and development activities.

For example, the postharvest fungicides 'Chairman™' (fludioxonil and propiconazole) and thiabendazole reduced the number of fruit with anthracnose symptoms (see Graph).

Other postharvest fungicides registered for other horticultural crops, but not citrus, were also trialed.

Some of these fungicides showed good activity against anthracnose and more work will be continuing with these potential alternative treatments.

More information on degreening practices and conditions are available in previous editions of the Australian Citrus News (Autumn and Winter

**Hort Innovation**  
Strategic levy investment

**CITRUS FUND**



**Need a hand finding workers?  
We can help**

1800 062 332  
[www.harvesttrail.gov.au](http://www.harvesttrail.gov.au)





**NetPro**  
GROUP OF COMPANIES

**Reduces water use  
No sunburn  
Export quality packouts**

**The complete service of quoting and engineering to construction and aftercare**

**1300 NETPRO (638 776)**




**EYLES CITRUS**  
A T Eyles & Sons




**A CENTURY OF CITRUS EXCELLENCE**

<b>WE OFFER</b>	<b>OUR TREES</b>
Expertise	Grafted
Consultancy	Consistent sizing
Premium quality trees	Grown to your specifications
Variety Access selections	Sourced AusCitrus material

Kenthurst- New South Wales **02 9654 9227**  
 sales@eylescitrus.com.au **www.eylescitrus.com.au**




**Chislett Nurseries**  
Growing Excellence  
~ Since 1990 ~


**Avocados | Citrus | Pistachios**

- 4.2L container-grown
- Auscitrus seed & budwood
- New rootstock varieties
- Variety Access & Nuleaf licensed propagator
- M7, Chislett, Rohde
- Nursery & orchard visits welcomed


Please contact:  
Jonathan Chislett  
0400 923 411



p: 03 5038 8238 | 03 5038 8220  
 e: jonathan@chislettfarms.com.au  
 762 Kenley Rd, Kenley VIC 3597  
 chislettfarms.com.au




**VCF**  
*Growing your future*



**Victorian Citrus Farms**  
Citrus & Avocado Nursery

- Variety Access licensed grower
- Nuleaf licensed grower
- Utilising Auscitrus seed and budwood material
- Potted citrus and avocado trees
- Nursery visits welcomed by appointment

To arrange a visit or for more information:  
 Sean Arkinstall – M: 0419 391 558  
 Jason Bowes – M: 0408 729 043




393 Woomera Ave Red Cliffs Vic 3496  
 E: victoriancitrusfarms@gmail.com  
 www.victoriancitrusfarms.com.au

**V&R PITTARI**  
**CONTRACTING SERVICES**  
For all your mulching needs

✓ 300hp and 200hp orchard friendly tractors with 2.25mm and 2.00mm pick-up mulchers	✓ 2.25mm forestry mulcher
✓ Sweeper heads set up on the front of our mulchers as one-pass machines	✓ A New Holland 250hp tractor with a Seppe Star soil mulcher to regenerate your orchard
	✓ Will travel anywhere

Contact Victor: 0439 648 660 or Anthony: 0419 449 653

**Murray Valley Nurseries Pty Ltd**



**Wholesale CITRUS growers**  
 Olives, persimmons and mulberries. All trees propagated from approved material. Direct delivery to your farm.

Props: Greg and Shane Fleming  
 PO Box 1, Wood Wood, VIC 3596  
 Fax: 03 5030 5536

**ORDER EARLY TO AVOID DISAPPOINTMENT**

**Phone: 03 5030 5325**



# BOONGALA NURSERIES

*Suppliers of Quality Citrus  
Trees and Grafted Vines*

## WHAT WE OFFER

27 years experience in the nursery industry

Extensive range of varieties

Using only certified propagation material from Auscitrus

**ORDER EARLY TO ENSURE SUPPLY**

**For orders or enquiries:**

Phone Darryl Brander on 0417 396 288 or Email: [sturtsbillabong@bigpond.com](mailto:sturtsbillabong@bigpond.com)



Put the future  
of your Mandarin business  
in great hands.

**UNITEC innovative Mandarin Vision 3 technology  
cares about your Mandarins and your business.**

At UNITEC we are used to taking care of your future, with **cutting-edge, intelligent and automated technologies** able to ensure **concrete Results over time.**

With **Mandarin Vision 3** your **Mandarins** have a higher value. Nothing is left to chance thanks to an **efficient sorting** of the qualities: **external skin defects, shape defects**, in addition to **size and color.**

Because your business needs certainties. And a bright future.

Enter the UNITEC world. The future of your business will be in great hands.



**MANDARIN VISION 3**  
Unitec Technology



**UNITEC**  
We work for your results

