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Citrus News

ISSUE 4 2023



PROFIT DRIVERS

International experts lined up to speak at Australian Citrus Congress 2024



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Avoiding off-flavours



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New research tackles CTV



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THE FULL BOTTLE
A CITRUS AUSTRALIA PODCAST

Conversation about all things citrus, delivered on the last Monday of each month wherever you stream your podcasts.

Front Cover: (L-R) Chris Cockle, Patrick Vizzone, Michelle Leslie, Graeme Sait, Etienne Rabe, Tristan Kitchener and Xuefeng Wang are some of the industry experts lined up to speak at the Australian Citrus Congress 2024.

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Quality is key

Let me start by thanking all of our grower and affiliate members, along with our corporate partners, for their support throughout 2023.

It's fair to say it's been a mixed season. For many, 2023 has been another tough campaign, while some have come through with reasonable results given the circumstances.

Three years of La Nina weather conditions impacting on fruit quality and a world emerging from a global pandemic are factors that will test any industry, and that's an unfortunate fact for our sector.

The cost of living crisis continues unabated in Australia. Given the policy settings being used by the Albanese Government, it looks set to worsen before it improves.

We'll continue to stand up for growers in 2024, particularly with regards to the management of the Pacific Australia Labour Mobility (PALM) scheme. A primary focus will be the removal of the 30 hour per week offer - which requires approved employers to offer each short-term worker at least 30 hours per week, averaged over the worker's placement in Australia. This alone will kill farm profitability and add to the government's cost of living crisis.

In 2023, we have seen an increase in exports compared to recent seasons, which is a sign there's still a market for our fruit despite the economic upheaval the pandemic has caused.

In a snapshot, China has returned to being our biggest export market, followed by Japan. The South Korean and Vietnam markets have experienced significant growth, while mandarin exports have risen significantly.

Despite the increase in exports, it's unfortunate there hasn't been a matching increase in grower returns. The markets are there but the prices in some countries haven't been as strong as we'd like. Overall, the size and quality of fruit has dragged down grower returns.

This comes at a time when growers have paid more for inputs, energy,

transport and labour, continuing a trend of increased production costs. The rest is self-explanatory.

What can I say about the future? The change in dominant weather patterns to El Nino and the Indian Ocean Dipole bodes well for better growing conditions and hopefully a return to better fruit quality in 2023.

Quality has become a difficult conversation for many over the past few seasons; our growing conditions have been extremely challenging and quality in all its forms has been difficult to manage.

Getting quality right across the supply chain has never been so important. Australia is on track to produce 1.2m tonnes of citrus annually from 2028 and our Southern Hemisphere competitors are also preparing for significant production growth. This says to me that we will be facing increasingly congested domestic and export markets.

In 2023, a number of people reported there is simply no viable market for second and third grade fruit. I expect this to be the case for sometime.

So what does this mean for growers? I think there's an increasing trend across the industry to find ways to reduce the amount of lower grade fruit being sent to the packhouse.

The old adage 'your first loss is your best loss' comes to mind. Consider all the costs that are added to the fruit from the time it is harvested - transport to the packhouse, tipping, sorting, packing, marketing and shipping. In a financial environment like we're in, it makes sense to take that first loss and drop that low grade fruit on the ground.

That's not to ignore the sunk costs in the fruit, but if they include pruning to increase light in the canopy and the risk of wind rub, a balanced nutrition program, well scheduled irrigation and

adequate pest control then you'll have less low-grade fruit anyway.

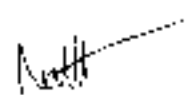
Quality doesn't end here though. The custodian of your fruit must also maintain its quality. Poor postharvest treatment of fruit can severely impact the eating quality and the shelf life, not to mention impact outturns through fungicide use and temperature control.

As someone who visits export markets fairly regularly, there's some cause for concern about our carton quality too. It stands out who has invested in the quality of their carton and who hasn't considered the impacts of hot, humid weather in the arrival destination.

For our industry to maintain its growth trajectory, we must review each step of the process, from variety selection and growing practices through to postharvest and marketing. Exports, which have topped out at just over 300,000 tonnes, will need to grow to be well over 500,000 tonnes. This will not be achievable with the status quo.

I'll end with a shameless plug - the Australian Citrus Congress 2024 will cover all these topics and more. Information about the event is featured in this edition and on our website. Please, invest in yourself, your staff and your business by coming and participating in this event; it will pay for itself in the information you receive and the connections you make.

I look forward to working with you and for you in 2024. ●



NATHAN HANCOCK
Chief Executive Officer
Citrus Australia





ACC 2024: Invest in profitability

Making “profitability for farmers a thing again” is the core objective of the Australian Citrus Congress 2024, according to Citrus Australia CEO Nathan Hancock.

Under the theme of “research, connection and direction”, Hancock said the event would provide Australian citrus growers with fresh impetus and insights to elevate the performance of their businesses.

“A small investment in attending could reap big returns on farm – it could change the size count of your fruit, it could improve the quality of your product, it could save you money in irrigation or labour costs,” Hancock said. “Invest in yourself, your workers and your business as a whole.”

The Congress will be held at the picturesque Novotel Sunshine Coast Resort at Twin Waters, Queensland, from 5-7 March 2024.

Hancock said Citrus Australia intentionally selected a venue removed from the growing regions to host the inaugural Australian Citrus Congress.

“We want to encourage growers, managers and stakeholders to step out of their businesses to work on their businesses, immersing themselves in the opportunity to hear from leaders in their fields and network with their peers,” he explained.

The centrepiece of the 2024 event will be a multi-track conference program and trade

show-style exhibition, taking place on 6-7 March.

Experts from across the global citrus industry will discuss pertinent topics and trends related to production, postharvest, marketing, technology, transport and consumer behaviour. The main conference program will be split into keynote (see pages 8-9) and breakout (see pages 10-11) sessions.

The exhibition will provide industry-aligned businesses with the perfect platform to promote their brands.

“The exhibition will be a great opportunity for industry members to connect with new and existing customers, within a relaxed and social environment. Exhibitor space is still available but selling fast,” Hancock said.

“We also acknowledge our event partners, who help offset the cost of staging the event by taking sponsorships. It means the insights, analysis and networking opportunities can be accessed by a wider cross section of the industry, therefore creating added profitability across the sector. If you’re looking for a

REGISTER NOW

To register as a delegate, book exhibitor space or enquire about partnership opportunities, visit the Australian Citrus Congress 2024 website: <https://bit.ly/3ttiCjW>



Continued page 6



Continued from page 5

valuable way to support the industry, I encourage you to look at the partnership packages still on offer.”

Networking opportunities will extend beyond the exhibition floor. Delegates will receive a warm welcome to the Congress with the Lu’au Lunch Event on the evening of Tuesday 5 March. This casual, tropical-themed function will take place immediately after the 2024 Citrus Australia AGM. Dress code – a hint or a heap of Hawaiian.

The Australian citrus industry’s best and brightest will be celebrated at the

Congress Gala Dinner, being held on the evening of Wednesday 6 March. The dinner will include the presentation of Citrus Australia’s annual awards. The pre-dinner Cocktail Hour will provide delegates with the opportunity to digest the day’s insights and network over a cold drink.

Delegates also have the chance to see innovation in action during a pre-event Study Tour to the Bundaberg region on Monday 4 March, while Citrus Australia’s inaugural Biosecurity Symposium on Tuesday 5 March will educate industry members on the risks posed by exotic citrus pests and diseases (see pages 14-15).

“The event is all about coming together as an industry and charting a new course for a profitable future,” said Hancock.

“If you own or manage a citrus orchard, manage a packhouse, market citrus, process citrus or support the industry as an advisor, researcher or reseller, you’ll come away from the Congress having learnt something new or made a connection that will change the way your business operates.” ●

AUSTRALIAN CITRUS CONGRESS 2024 PROGRAM

MONDAY 4 MARCH

Study Tour

Australian Citrus Congress delegates can see innovation in action as part of a pre-event Study Tour, taking place in the Bundaberg region.

The tour will spotlight citrus-related research and development projects, specifically related to production and postharvest.

Malcom Smith from the Queensland Department of Agriculture and Fisheries (QDAF) and Juliano Ayres from Brazil-based FundeCitrus will provide updates on their respective citrus breeding programs, while Wayne Parr from Variety Access will host a variety showcase at his property near Harvey Bay.

Stops at Spencer Ranch and Abbotsleigh Citrus (Nutralo) will allow delegates to see progress being made under a QDAF-funded Black Spot trial. The Abbotsleigh Citrus leg will also include a packhouse tour.

Delegates taking part in the Study Tour will need to make their own way to Bundaberg.

A bus will transport participants throughout the day and to the Novotel Sunshine Coast Resort at the conclusion of the day. Delegates are also welcome to drive themselves.

Breakfast and lunch will be provided. Sign-up for the Study Tour via the Congress registration page.

STUDY TOUR ITINERARY

- 6:30** Collection – Bus has two pick up points in Bundaberg (TBC)
- 7:00** Breakfast at Bundaberg Research Station, hosted by QDAF
- 7:30** Fieldin tractor demonstration
- 8:00** Citrus breeding updates - Malcolm Smith (QDAF) and Juliano Ayres (Fundecitrus)
- 9:00** Depart Research Station - Drive to Spencer Ranch
- 10:00** Spencer Ranch - Black Spot trial and new varieties (QDAF)
- 11:00** Depart Spencer Ranch - Drive to Abbotsleigh Citrus
- 11:15** Abbotsleigh Citrus (Nutralo) – packhouse tour and Black Spot trial. Lunch provided
- 13:00** Depart Nutralo - Drive to Variety Access (near Harvey Bay)
- 14:00** Variety Access - Variety showcase with Wayne Parr (Variety Access) Environmental auditing using AI (Hitachi)
- 15:00** Depart for Sunshine Coast
- 17:30** Arrive Sunshine Coast

**Itinerary subject to change*

TUESDAY 5 MARCH

Biosecurity Symposium

Citrus Australia’s inaugural Biosecurity Symposium will provide industry members with further knowledge and tools to assess the risks that exotic pests and diseases pose to individual business operations.

VIEW PROGRAM

A more detailed copy of the program, including more confirmed speakers, is available via the event website here



SESSION 1 **HUANGLONGBING DISEASE:**
Understanding the global situation



SPEAKING IN THIS SESSION

ETIENNE RABE
Vice President Agronomy
Wonderful Citrus



BREAK - MORNING TEA

SESSION 1 (Continued) **HUANGLONGBING DISEASE:**
Understanding the global situation



SPEAKING IN THIS SESSION

XUEFENG WANG
Director
Citrus Research Institute at Southwest University
Chinese Academy of Agricultural Sciences



BREAK - LUNCH

SESSION 2 Safeguarding our region against
Huanglongbing disease



SPEAKING IN THIS SESSION

SALLY ANDERSON
Research Manager
Citrus New Zealand



BREAK - AFTERNOON TEA

SESSION 3 Responding to an exotic pest incursion

END OF BIOSECURITY SYMPOSIUM

17:00 **CITRUS AUSTRALIA 2024 AGM**

18:30 **LU'AU LAUNCH EVENT**

WEDNESDAY 6 MARCH

Conference & Exhibition Day 1

The main Congress program runs across 6-7 March, bringing together citrus growers and industry stakeholders for an exhibition and multi-track conference program. A high-powered line-up of domestic and international speakers have already been confirmed. The program listed below is subject to change.

KEY NOTE SESSION 1 **MACRO TRENDS IMPACTING PROFITABILITY**
Looking big picture at the factors that define our production and trade environment.



SPEAKING IN THIS SESSION

CHRIS COCKLE
Vice President of Sales - Imports and Exports
Wonderful Citrus



BREAK - MORNING TEA

KEY NOTE SESSION 2 **RAISE THE BAR TO RAISE THE RETURN**
A detailed look at how the Australian consumer landscape impacts the industry's profitability.



SPEAKING IN THIS SESSION

MICHAEL DOSSOR
General Manager
Result Group



BREAK - LUNCH

BREAKOUT SESSION 1 **POSTHARVEST & SUPPLY CHAIN**
A session covering postharvest advancements that are helping produce high quality and safe food.

BREAKOUT SESSION 2 **PRODUCTION**
A grower-focused session covering production techniques, ag-chem and pest control.



SPEAKING IN THIS SESSION

GRAEME SAIT
Co-founder & CEO
Nutri-Tech Solutions



BREAK - AFTERNOON TEA

BREAKOUT SESSION 1 **POSTHARVEST & SUPPLY CHAIN**
(CONTINUED)
A session covering postharvest advancements that are helping produce high quality and safe food.

BREAKOUT SESSION 2 **PRODUCTION**
(CONTINUED)
A grower-focused session covering production techniques, ag-chem and pest control.

END OF CONFERENCE DAY 1

18:00 - 19:00 **COCKTAIL HOUR**

19:00 - 23:00 **GALA DINNER**

THURSDAY 7 MARCH

Conference & Exhibition Day 2

BREAKOUT SESSION 3 TECHNOLOGY

A deep dive into the advantages and challenges that technology solutions are presenting to the citrus industry



SPEAKING IN THIS SESSION

MATTHEW PRYOR
Co-founder
Tenacious Ventures



BREAKOUT SESSION 4 VARIETY DEVELOPMENT

A look at varietal development within the citrus sector, both in Australia and internationally.



SPEAKING IN THIS SESSION

DAVE MONKS
Research Horticulturist
NSW DPI



BREAK - MORNING TEA

KEYNOTE SESSION 3 AUSTRALIAN CITRUS TRADE - CHALLENGES AND OPPORTUNITIES

A deep dive into the export trade in the face of a new political landscape and post-Covid era.

BREAK - LUNCH

KEYNOTE SESSION 4 REVIEW, RESPOND, RESTORE AND REBOUND

Industry resilience will be determined by our ability to review, respond, restore and rebound.



SPEAKING IN THIS SESSION

JULIANO AYRES
Director
Fundecitrus



END OF CONFERENCE DAY 2

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Keynotes focus on profitable future

A global perspective will kickstart the main conference program at the Australian Citrus Congress 2024, setting the scene for two days of insights and discussions focused on driving industry-wide profitability.

Chris Cockle will discuss the evolution of the global citrus industry

Speaking in the opening keynote session on day one (6 March), US-based Chris Cockle will discuss the evolving nature of the global citrus industry and the outlook for Australian citrus exports.

Cockle is the Vice President of Sales – Imports and Exports at Wonderful Citrus, one of North America's leading grower-packer-exporters of fresh citrus.

"Chris has his finger firmly on the pulse of global citrus trends and trade patterns," said Citrus Australia CEO Nathan Hancock.

"He's perfectly positioned to explain where opportunities lie for Australian citrus, both in terms of market development and varietal selections.

"Chris will set the tone for what promises to be a world class conference program, focused on tangible insights that deliver material benefits to Australian growers."

Cockle's presentation will home in on consumer dynamics in the North American market, including the import trade and opportunities for Australian suppliers.

He will also highlight inflationary impacts on consumer spending and behaviour.

"As a member of the global citrus community, Wonderful Citrus believes it is important to work together in order to better manage the challenges we face as an industry," said Cockle.

"New opportunities exist for Australia in the counter seasonal business, in North America and other export markets.

"To help capture this opportunity, I want to highlight that consumer behaviour is changing and there is plenty of inflationary pressure for both consumers and producers. How we navigate this as a global industry will be important."

The opening keynote session is focused on macro trends impacting profitability across the citrus sector.

Joining Cockle in this session is Patrick

Vizzone. Currently the CFO of Vertical Oceans, Vizzone's career in corporate and investment banking includes senior leadership roles with ANZ, National Australia Bank and Rabobank.



Patrick Vizzone will highlight global economic trends impacting premium produce

He currently sits on the board of the International Fresh Produce Association (IFPA), and previously served on the board of China Agri-Industries, the Hong Kong-listed subsidiary of China's COFCO Group.

Drawing on his deep experience in the agri-food sector, Vizzone will discuss global economic trends impacting premium produce, a pertinent topic given the cost of living crisis, along with rising input and labour costs for Australian growers.

RAISING THE BAR

In keynote session two, experts from across the value chain will outline how the Australian consumer landscape is impacting the industry's profitability.

The changing mindset of Australian consumers will be the focus of a presentation from Belinda Aanensen of independent market research company Fiftyfive5. Aanensen will present

consumption trends and consumer insights, highlighting how they relate to the citrus category, along with opportunities to increase consumption.

Marie Gallagher, General Manager of Buying – Fruit & Vegetables at Woolworths, will provide a retailer's insight into underlying value for the sector.

Michael Dossor, Managing Director of Result Group, will delve into new packaging solutions helping Australian fresh produce companies meet incoming requirements and consumer expectations around sustainability.

Tying these themes together will be Tristan Kitchener of Kitchener Partners. Kitchener, a subject matter expert in grocery retailing and consumer trends, will provide insight into the likely future state and opportunities for growth by retailers and producers.

"Grocery retailing has come under intense pressure from a confluence of forces and pressures across the value chain. The pandemic has driven a wave of innovation and a lasting change in consumer behaviours, which are now being challenged by rising inflation and tightening discretionary spend," said Kitchener.

"It has never been more important to focus upon solving the pain-points of consumers and working with retailers as they strive to create, as well as capture, 'value'. As the retailers lift the bar for consumers, the supply chain must also adapt to meet these emerging needs, and it will be the businesses that move first that will find growth."

BUILDING A RESILIENT FUTURE

Day two of the main conference program (7 March) begins with concurrent breakout sessions (see page 12-13) before delegates reconvene in the main auditorium for keynote sessions



Michael Dossor will share insights on sustainable packaging and labelling solutions

Keynote session three will place the focus on Australian exports, in the face of a new political landscape and the post-Covid era.

Wayne Prowse of Fresh Intelligence Consulting will provide statistical analysis of Australia's export trade over the last 12 months, highlighting growth in markets such as China, Vietnam and South Korea.

This will be followed by a presentation from Citrus Australia's General Manager of Market Development, David Daniels, who will discuss opportunities to grow

sales in both established and emerging markets. With Australia on track to produce over 1.2m tonnes of citrus annually by 2028, export development is an area of priority for the Australian industry.

Exporters will require reliable transport links to international markets to facilitate this trade growth. Leatrice Treharne from the Port of Melbourne will discuss this point as part of a global shipping update.

A keynote session themed around industry resilience will close out the conference program.

This will include presentations from Juliano Ayres of Fundecitrus, Brazil's equivalent to Citrus Australia, and Nate Jameson of Florida-based Brite Leaf Nursery. The pair will provide updates on how the citrus industries in their respective regions continue to operate with the presence of Huanglongbing (HLB) disease. Ayers and Jameson are both speaking at Citrus Australia's Biosecurity Symposium on 5 March (see pages 14-15).

Citrus Australia's Market and Quality Information Officer, Mara Milner, will update delegates on Australian production and planting trends, based on data from the Australian Citrus Tree Census.

The program will round out with a research and development ideation session, which will encourage delegate participation. The conversation will centre on what the next ten years look like for the Australian citrus sector.

"As a whole, the industry has faced some significant challenges over the last few years," said Hancock. "We're starting to see signs of prosperity again but we'd be naive to think more challenges won't come our way."

"Industry resilience will continue to be determined by our ability to review, respond, restore and rebound. This final session will provide a fantastic opportunity to chart a course that not only drives profitability, but helps sustain it over the long-term." •

See p6-9 for a program outline, or visit the Australian Citrus Congress website for a more detailed version of the program, including speaker bios: <https://bit.ly/47UODQI>

**Speaker program subject to change*

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Breakout sessions cater to all delegates

Production, varieties, postharvest and technology; whether you grow, pack or market citrus you're sure to find a topic of interest during the breakout sessions at the Australian Citrus Congress 2024.

Two breakout sessions will run concurrently for periods of each day to maximise the opportunity to deliver relevant content to delegates.

Postharvest and production are the overarching themes for the sessions on day one of the conference program (6 March). Both sessions will be split into two halves, either side of the afternoon tea break.



John Golding of NSW DPI will moderate the postharvest session

POSTHARVEST

Moderated by John Golding of the New South Wales Department of Primary Industries (NSW DPI), the postharvest session will examine advancements that are helping produce high quality and safe food for domestic and international consumers.

"International speakers, local experts and all the latest industry updates, this session will deliver a comprehensive

overview of what's happening in postharvest and fruit quality management," said Golding.

"Speakers will discuss current and new postharvest fungicides, developments in storage and maintaining quality through domestic and export supply chains."

This session will be of most interest to packhouse managers. It is also relevant to marketers, business managers and retailers looking for answers to improving product outturns and increasing citrus shelf life.

"It is one thing for the grower to produce the best quality citrus in the orchard, it's another thing to maintain that quality and deliver a good experience to the end consumer through best practice packing and shipping," said Nathan Hancock, CEO of Citrus Australia.

"As much as we're pushing growers to produce great fruit and reinforce Australia's reputation as a high-quality producer, we have to see that commitment carry through to postharvest, packing and shipping too."

"Our cartons are in the market side-by-side with our competitors, so they have to match up in quality; from the carton to the outturns, to the size colour and taste of the fruit."

PRODUCTION

The grower-focused production session will home in on the correlation between improved quality and increased profitability.

US-based Michelle Leslie of Elemental Enzymes will deliver a presentation on the use of biologicals for citrus crops.



Michelle Leslie of Elemental Enzymes is speaking in the grower-focused production session

As conventional agrichemicals become less available, industry must turn to alternative pest and disease controls. Michelle will take listeners on a journey through the development of biological pest controls, which will reveal the leaps forward this technology has taken.

Syngenta's Technical Services Lead, Shaun Hood, will discuss common mistakes with chemical usage that effect on-farm efficiency, offering tips and tricks to avoid these errors. Application of these tips could save growers thousands of dollars in improved efficiency and reduced agrichemical use.

Citrus Australia is excited to announce that renowned soil health and tree nutrition expert Graeme Sait will also be speaking at the inaugural Australian Citrus Congress. Graeme is the CEO of Nutri-Tech Solutions and host of the Nutrition Farming Podcast. He will share a wealth of knowledge on improving soil health with delegates.



Graeme Sait will discuss ways to improve soil health

Information on on-farm management and technology won't end there, with topics like understanding Albedo breakdown risks, improving irrigation practices and canopy management/ high density planting being covered in this session.

TECHNOLOGY

Day two's (7 March) breakouts turn the audience's attention to technology and variety development.

Matthew Strmiska, Consultancy Lead for E.E. Muir & Sons and Chair of Citrus Australia's Future Production and Technology Committee, will moderate the technology session.

Strmiska will conduct a live interview with Matthew Pryor, co-founder of Tenacious Ventures, Australia's first dedicated agrifood innovation venture capital firm. The interview will cover the intertwined relationship between technology and innovation, along with how and why technology is being adopted by the citrus industry.

Nick Rocca, General Manager of Automation at Fieldin, will also speak during the technology session. Fieldin specialises in delivering innovative farming solutions to the agriculture industry, with Rocca's presentation to spotlight a range of automated equipment, along with the sustainable benefits of innovation within this sector. Fieldin will host an autonomous tractor demonstration during the pre-Congress Study Tour (see page 6-7).

Meanwhile, TOMRA's Clinton Jeffries will highlight how artificial intelligence is driving advancements in citrus grading (see page 33).

VARIETIES

David Monks of NSW DPI will moderate a session on citrus varieties.

Along with presenting insights from his own work leading the Evaluation of New Citrus Varieties project (see page 32), Monks will be joined on stage by global experts in varietal development.

This includes Malcolm Smith of the Queensland Department of Agriculture and Fisheries, who will discuss the development and direction of new varieties in Australia and internationally, drawing on his experience delivering

the levy-funded Australian Citrus Breeding Program.

Other presentations in this session will focus on the correct selection, marketing and management of new citrus varieties.

Citrus Australia's Claire Fitchett, who is coordinating the Congress speaker program, said the breakout sessions were designed to provide delegates with practical take-home messages that will drive innovation and profitability within their businesses.

"We've purposefully focused these sessions on areas of the business that align with our delegates' day-to-day operations" Fitchett said.

"No matter which part of the supply chain you represent, there's plenty of opportunities to come away from the event having learnt something new or made a connection that will change the way your business operates." ●

See p6-9 for a program outline, or visit the Australian Citrus Congress website for a more detailed version of the program, including speaker bios: <https://bit.ly/47UODQI>

**Speaker program subject to change*




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International speakers confirmed for Biosecurity Symposium

Some of the world's leading experts on citrus biosecurity will travel to the Sunshine Coast for Citrus Australia's inaugural Biosecurity Symposium.

Etienne Rabe will share updates on the current state of HLB in California

Held in conjunction with the Australian Citrus Congress on 5 March, the Symposium's speaker program will have a core focus on Huanglongbing (HLB) disease.

International speakers will provide insights on the impact HLB has had on their industries, with delegates to gain a better understanding of how a detection of this disease would be managed in Australia.

US-based Etienne Rabe will share updates on the current state of HLB in North America, primarily in relation to California.

Rabe is the Vice President - Agronomy at Wonderful Citrus, one of North America's leading grower-packer-marketers of fresh citrus.

He will highlight the measures the Californian industry is undertaking to delay HLB from taking a foothold in commercial citrus orchards. This will include an overview of the current costs and organisation of the prevention program in California, along with some of the research and development underpinning this program.

"HLB poses a real risk to fresh fruit industries around the world," said Rabe. "The Australian industry is ahead of the curve relative to the spread of the vector and disease, so the lessons

from North America will be of value in charting your own course forward.

"The message I really want to emphasise is that the Australian industry should take the potential threat seriously and react accordingly."

Rabe will also discuss the differences in the disease's progression in different climates.

"These different climates exist in Australia and should be taken into account when embarking on an industry-sanctioned ACP/HLB prevention program," he added.

Rabe will be joined on the program by Florida-based Nate Jameson of Brite Leaf Nursery.

While Rabe and Jameson live in the same country, the HLB scenario in west coast California is vastly different to east coast Florida.

Jameson will outline the impact the disease has had on his home state, along with how the Florida industry is operating under a citrus canker and HLB paradigm, and the implications for nurseries and growers.

"The exclusion and prevention of citrus

diseases are a key component to maintaining a healthy and profitable citrus industry," Jameson said.

"To the best of our knowledge, Australia does not have HLB. I'm hoping that sharing our experiences with HLB in Florida will benefit the Australian citrus industry."

Other speakers confirmed for the event include Juliano Ayres of Fundecitrus, an association maintained by citrus growers and juice manufacturers from the Brazilian state of São Paulo.

Ayers will discuss how Fundecitrus is working to improve the competitiveness of the Brazilian citrus industry by facilitating research, industry training and the adoption of innovative technology to curb the spread of HLB.

Xuefeng Wang of Southwest University/Chinese Academy of Agricultural Sciences and Siti Subandiyah of Gadjah Mada University will provide updates on the state of HLB in China and Indonesia respectively.

Closer to home, Citrus New Zealand's Research Manager, Sally Anderson, will discuss how the New Zealand industry is preparing for the prospect of an exotic pest incursion.

Tahir Khurshid of the New South Wales Department of Primary Industries (NSW DPI) will shed light on the testing

of HLB-tolerant rootstocks in Australia, while Naomi Wynn of Plant Health Australia will provide an overview of emergency plant pest response arrangements.

The Biosecurity Symposium is just one of the many preparedness activities being undertaken by Citrus Australia and is an important collaboration with NSW DPI. For more information about biosecurity activities under the Citrus Watch program, or to view the Citrus Biosecurity Strategy, visit the Citrus Australia website.

Entry to the Biosecurity Symposium is free for registered Congress delegates, exhibitors, sponsors and speakers. ●

“The exclusion and prevention of citrus diseases are a key component to maintaining a healthy and profitable citrus industry”



Florida-based Nate Jameson of Brite Leaf Nursery

See p6-9 for a program outline, or visit the Australian Citrus Congress website for a more detailed version of the program, including speaker bios: <https://bit.ly/47UODQI>

**Speaker program subject to change*

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CITRUS

Palogix International partners with Citrus Australia



Citrus Australia is pleased to announce a new corporate partnership with Palogix International, a premium provider of returnable and reusable transit packaging solutions for the fresh produce industry.

Palogix's inventory includes large plastic bins, plastic totes and lugs, and a wide range of specialty containers used for harvesting or moving liquids.

Citrus Australia CEO Nathan Hancock said Citrus Australia members would benefit greatly from the partnership.

"Palogix is a global business with a strong track record of thinking outside of the box to meet its clients' needs," Hancock explained.

"It has recently entered the Australian market and has invested in its inventory to ensure it can supply all forms of bulk containers used to bring fresh produce from the field to packing or processing facilities.

"By partnering with Citrus Australia, Palogix has underlined a commitment to growing its business in this market and adding value to our industry."

Founded in South Africa in 2004, Palogix is now headquartered in California's Central Valley. It has operations in the US, Spain, Chile, Mexico and Asia. The company set up an Australian business in early 2023. It currently has operations in Mildura, Cobram and Griffith, with more to come, according to Shaune Amber, Palogix's National Sales Manager - Australia.

Given the locations of its current operations, it's no surprise that the citrus sector was a lure for Palogix to enter the Australian market.

"Based on our understanding of overseas markets and speaking with growers on where the citrus industry is heading in Australia, it only made sense to set up operations here," Amber explained.

"Palogix has the backing and the appetite to work with businesses of all sizes within the Australian citrus industry."

Palogix has a range of products for the citrus sector

Amber said the company had a range of products in its inventory to meet the industry's requirements.

"We already have a large fleet of citrus bins here in Australia," Amber said. "We have recently invested in half bins for Sumo Citrus, as we have seen a need for these with our growers.

"We offer Intermediate Bulk Containers (IBCs) for bulk transportation, foldable bins, even stackable bins if required.

"As we grow in the market and we learn more about local requirements, we are willing to invest in upscaling our fleet to meet the needs of growers."

Palogix also has a unique program where it "buys bins" with rental return agreements.

"This allows our growers to release capital back into their business, with a guaranteed rental supply agreement," explained Amber.

"This program has been met with enthusiasm as we are seeing a lot of growers with capital tied up in bins, where they could be developing other parts of their business. It's not for everyone, but it's an option we offer to further assist in working with our growers."

A desire to understand and cater to its customers' specific needs is at the core of Palogix's business model, according to Amber. This is one of the major benefits the company sees in partnering with Citrus Australia.

"The more we can be involved in the industry, the more we can understand it, which then allows us to develop better supply initiatives and deliver added value to growers and packers," Amber said.

"Globally, we have an ethos of being flexible, customer focused and commercially competitive. These qualities will underpin our expansion into the Australian market, with the citrus industry a core part of this push." ●



Jacqui Mitchell joins Citrus Australia

Citrus Australia has appointed Jacqui Mitchell as its new Citrus Urban Biosecurity Coordinator.



Jacqui Mitchell will focus on engaging with urban communities in high-density areas

Mitchell will work alongside Citrus Australia's Biosecurity Manager, Jessica Lye, to promote the importance of a robust biosecurity system and improve industry preparedness in the event of an incursion.

Her key responsibility will be engaging with urban communities in high-density areas to encourage the monitoring of pests and diseases such as Huanglongbing (HLB) and Asian Citrus Psyllid (ACP) through CitrusWatch's Early Detector Network.

"The CitrusWatch program aims to ensure that the Australian citrus industry is better equipped to minimise the entry and spread of high-priority pests through surveillance, research, training and education," Mitchell said.

"Through the Early Detector Network we distribute trapping kits to urban communities to help monitor pests and diseases in high traffic areas, which are likely to be the pathway of entry for these threats."

Mitchell brings a wealth of knowledge to the role. She holds a Bachelor of Science, a Cert IV in Training and Assessment and a Cert III in Horticulture, along with qualifications in Retail Nursery, Rural Operations and Conservation and Ecosystem Management.

She spent the last two years as a TAFE lecturer at Charles Darwin University in the Northern Territory.

"A career highlight would be the several weeks I spent in Kakadu over the wet season, doing horticulture and conservation training with some of the local people," Mitchell said.

"We had a grand adventure collecting and propagating local species, learning how to care for them."

Mitchell has relocated from Darwin to Mildura with her cheeky blue heeler named Poppy, trading crocodiles, waterfalls and termite mounds for desert plains, the Murray-Darling and citrus orchards.

"I love to garden and I love sharing knowledge, so community engagement for something as important as biosecurity brings together many things that I am passionate about," Mitchell said.

"The key to a great garden is a healthy garden and if we have healthy gardens through good biosecurity practices we can keep our growers and citrus industry safe."

A self-confessed "foodie and a craft hoarder", Mitchell is happy to have settled in the Murray Valley region and looks forward to learning more about how the Australian citrus industry operates.

"When you live in a regional area, you get to see and experience things you don't hear about on tourism ads or Instagram," she said.

"I drove from Darwin to get here and found a lot of cool things along the way that I wouldn't know about if I had flown down.

"I'm really looking forward to exploring the tri-state area." ●



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Taking insights to the regions

Citrus Australia's 2023 Regional Forums brought updates and insights to industry members across the Murray Valley, Riverland, Riverina and Southern Queensland.

Held in late October, a healthy contingent of growers, packers and industry service providers attended forums in Mildura, Loxton, Griffith and Mundubbera.

Each forum provided updates on levy-funded research and development projects that protect industry from incursions, improve fruit outturns in market, give deeper understanding of market pressures and uncover new information on the health benefits of citrus.

Andrew Beattie of Western Sydney University discussed the biology of Huanglongbing (HLB), highlighting the need for preparedness and a willingness to work together among industry should the disease and its vector reach Australian shores.

Fruit quality outturns and postharvest practices were the focus of a presentation from John Golding of the New South Wales Department of Primary Industries, while Wayne Prowse of Fresh Intelligence Consulting delivered a statistical overview of global citrus trade patterns, focusing on Southern Hemisphere competitors.

A dedicated juice program was held in conjunction with the Riverina forum in Griffith, with Hunt & Hunt Lawyers' Andrew Rule delivering a presentation themed around 'navigating supply contracts', while Dr Emma Beckett of FOODiQ Global discussed the collation of scientific evidence supporting the inclusion of citrus fruit and 100 per cent juice in the Australian diet. Prowse detailed various impacts on the global



juice sector, which are driving an increase in prices received for juicing fruit. This is the result of a severe global shortage of concentrate orange juice.

As well as providing valuable insights to levy payers, the Regional Forums presented Citrus Australia staff with the opportunity to engage with members, growers and stakeholders, hearing about the issues shaping the sector's performance. This information is used to advocate on behalf of industry, particularly in discussions with federal, state and local governments.

Citrus Australia CEO Nathan Hancock emphasised this point with an update to members on water buybacks in the Murray-Darling Basin, changes to the Pacific Australia Labour Mobility Scheme deed and guidelines, and Citrus Australia's opposition to the introduction of the Biosecurity Protection Levy. Hancock highlighted the advocacy work Citrus Australia is doing on behalf of industry in these matters, and encouraged members to have their say on how these issues would shape the industry moving forward. ●





“I think there’s a lot of positives in terms of 2024. I hope that I’m not mistaken but I think there’s a realistic outlook that things are going to continue to improve.”

Export volumes on the rise

In Episode 19 of The Full Bottle podcast, released in late November, host Gabby Torpey chatted with Citrus Australia CEO Nathan Hancock about the 2023 citrus season.

While there were some significant challenges for the industry in 2023, Hancock summarised the season positively in terms of the volume of fruit shipped to international markets.

“From a raw numbers point of view, year-to-date figures are showing that we are ahead of where we’ve been at this time in the last two seasons, which is really positive and I think we’ll finish strongly this year with good export results.” Hancock said.

“It’s nice to see an uptick after a couple of years of downticks.”

While the growth in export volume reflects increased consumer demand in key markets, Hancock said many international economies were still in post-pandemic recovery mode.

“Some markets are returning more quickly than others to what they were before, and I think we can say that there’s a bit of a light at the end of the tunnel if our export volumes are increasing,” he explained.

In 2023, China regained its position as the biggest importer of Australian citrus – by volume and value – while Japan has held firm as a leading market.

“Japan was clearly our biggest market over the last couple of years, so it’s good to see that the China market is starting to reboot,” Hancock explained.

Hancock said South Korea continued to emerge as a strong market for Australian citrus, as did Vietnam, with export volumes to both Asian nations growing in 2023.

He also predicted the US to be a top ten market for Australian citrus in 2023.

“I think there’s a trend [in the US] to wanting Australian produce again and the quality that we grow really suits that market,” he explained.

As for 2024, the outlook for the Australian citrus industry appears more positive than previous years.

“The seasonal conditions are looking relatively good, and we will see some larger fruit this year, which will really meet our export countries’ needs,” Hancock said.

“I think the horizon for improvement across economies that we rely on, in Asia in particular, and other parts of the world that we export to, there’s positive signs there.

“That means there should be more money for our product and I think that means we’ll see better returns to growers too.”

The market development team at Citrus Australia continues to work on short- and long-term improvements for the industry on many fronts, from freight issues to diversifying markets.

“There’s a lot of work that can be done in terms of markets we have access to, and we’re lucky in the citrus industry that we have access to over 50 countries,” Hancock said.

“I think there’s a lot of positives in terms of 2024. I hope that I’m not mistaken but I think there’s a realistic outlook that things are going to continue to improve.” ●

This is an excerpt from The Full Bottle podcast, Episode 19: The 2023 Season with Nathan Hancock. Listen now on all your favourite podcast streaming platforms.



STRATEGIC *Plan* 2023-2027



OUR *Vision*

Citrus Australia will lead the Australian citrus industry on a continuous trajectory of sustainable and profitable growth.

OUR *Purpose*

To service, champion, and lead a dynamic, resilient and progressive Australian citrus industry through research, development and advocacy.

OUR *Board*

To ensure our focus is on improving results for all growers around Australia, Citrus Australia's Board is skills based. The Board comprises a diverse mix of grower members and independent directors, each chosen for their skill set.

OUR *Values*

1.

TAKING THE LEAD

2.

HAVING VISION

3.

BEING COURAGEOUS

4.

ACTING ETHICALLY

5.

SHOWING INTEGRITY

6.

ALWAYS PROFESSIONAL

STRATEGIC *Pillars*

PEOPLE & CULTURE

We are committed to the continuous development of our organisation's culture, investing time and resources into the development and training of our staff, along with leading the industry's education and growth. We will sustainably grow the company in line with our vision of being an employer of choice.

PROTECT & PREPARE INDUSTRY

Our Citrus Industry Biosecurity Strategy is embedded and enacted. We will continue to map the national production base. This will improve traceability, along with our ability to deliver effective emergency response operations. We have adopted a sustainability focus for our pest and disease management.

GOVERNMENT POLICY & ADVOCACY

We will advocate and represent the industry on key issues, holding all levels of government to account. We will build and maintain strong networks with stakeholders across the sector and lead the industry in good governance.

LEVY INVESTMENT CONSULTATION

We will consult with and on behalf of industry on issues impacting production and marketing. We will set the direction of research and development investment in the citrus industry and utilise national and international networks to optimise levy investment.

OPTIMISING MARKETS

We will continuously work to improve market access conditions for Australian citrus growers and exporters, and support export growth in key markets. We will engage and inform the retail sector and champion 100% fresh Australian juice.

COMMUNICATION & ENGAGEMENT

We will continue to keep industry informed and engaged through multiple communication platforms, both established and emerging. We will deliver high quality regional and national forums and extend knowledge on citrus research and development projects.



KEY STRATEGIC *Objectives*

PEOPLE AND CULTURE

- Continuously develop the company's culture, through appropriate policies, training and support, acting ethically and responsibly, fulfilling statutory and legal requirements and managing risks
- Provide management and staff personal and professional development through training and upskilling
- Support staff to perform their role by maintaining a company structure that is fit for purpose and adequately resourced
- Citrus Australia's Board and staff have the appropriate skills and experience to address complicated issues in a professional and flexible manner, act ethically and responsibly, add value and make timely and balanced decisions
- Citrus Australia is an employer of choice, with minimal staff turnover, strategically recruiting to develop a regional footprint, upskilling staff to ensure succession
- Citrus Australia develops and implements a strategy to increase students and workers seeking skilled and semi-skilled roles in industry

GOVERNMENT POLICY AND ADVOCACY

- Ongoing consultation with members on government policy that impacts business profitability and sustainability
- Develop and maintain industry positions on key policy areas
- Advocate, lobby and represent industry at ministerial and department level across all jurisdictions and forums
- Develop and maintain strategic alliances with other groups or entities to strengthen advocacy positions
- Develop deeper ties with the industry in all growing regions and increase connection to current and emerging production areas
- Advocate for fairer health guidelines that consider the nutritional value of citrus fruit and 100% citrus juice

KEY STRATEGIC *Objectives*

OPTIMISING MARKETS

- Lead industry in activities that increase penetration in existing and emerging markets to support exports from increased production volumes
- Work strategically with partners and stakeholders, including state and federal governments, Hort Innovation and the retail sector to raise awareness of citrus health benefits and increase citrus consumption in Australia
- Advocate for and promote the health benefits of 100% Australian citrus juice to increase consumption
- Lead industry with expertise in technical market access, negotiate on behalf of industry with the Australian Government and work with our networks of overseas contacts to address issues as they arise to minimize interruptions to supply
- Be a trusted supplier of market information, including competitor analysis, juice market information, production statistics and forecasting
- Champion the industry's sustainability credentials and support industry to adapt and evolve to the changing social and political climate in which it operates

PROTECT AND PREPARE INDUSTRY

- Oversee, champion and drive the implementation of the Citrus Industry Biosecurity Strategy
- Review the Plant Health Australia levy revenue stream and invest in biosecurity objectives that protect and prepare industry
- Upskill industry to be prepared for, and respond to, major disruptions to markets such as consumer health risks and biosecurity incidents
- Represent industry's best interests by engaging with government on current and emerging industry risks, such as climate change, access to agrichemicals and biosecurity
- Identify and communicate with industry on current and emerging risks
- Lead industry in traceability activities, response to food-borne illness, chemical residue issues, biosecurity incidents and other crisis management
- Advocate to ensure that industry has access to appropriate agrichemical controls for in-field pest and disease management and post-harvest treatments

KEY STRATEGIC *Objectives*

LEVY INVESTMENT CONSULTATION

- Strengthen and maintain consultative committees to ensure growers' and stakeholders' issues are heard and acted on
- Collate, prioritise and communicate industry objectives for research and development, and marketing investment
- Develop and maintain research networks to leverage investment opportunities to achieve industry outcomes
- Guide and advocate for appropriate investment of citrus levies in research and development, and marketing

COMMUNICATION AND ENGAGEMENT

- Be leaders in communication and engagement with industry
- Extend and disseminate research and development findings, outcomes and information
- Create networking opportunities for stakeholders at national and regional forums and events
- Lead communication with industry through multiple platforms to reach industry and stakeholders in known and novel means
- Develop and implement a strategy to increase adoption of research and development
- Champion Australian fresh citrus fruits and the Australian fresh citrus juice category to increase consumption

Citrus
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A pioneering sachet technology is reshaping fruit preservation, giving consumers longer-lasting high-quality fruit.

ChillSafe combats spoilage, helping ensure a larger volume of premium citrus reaches the market in prime condition.

Made in Australia by refrigeration sanitation specialist Coolsan and distributed by E.E. Muir & Sons, ChillSafe has been developed with a view to enhancing grower profitability and promoting sustainable practices.

“Reducing waste in the supply chain and optimising returns to growers is essential for the long-term sustainability of the Australian citrus industry,” said E.E. Muir & Sons’ Aaron Milner.

“The reliable, eco-friendly ChillSafe sachet is a strategic choice for superior citrus storage and transport.”

ChillSafe has become a corporate partner of Citrus Australia. Nathan Hancock, CEO of Citrus Australia, said the partnership was a natural fit.

“This collaboration helps Citrus Australia achieve its goals of protecting and enhancing the industry’s premium offer to consumers,” Hancock said.

Milner said Citrus Australia members would benefit from access to a leading-edge solution that addressed challenges like rot and quality degradation.

“ChillSafe improves the profitability and sustainability of citrus operations by maintaining fruit quality over extended transport and storage,” Milner explained.

“Citrus Australia’s expertise and influence in the sector – driving advocacy, innovation, and sustainability – is well documented and we look forward to working with them to help grow the industry’s profitability.”

Milner said ChillSafe was an easy-to-use, cost-effective solution that promoted sustainable outcomes.

“ChillSafe’s deployment in cool storage and transport vehicles requires minimal

effort, ensuring seamless integration into existing operations,” Milner explained.

“Furthermore, contributing to reducing the food waste of citrus aligns with global environmental goals, making it a responsible choice for those looking to impact our world positively.

“In embracing ChillSafe, the citrus industry takes a significant step towards a harmonious future where quality, sustainability, and profitability coexist.” ●

NEW CITRUS SIAP MEMBERS ANNOUNCED

Six new members have been appointed to the Citrus Strategic Investment Advisory Panel (SIAP), while four existing members have been reappointed.

The new-look Citrus SIAP convened for the first time in November.

The panel will provide strategic investment advice to Hort Innovation in relation to industry research, development, extension and marketing programs.

NEW MEMBERS:

- David Daniels *Citrus Australia*
- Jessica Lye *Citrus Australia*
- Alison Anderson *NSW DPI*
- Ben Dring *Costa Group*
- Marcus Scott *Mildura Fruit Company*
- Vito Mancini *Red Belly Citrus*

REAPPOINTED MEMBERS:

- Nathan Hancock *Citrus Australia*
- Shane Kay *Moora Citrus*
- Wayne Parr *Golden Grove Nursery*
- Allen Jenkin *Ironbark Citrus*

The Citrus SIAP is funded by the citrus industry research and development levy (with matching dollars from the Australian Government), and marketing levies.



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Waxing maintains fruit quality and appearance but using the right wax is important to prevent the development of off-flavours

Avoiding off-flavours

By John Golding

Great tasting fruit is essential to satisfy customers and achieve repeat sales. In this regard, the hard work doesn't stop once the fruit is picked in the orchard; careful postharvest management is also required.

Citrus fruit flavour is a combination of taste, aroma, and mouthfeel. Sugars and acids are the most important attributes of fruit flavour, and the industry has good measures of these attributes with the Australian Citrus Quality Standards.

Fruit sugars are measured with a refractometer and are recorded as Brix (percentage), or Total Soluble Solids (TSS, percentage), while fruit acids are measured by titration and recorded as acid (percentage).

The balance between sugars and acids is critical for consumer acceptance of citrus. If the sugar levels are low and acid levels are high, the fruit will taste acidic or sour.

If the sugar and acid levels are low, the fruit will taste 'flat' or bland.

The sugar-acid balance is the basis of the Australian Citrus Quality Standards, which ensure good eating quality. This system works very well and consistently delivers high quality fruit to consumers.

However, if fruit is stored too long then other issues can affect fruit taste.

Off-tasting fruit is the result of excessive storage or poorly stored fruit. It is generally thought that these 'off-flavours' develop due to anaerobic stress – stress caused by insufficient

air (oxygen) within the fruit to maintain normal function.

This lack of oxygen causes fermentation and results in the accumulation of ethanol in the fruit.

This has been shown to occur in many different citrus types, particularly in mandarin varieties.

However, recent research has shown that the development of off-flavours is also a result of general changes in the composition of fruit volatiles (aroma) during storage, resulting in atypical or spoiled flavour aromas.

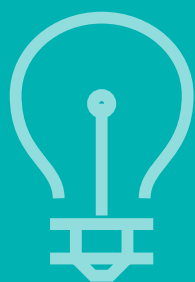
The mechanisms or compounds associated with these over-stored, aroma-derived off-flavours are still being researched. However, there are many ways to minimise the development of these off-flavours.

The development of fruit off-flavours is affected by the following postharvest factors.

STORAGE TIMES

In general, excessively long storage times are the primary factor in the development of off-flavours. Therefore, it's important to minimise storage and shelf-life times.

Citrus fruit is regularly stored over long transit times for exports, but excessive storage times



combined with poor storage practices can contribute to the development of off-flavours. Therefore, fruit storage times pre and post the export transit should be kept to a minimum.

STORAGE TEMPERATURES

Fruit stored at higher temperatures has a higher fruit respiration rate. Therefore, it has a higher chance of developing off-flavours.

However, if you store fruit at temperatures too low, chilling injury can be induced. Chilling injury is a storage disorder that results in the pitting of the peel.

To balance long storage life and minimise the risk of chilling injury, the optimal storage temperature range is between 4-8°C.

WAX APPLICATION

Different waxes have different permeabilities to oxygen and carbon dioxide, leading to variable outcomes for fruit eating quality under various storage conditions.

Carnauba-based waxes (and blends) are recommended to minimise the likelihood of fruit experiencing anaerobic stress, which is caused by a

lack of oxygen or high levels of carbon dioxide inside of the fruit.

While carnauba waxes allow greater gas exchange in the fruit, compared to many other coatings, potential remains for the development of off-flavours in the fruit due to anaerobic stress. Using the right type of wax at the right rate is critical for successful storage.

VENTILATION RATE

Low ventilation rates (especially in shipping containers during export) are another potential source of postharvest anaerobic stress and off-flavour development.

Low ventilation rates can cause a build-up of carbon dioxide above a critical level. To overcome this issue, it is important to ventilate and remove sufficient 'stale' air and replace it with 'fresh' air.

The current recommendations for air exchange and ventilation rates for shipping are varied. Recommended rates by shipping companies range from 4-25 cubic meters air exchange per hour for different citrus types.

In summary, off-flavours can result in terrible eating experiences for consumers and should be avoided.

Good management of the fruit after harvest, with short storage times and optimal handling, can prevent the development of off-flavours.

View the Australian Citrus Quality Standards <https://bit.ly/3TbJwHr>

John Golding is a Research Horticulturist with the New South Wales Department of Primary Industries.

This article is from the Citrus Postharvest Program (CT19003). This project has been funded by Hort Innovation, using the citrus research and development levy and contributions from the Australian Government.



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Variety evaluation project extended

By Dave Monks

On the back of sustained industry support, the levy-funded Evaluation of New Citrus Varieties project (CT22000) has been renewed for another five years.

For over a quarter of a century, the project has provided independent evaluations of new citrus varieties for industry to make informed business decisions. More than 1,000 citrus growers have engaged with the project over the last five years.

The latest re-contracting has seen the formal inclusion of the Western Australia Department of Primary Industries as a project partner, alongside the New South Wales Department of Primary Industries (NSW DPI).

The West Australian department has been a strong supporter of the project for many years, with growers in the state receiving ongoing exposure to new varieties through Kevin Lacey's demonstration sites, generously hosted on properties in Harvey, Moora and West Gingin.

The project team evaluates new varieties imported from international breeding and selection programs, along with varieties bred here in Australia or found as chance seedlings through natural, or induced, mutations.

Most international varieties are represented in Australia by third-party variety managers, who look after the rights of the owner for evaluation or commercialisation purposes. A few new varieties are still available without commercial rights



Some of the new varieties on display at the 75th anniversary of the Dareton Primary Industries Institute Open Day in June 2023

(royalties and per-tree fees) but that number has dropped dramatically over the last 15 years, as successful new private varieties have become 'big business'.

Six new varieties were received by the project team based at the NSW DPI's research station in Dareton, Sunraysia, over the 2022/23 season. These varieties were grafted to a range of new rootstocks in a hothouse. These varieties are the Bingo, HBI12, CB Murcott, Premier and 15C001 mandarins, along with the Rusty orange.

In the same period, ten varieties were grafted, or re-grafted, to a range of rootstocks with a Valencia orange interstock in the field. Of those, one lemon and five mandarins were grafted for the first time. They are the BA0001 lemon, and the HBI01, HBI02, HBI05, UF Sunrise and Shiranui mandarins.

The Lloyd Ultra Late Cara Cara orange and the UF900, UF950 and Seedless Snack mandarins had additional grafts made.

In the same period (2022/23 season), 13 new varieties have been planted out in the field on a range of new and appropriate rootstocks for evaluation of fruit production and early observations of graft union compatibility. These include the BA0001 lemon, the Cambria orange, and the Shiranui, HBI01, HBI02, HBI05, HBI06, Kinnow LS, Daisy LS, UF Sunrise, Seedless Snack, UF900 and UF950 mandarins.

The latest group of varieties introduced on the West Australian evaluation sites include the Honey Bee, HBI01, HBI02, HBI05 and HBI06 mandarins, the Lloyd Ultra Late Cara Cara navel and the DV Valencia orange.

All varieties in the program, new or old, can be viewed by appointment.

There are currently more than 40 information sheets available on the NSW DPI website outlining the performance of modern varieties grown at the Dareton research station. Navigate to 'Rootstocks and Varieties' via this link <https://bit.ly/3RyxUNT>





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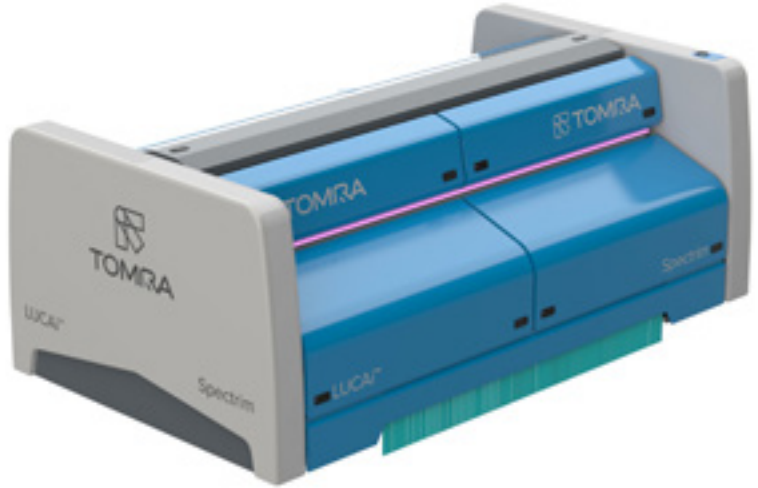
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Dave Monks is a Research Horticulturist with NSW DPI.

The Evaluation of New Citrus Varieties project (CT22000) has been funded by Hort Innovation, using the citrus research and development levy, contributions from the Australian Government and co-investment from New South Wales Department of Primary Industries and the Western Australia Department of Primary Industries and Regional Development.



AI-powered solutions improve efficiencies



By James French

Artificial intelligence (AI) is relevant for food production due to the high level of variability in the industry, from weather and climate effects to natural variations in products.

These factors mean that traditional systems can have a tough time making accurate predictions. It's not enough just to have data – the quality of data is also a big factor in the performance of AI.

As with traditional systems, the better the data, the better the decisions. This is why it's crucial to have the best inspection and sensor systems: they can collect higher quality data, which supercharges the AI system.

This leads to more accurate and more consistent decisions, which results in less food waste and a more saleable product, as well as maximizing the product's value.

AI technology can improve sorting and grading machines in a number of ways. It can help make more accurate 'accept or reject' decisions, recover more good product from compromised batches through higher accuracy, and more precisely classify the products on the line into different grades to enable hands-free production.

'Deep learning' is an AI method that uses pre-trained models to teach computers how to process data, such as complex patterns in photos.

The recently launched Spectrim X Series grading platform provides an example of this.

Spectrim X integrates the latest enhancements to TOMRA's LUCAi Deep Learning technology. The platform is equipped with LUCAi Engine software, computing hardware, and pre-trained models. Spectrim X assesses thousands of high-resolution, multi-channel fruit images every second. It then cross-

references what it sees with AI networks that have been trained on tens-of-thousands of pieces of fruit to make grading decisions that meet precise market demands.

This data has been captured by TOMRA machines across the globe and accurately hand-labelled by TOMRA's data science team.


As the industry navigates future challenges, including tighter quality standards, workforce limitations, and sustainability issues, AI such as TOMRA's LUCAi Deep Learning technology is becoming a necessity for any packhouse looking to gain a competitive edge. ●

James French is Head of Innovation at TOMRA Fresh Food.



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Prepare for mandatory ESG reporting

By Luke Wood

For those of you who may have missed the news midway through 2023, the Australian Government is proposing to phase in mandatory Environmental, Social and Governance (ESG) reporting in 2024, starting with large businesses and progressing to smaller enterprises over three years.

The framework is still to be finalised, but the minimum standard is likely to require the performance of supply chains verified by data.

For example, what are your supply chains emitting? What waste is your supply chain producing? What steps are you taking in your business to reduce carbon emissions in line with net zero goals and timelines?

Irrespective of whether the state of the natural environment concerns you, the regulatory environment will dictate that you must provide this data.

Therefore, you must start thinking about how you're going to capture this information and then act on it.

What areas of your supply chain should you focus on to deliver the fastest gains? What should you prioritise without losing productivity, while still enhancing your quality offering and driving your business toward growth and profitability?

ESG reporting may sound onerous, but it is really an exercise in data reporting.

If you are already an Escavox customer and leveraging your data strategically to lift overall business performance, rather than just managing risk or reducing waste, you will know that improving your

supply chain is not a compliance cost. Instead, it's an opportunity to do better on quality, consistency, costs, customer relationships, brand reputation and price.

Thankfully, there are many citrus growers in Australia who are experienced in the practice of using live data to measure the performance of their supply chains and act on the information to improve their operations.

In 2023, Escavox helped Australian citrus growers monitor 1,300 shipments to nearly all points of the globe, including South-East Asia, mainland China, Japan, South Korea, the Middle East and North America.

The live data Escavox generates helps growers and their supply chain partners see where their produce is located as the journey unfolds, when it arrives in-country and how it is being handled in the chain.

Some producers use Escavox's weekly or monthly supply chain overviews to obtain a deeper analysis of their operation, observe consistent patterns and emerging trends and test weaknesses in their supply chain to guide strategic decision-making to reduce rejections and waste.

Others are linking the live data with shipping data. This gives them even greater assurances and confidence when it comes to managing quality and price when factors such as dwell-time – exacerbated by port congestion and shipping delays – are married to the Escavox data that predicts shelf-life and impact on quality, based on temperature readings and days in-transit. This is all information that can be included in ESG reporting.

If you're already doing it, you're in good shape; if you aren't, it's never been simpler to get on board and start tracking.

Mandatory ESG reporting is coming. Get it right, with the right tools, and you won't need to change a thing within your operation.

Get it wrong, with imprecise or misleading information, or ignore the ESG requirement altogether, and you risk significant financial or reputational damage in the future. ●

Luke Wood is the CEO of Escavox.

Want to learn more? Escavox is exhibiting at the Australian Citrus Congress 2024.



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The virus can cause tree decline, resulting in significant loss of yield and productivity. Source: University of Queensland

New research tackles CTV

Scientists are developing a vaccine-like solution to arm Australian growers with an effective way to combat Citrus Tristeza Virus (CTV).

Delivered through Hort Innovation and collaboratively led by The University of Queensland, the New South Wales Department of Primary Industries (NSW DPI) and Auscitrus, the A\$1.5m initiative will see researchers work with the citrus industry to gather information about different variants of the virus.

This information will be gathered from major citrus-growing regions so that an effective plant-protection solution can be developed.

The impact of CTV on citrus crops can vary from no effect to 100 per cent tree death, depending on the variant.

The virus can cause tree decline and stem-pitting, resulting in significant loss of yield and productivity. Only limited control options currently exist.

The University of Queensland’s Principal Research Fellow, Andrew Geering, said the research will pinpoint the core causes of the virus to develop an effective in-field solution.

“CTV is a highly variable virus, with many strains known to occur. Establishing a link

between a particular strain of the virus and the expression of CTV has been notoriously difficult,” Geering explained.

“This research will establish which strains are the core components of CTV – that is, which strains need to be present for the disease to occur.

“Once those strains are identified, we can reverse-engineer a dead or a mild version of those strains that can be used to trigger an immune response, in a vaccine-like manner.”

Citrus Australia CEO Nathan Hancock welcomed the investment in this research, in the hope it will help growers reduce the impact of CTV on their orchards.

“CTV is difficult to manage in the field, as it is transmitted by winged aphids, which are highly mobile and rapidly spread the virus between trees,” Hancock said.

“Even if certified virus-free nursery plants are used to establish an orchard, the trees are prone to becoming infected after planting, which is why additional measures are needed.”

Citrus Australia’s Citrus Pest and Disease Prevention Committee (CPDPC) recently reviewed preparedness activity for the industry’s high priority pests. The committee encouraged investment in CTV research.

“Virus prevention and preparedness is a matter of upmost importance to Citrus Australia and our industry, so we welcome initiatives like this,” Hancock added.

Hort Innovation CEO Brett Fifield said the research is a way of safeguarding the citrus industry against one of its most significant threats.

“Biosecurity is a key priority for the citrus industry, with more than A\$7.8m invested into a range of programs to bolster preparedness,” Fifield said.

“Access to a CTV vaccine will be a game changer for citrus growers, as they will be able to trigger their trees’ immune response and elevate their defence systems against the virus.” ●

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There is likely to be increased demand for Australian produced NFC orange juice, which is predominantly made from Valencias

Running on empty: Implications and opportunities for global juice supply

BY WAYNE PROWSE

Measuring citrus juice production is a complex beast. A United States Department of Agriculture (USDA) report released in July 2023 forecast 1.6m tonnes of orange juice to be produced globally in 2023, based on a 66' Brix concentrate equivalent.

Of this, around 1.4m tonnes were exported, which means that around 90 per cent of the global production of orange juice is exported.

Brazil is by far the largest producer of frozen orange juice concentrate (FCOJ) and accounts for 71 per cent of global production, followed by Mexico and the US.

Small volumes of 'not from concentrate' (NFC) orange juice is produced in other large fresh orange producing nations, including South Africa, Spain, China, and Australia. An unknown volume of juice is also made from fresh oranges by the food service sector and by end consumers in their homes.

The US produced around 160,000 tonnes of orange juice concentrate in 2022. The USDA report predicted this volume to drop to 64,000

tonnes in 2023, following two hurricanes and the spread of Huanglongbing (HLB) disease in Florida, accelerating a decline that was already well entrenched.

Juice concentrate produced in the United States is almost all consumed within the domestic market. While Mexico is supplying more concentrate to the US as its production increases, the rate is not fast enough to offset the losses in Florida. This means the US' strong demand for orange juice concentrate is placing more pressure on Brazil, which is also facing its own battle with the disease.

The scarcity of orange juice concentrate has increased orange juice spot prices in the US to the equivalent of A\$1,360 per tonne of concentrate (at 66' Brix). On a side note, there is increased domestic demand for Californian



navels, playing out with higher prices and lower volumes exported fresh to Australia.

Brazil has traditionally been Australia's largest supplier of FCOJ, yet Australia accounts for less than 1.5 per cent of Brazil's FCOJ exports. In short, almost no FCOJ is arriving in Australia from Brazil. Alternative suppliers for Australia include Turkey, Israel, and Spain, though at a fraction of the volume previously supplied from Brazil.

To put this in perspective, Australia imported 12,424 tonnes of FCOJ in 2022, which would have produced 106,846 tonnes of reconstituted orange juice for retail and food service consumption at an average fold level of 8.6.

In addition, Australian processors produced 105,355 tonnes of fresh orange juice from 201,709 tonnes of fresh oranges, based on a conversion of 1 tonne of fresh oranges to 500kg of fresh juice. To replace the FJOC with fresh orange juice, the Australian industry would need to produce or source an additional 212,000 tonnes of fresh oranges at juicing grade.

The implications are significant. The global supply of FCOJ is decreasing in the long-term. Replacing the shortfall with fresh premium oranges in Australia at the current pricing structures is probably not an option.

We are likely to see increased demand for locally produced NFC orange juice, along with an increase in orange juice prepared by consumers from fresh fruit.

GLOBAL FRESH CITRUS TRADE

Globally, 162m tonnes of citrus were produced in 2021, while 13.1m tonnes were exported fresh in 2022. It means approximately 8.1 per cent of global fresh citrus production is exported, notwithstanding the variations in data timing.

Europe is statistically the largest exporter of citrus by region, counting 4.6m tonnes in 2022. This is mostly fruit moving from Spain and other southern European producers to northern European markets, along with some Southern Hemisphere citrus re-exported from the Netherlands during the counter-season.

South Africa is the largest Southern Hemisphere exporter, shipping 2.7m tonnes in 2022, with 48 per cent destined for Europe, 20 per cent each to the Middle East and Asia, and 8 per cent to North America.

Argentina, Peru and Chile are the main exporters of fresh citrus from South America. Of the 1m tonnes exported from this region in 2022, the volumes were evenly split between Europe and North America, with only 4 per cent exported to Asian markets.

China is Asia's largest producer and exporter of citrus, with its trade consisting mostly of mandarins. China exported 880,000 tonnes of citrus in 2022, mostly to regional Asian markets and Russia.

Eighty-eight per cent of Australian citrus exports were destined for Asian markets in 2022, in the counter-season to Chinese supply. North America was the destination for 4 per cent of Australian citrus exports (by volume) in 2022.



Consumers are also likely to turn to freshly squeezed orange juice

Australian citrus export volumes reached 261,219 tonnes in the 12 months to 23 October (2023), which was 16 per cent higher compared to the previous season. Trade was valued at A\$512m over this period. ●

Wayne Prowse is the Principal and Senior Analyst for Fresh Intelligence Consulting.

Wayne is speaking at the Australian Citrus Congress 2024.

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AUSTRALIAN

Citrus News

2024 Advertising

Australian Citrus News (ACN) is the voice of Australia's peak grower body, Citrus Australia Limited, and its official magazine.

ACN provides focused, up-to-date information on trends, and market developments affecting Australia's citrus industry both nationally and on an export front. Editorial content is delivered in an easy-to-read style and includes technical information, market trends export and domestic, production developments, key industry issues, research and development, profiles and on-farm reports.

ACN is a quarterly publication with a total readership estimated at 5,000 per issue. Select articles are also published online.

With 1,450 copies distributed nationally four times a year, ACN is direct mailed to all commercial citrus growers. It is also distributed across the industry to: consultants, state agriculture departments, private consultants, agronomists, research institutes, economists and media, where it is considered a vital resource reference on the citrus industry.

ACN deadlines and distribution dates*

2024 Edition	Booking Deadline	Material Deadline	Release Date
Issue 1	March 19	March 22	March 29
Issue 2	June 18	June 21	June 28
Issue 3	September 17	September 20	September 27
Issue 4	December 3	December 6	December 13

* Release dates are indicative only, and are subject to change without notice should late-breaking editorial or other content issues arise.

- ❖ 4 Editions
- ❖ 1,450 copies
- ❖ ~5,000 Readers
- ❖ Targeted Distribution



Citrus eNews


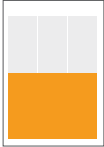
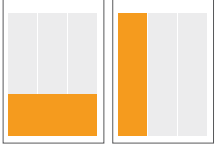
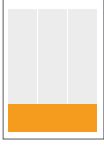

Citrus eNews is distributed monthly via email to a select subscriber base of 1,000 growers and others within the industry.

It contains news and events updates as well as seasonal stories that can be delivered in a timely fashion. Citrus eNews also reflects the content in the magazine.

- ❖ 12 Editions
- ❖ 1,000 copies
- ❖ Targeted Distribution



2024 Advertising Rates and Format

Advert Size	Dimensions	Casual (\$)	3 Issues (\$)	4+ Issues (\$)
Australian Citrus News	 <p>Full page Trim: 210mm (w) x 297mm (h) Full Bleed Area: 216mm (w) x 303mm (h)</p>	2,000	1,950	1,900
	 <p>Half page Horizontal: Trim: 190mm (w) x 120mm (h)</p>	1,290	1,190	1,170
	 <p>Third page Horizontal: Trim: 190mm (w) x 80mm (h) Vertical: Trim: 59mm (w) x 248mm (h)</p>	830	800	760
	 <p>Quarter page Horizontal: Trim: 190mm (w) x 60mm (h)</p>	660	620	600
	 <p>Trade directory classifieds 1 unit: 59mm (w) x 80mm (h) 2 units: 125mm (w) x 80mm (h)</p>	185 330	175 310	165 290
Inserts and advertorial Details supplied on request				
Australian Citrus eNews	<p>Banner Trim: 600 pixels (w) x 150 pixels (h)</p>	430	Please contact Citrus Australia	

For all advertising queries/bookings, please contact Matt Jones, Citrus Australia, on 0448 213 330 or email matt.jones@citrusaustralia.com.au

Artwork Technical Requirements

Australian Citrus News

All final art must be supplied in full CMYK colour format, as a 'Press Quality' PDF (i.e. 300dpi image resolution at the actual size used in the final artwork). Full page ads must be supplied with 3mm bleed. Fonts must be outlined and images embedded.

Raw format files produced in other software will not be accepted. Final artwork is to be sent by the deadline to: matt.jones@citrusaustralia.com.au

Citrus eNews

Final artwork files for eNews and the website must be supplied as either a jpg or gif file format.

Final artwork is to be sent by the deadline to: matt.jones@citrusaustralia.com.au

Note: The Publisher accepts no responsibility for the correct reproduction of supplied advertising material that fails to meet the requirements stated above.

Artwork Design

Advertisers requiring artwork to be prepared by ACN will be charged at \$150 per hour (plus GST). All artwork will comprise of an initial draft (prepared from client-supplied material) and one round of client corrections. Client changes required beyond one round will be costed in addition. Quotes can be supplied before work commences.



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