

Mango Matters

SPRING 2024 | VOLUME 57



Understanding mango fruit drop

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National Agricultural
Leadership program

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Australian Mango Food
Service Strategy

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Mango fruit drop: How research
is looking for solutions

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If you would like to submit pictures and story ideas to AMIA, or provide feedback, please contact the AMIA team via the details listed on this page.

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Mango Matters has been funded by Hort Innovation, using the mango research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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AUSTRALIAN MANGOES

Hort Innovation MANGO FUND

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CHAIRMAN'S REPORT

Ben Martin

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"We need to work together to develop strategies to address challenges and more importantly, develop measures to take advantage of opportunities as they arise.."

.....
- BEN MARTIN

The late start to the Darwin season and overlapping with the Katherine season has meant a tough season for many Darwin growers in getting their crop to market and getting a reasonable return on their mangoes. On top of this, access to labour and transport has again proved challenging. As an industry we need to develop strategies to address these issues, otherwise we will keep facing them.

Growers are continually faced with managing pests and diseases with a limited range of pesticides. With the impending loss of chlorpyrifos we are losing another product out of the range available. We are in regular contact with companies to find out if they have new products coming, or if they have products registered in other crops that would be effective on pests of mangoes.

We continue to work with the Department of Agriculture, Fisheries and Forestry on market access, with a focus on access to new markets and improvements to existing protocols. There are a number of issues which we can work on, that in the long term could have a substantial impact on our ability to export more mangoes. We require the Federal Government to support the industry on forging these new and improved pathways so we can build a sustainable industry for future generations.

While we support the new FASTA project which works on a range of market access issues, we also need to undertake mango specific research that in the long term will strengthen our ability to improve protocols and allow us to build export volumes. Future areas of research include improving our management of mango seed weevil, recognition of areas free of mango seed weevil and research demonstrating the non-host status of several of our mango varieties.


We have commenced organising a board planning workshop to occur immediately following the season. The industry is facing a number of challenges as well as opportunities and we need to work together to develop strategies to address challenges and more importantly, develop measures to take advantage of opportunities as they arise.

Prior to each season we hold a pre-season meeting in each region. While these are an effective way to present information and gain your feedback, we understand that at that time of the year much of your focus is on your business and the rapidly approaching harvest season.

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CEO'S REPORT

Trevor Dunmall

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The mango season is well underway, and the start of this season has been extremely challenging for growers as a compressed start to the season has seen large volumes of fruit in the market. Our reliance in our current Australian consumer base when there are large volumes in the market creates difficulties throughout the supply chain.

In September, I had the opportunity to attend a grower meeting in Mutchilba to listen and discuss with growers their issues and concerns over a range of compliance issues. Growers present agreed on the need for food safety systems for their workers. While the costs of complying with these schemes are an issue, the bigger issue is the stress and burden caused by the compliance process including the audit process. Our challenge is to maintain compliance while reducing the stress and burden on our growers. We will continue to work with growers and scheme managers to look for pathways which will reduce this burden. Thank you to the growers who organised and attended for participating in a constructive and valuable meeting.

The Mango Twig Tip Dieback (MTTD) working group continues to meet on a regular basis. NT DAF (formerly NT DITT) are making progress on determining the causal organism (or organisms) of the disorder. If the current research does determine what the cause of MTTD then we need to be in a position to develop management practices to reduce the impact. We will continue to work with NT DAF researchers, growers and agronomists to find a practical solution to this issue.

In October, AMIA was invited to a one-day Japan showcase held in Sydney with representatives from the Japanese government, importers and retailers. The event was organised by Hort Innovation and Ausveg and was a great opportunity for mangoes and other horticultural industries to discuss opportunities in the Japanese market. The event was the culmination of a one-week tour of a range of fruit and vegetable businesses from Victoria to southern Queensland by the Japanese delegation. The showcase event included a range of presentations and tasting of fresh fruit and nuts. Special thanks go to Rutto's mangoes, Perfection Fresh and Red Rich for supplying mangoes for the event.

In late October, Western Australia temporarily suspended the CTM-01 protocol for growers dispatching mangoes from the Northern Territory to Western Australia. The protocol requires mangoes to be of class 1 quality or above. The CTM-01 protocol into Western Australia for this year is a 12 month trial so each consignment is being inspected. While the focus has been on Qld fruit fly, meeting the required fruit quality standards is important as well. It is important that we work on addressing issues raised by Western Australia so this temporary suspension does not become a permanent suspension. Access to Western Australia through the CTM-01 protocol is very important for growers dispatching to Western Australia and the broader industry.



Mango Price Report - Thank you to our sponsors

Each season, through the services of Ausmarket Consultants, we publish market weekly prices collected from wholesale markets. Access to this service is through our website or the link in My Mango published each week.

The cost of this service is supported by our Primary Sponsor - Perfection Fresh.

Perfection Fresh have been long term sponsors and their continuing support is greatly appreciated.

Recently Avondale Foods has agreed to become the Secondary Sponsor for the market weekly price reports. Many of you may have met Ben Pascoe from Avondale Foods as he attended a number of the pre-season roadshow meetings.

Southern Queensland & New South Wales



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What looked like a bumper season will now be more moderate, with many farms reporting larger than normal fruit drops. The weather since fruit set has been mostly kind with mild temperatures and not too much rain. This, along with effective orchard management has contributed to most farms reporting good quality fruit. It looks like it will be standard timing for harvesting fruit in the region this season.

I would like to thank the Philpott's and the Groves' for hosting the SEQ pre-season roadshows on their farms. The roadshows are a great way to catch up with other growers, the AMIA team and industry partners.

Southern Western Australia



David Morcombe
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After our hot summer last year we are hoping for a more reasonable one this season. Carnarvon had a big crop last year although unfortunately due to the sunburn and a compressed harvest period the harvest volume did not reflect that. This season the trees seem to be taking a rest with a more spread out but patchy crop expected.

Further south we have seen early and strong flowering but the spring weather has been very variable and at the time of writing we are yet to evaluate fruit set. Timing of the crop looks normal, but that is just based on what has happened so far.

I expect that by the time you are reading this our pre season roadshows will have happened. To stay more up to date with these and other events you should be receiving the weekly "My Mango" email on a Tuesday afternoon, if you are not please advise our new Communications person, Fran Devereux and she can arrange that.

This seasons' marketing looks good with support for retailers prepared to spend on advertising. It's worth mentioning, because this is sometimes misunderstood, that AMIA/Hort Innovation doesn't do this retailer advertising. The budget goes nowhere near the spend required. The ads are placed mainly by retailers. Our activities in relation to retailers include providing information on crop size, timing and providing marketing collateral if required. This is why the accuracy of crop forecast data is important as it helps retailers plan their advertising programs.

Good luck to all for this season.

Far North Queensland & North Queensland



John Nucifora
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Hi all, it has been a bad year for Mareeba / Dimbulah for flowering. I think weather conditions have played a part. First of all we had Tropical Cyclone Jasper that delivered over two meters of rain. Secondly the continuous cold snap with a touch of frost and that didn't help. There is a couple of crops in the area that have performed well but the majority not as good. I'm getting my growers complaining to me about the level of compliance that is required to be able to sell fruit. It's getting a lot worse for growers and they are starting to reject the demands that have to be met.

I personally believe we can deliver safe fruit by just testing fruit and making sure it is safe for consumption. Growers have asked me to put pressure on the whole system of compliance. Work is ongoing within AMIA.

Another major issue is that Border Force and Labour Hire Licencing are raiding farms and intimidating farmers with threats of high fines if labour hire providers deliver illegal workers. I believe if the labour hire provider is registered and they provide illegal workers, it should be the labour hire company that is responsible and they should face this pressure. We pay labour hire providers to find workers, it shouldn't be up to the farmers to check the people that come from a labour hire provider. I hope we can all get through this tough year.



John Nardi
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Well, we are in the midst of another season and there have been lots of NT fruit in the markets. While the flowering earlier on looked to be very strong for the Mareeba-Dimbulah region the reality now has seen a very average fruit set on most varieties. It is disappointing after the average volume crop last season. It seems that the week or so of cold weather in mid to late July really affected the trees and has upset them enough to impact the fruit setting.

Weather has been very dry and warm throughout most of the region so far which is great for fruit quality but can cause water stress if not monitored properly and result in excessive fruit drop or smaller fruit sizing. Most growers will have a reasonable idea by now of what their crop volumes will be looking like. I expect the overall volumes will be similar to last season for the region. I am sure most growers are well underway in their harvest planning, and I would like to wish everyone all the best for the season. Hopefully, the lighter volumes will be rewarded with higher pricing and mother nature does not throw any spanners in the works.

National Farmers Federation (NFF) Horticulture Council



AMIA has been a member of the NFF Hort Council for several years. Along with other industry bodies (e.g. AUSVEG, Citrus Australia, Avocados Australia) the Council is the recognised peak body for forming policy and advocating on behalf of the national horticulture industry. Established in 2017, it now comprises 20 national commodity and state-based horticulture bodies, who together represent the full breadth of an incredibly diverse industry.

The Council is chaired by Jolyon Burnett (former CEO of the Australian Macadamia Society). Jolyon has been involved with several Australian horticulture industries over many years. The Council's Executive Officer is Richard Shannon, who previously worked in advocacy for Growcom (QFVG).

The Council develops policy positions on common issues of national importance to the horticulture industry such as trade, workforce, biosecurity, farm business, climate change and sustainability, markets and competition, R&D, telecommunications and infrastructure.

With a broad remit, the Council is focused in particular on these core priorities on behalf of the industry:

1. Access to a secure, reliable and productive seasonal labour workforce.
2. Industrial agreements that deliver fairness and productivity.
3. Efficient, transparent and fair domestic wholesale and retail markets for horticultural products.
4. Expanded export market access and trade in horticultural products.
5. Freedom from pests and diseases that impact production, resulting from an efficient, effective, properly resourced, and equitable national biosecurity system.
6. Execute strategies that ensure sound food safety and worker safety systems are available without undue compliance burden.

The Council is a member of the NFF, but is free to establish and advance its own policy positions and responses on issues impacting the horticulture industry.

As well as being a member of the NFF Hort Council, AMIA is represented on the following committees/working groups:

- Market Access committee
- Compliance burden working group (recently formed)
- Chemical access working group (recently formed)

In future editions of Mango Matters we will provide updates on these issues, noting that many of these are challenging as there are diverse views on a range of these issues.

Your Health Matters

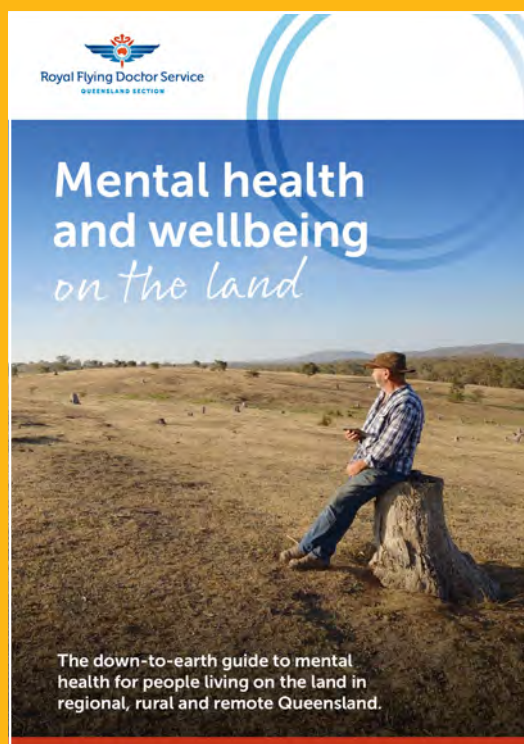
Natural disasters, droughts, financial stress, and geographic isolation are some of the challenges faced by people in regional and rural Australia.

However, the impact on mental health and wellbeing can be overlooked and, due to the remoteness and lack of supply, accessing appropriate services can be more challenging than in urban areas.

The Royal Flying Doctor Service is working towards increasing access to mental health services through the development and distribution of the new book 'Mental Health and Wellbeing on the Land'.



To download a copy of this valuable book, scan the QR code or please [click link here](#).



AMIA & INDUSTRY NEWS



Ebony with her NALP colleagues and the Hon David Littleproud, Leader of the National Party and Shadow Minister for Agriculture

National Agricultural Leadership program

Ebony Faichney

Well known Mareeba horticulturist and consultant Ebony Faichney, who worked with Mareeba/Dimbulah mango growers accessing QRIDA grants following the devastating impact of flooding rains from ex TC Jasper, is in the final stages of completing the National Farmers Federation (NFF) National Agricultural Leadership Program (NALP).

Ebony was one of the 12 successful applicants to participate in the 2024 intake of this esteemed program. Over the past 6 months, the group has participated in a series of activities in leadership, advocacy and policy development.

A key component of the program was an Advocacy summit held in Canberra during August. AMIA was proud to nominate Ebony and sponsored her attendance at the program's advocacy summit.

During the program, Ebony had an opportunity to raise important issues from the horticulture sector with national stakeholders in advocacy and politics. Ebony chose Compliance Burden as her main priority for the program, and recently presented findings and recommendations to a national audience of leaders at the program graduation. She now also joins Trevor Dunmall and others on the National Compliance Taskforce group.



Ebony visiting Parliament House

AMIA would like to thank Ebony for her activities assisting growers following ex TC Jasper and for representing horticulture in this national program. Our industry needs strong advocates working for mango growers.

Loss of Chlorpyrifos

On October 3rd, the APVMA published its final decision on the reconsideration of the use of chlorpyrifos.

Chlorpyrifos is currently registered for the control of mango scale in mangoes.

The final regulatory decision has removed most agricultural and urban pest control uses of chlorpyrifos due primarily to worker health and safety and environmental risks that the APVMA does not believe can be mitigated.

A 12 month phase out period will allow product users to use the product already in the supply chain or on farm but does not allow manufacture or import.

APVMA Chief Executive Officer Mr Scott Hansen said the final decision was required to remove any potential risks to users and the environment.

“The APVMA’s decision to cancel, vary, and affirm these products was based on a rigorous, evidence-based scientific review. This review was supported by a public consultation process, and multiple rounds of peer review,” said Mr Hansen.

“We have considered all submissions and available information to inform thorough scientific risk assessments for the use of chlorpyrifos in agricultural and veterinary chemical products. A limited number of additional chlorpyrifos uses have been supported in the final regulatory decision.

AMIA, along with other industry organisations prepared a submission to retain the use of chlorpyrifos but our bid to retain use was clearly unsuccessful.

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Mango King for 2024, John Nicolaou, owner of Fresh Sensations Carindale and Chermside.

Brisbane Markets Mango Auction

Queensland has crowned a new Mango Monarch at the 2024 Brisbane Markets Mango Auction, with John Nicolaou taking the title of Mango King with his \$32,000 bid.

Owner of Fresh Sensations Carindale and Chermside, Nicolaou won the day after a fierce bidding war with rival would-be-kings to secure his second Mango King title, after previously being crowned a decade ago in 2013.

Proceeds from the 2024 Brisbane Markets Mango Auction benefit Redkite, who provide practical, financial, and mental health support to families who have a child with cancer, and The Lady Musgrave Trust, who provide practical solutions that save lives and transition young women who are homeless or at risk of homelessness to a life of opportunity and prosperity.

“This event is a wonderful opportunity for the industry to give back to Queensland families who are doing it a bit tougher than most,” BML Chair, Anthony Kelly said.

“A total of over \$44,000 was raised at this year’s Mango Auction which will support Redkite and The Lady Musgrave Trust.”



Samantha Frolov, from Perfection Fresh



The Queensland Police Pipes and Drums Band escorted the first tray of mangoes.



A total of over
\$44,000
was raised at
this year's
Mango Auction

Mangoes for the auction provided by Leo Skiros, noted Darwin mango grower, AMIA Board Director and President of the Northern Territory Mango Industry Association.



Looking to sell your processing-grade mango?

Avondale Foods, situated in Orange in the NSW Central West, is a family-owned and operated business processing fruit products for the Food Service and food manufacturing sector.

Avondale is traditionally an apple grower and processor. Now, with the fourth and fifth generations involved in the business, we have recently added pear, quince, and mango to our product portfolio.

Avondale Foods is looking for growers and packers who are willing to partner with us to supply processing-grade mangoes.

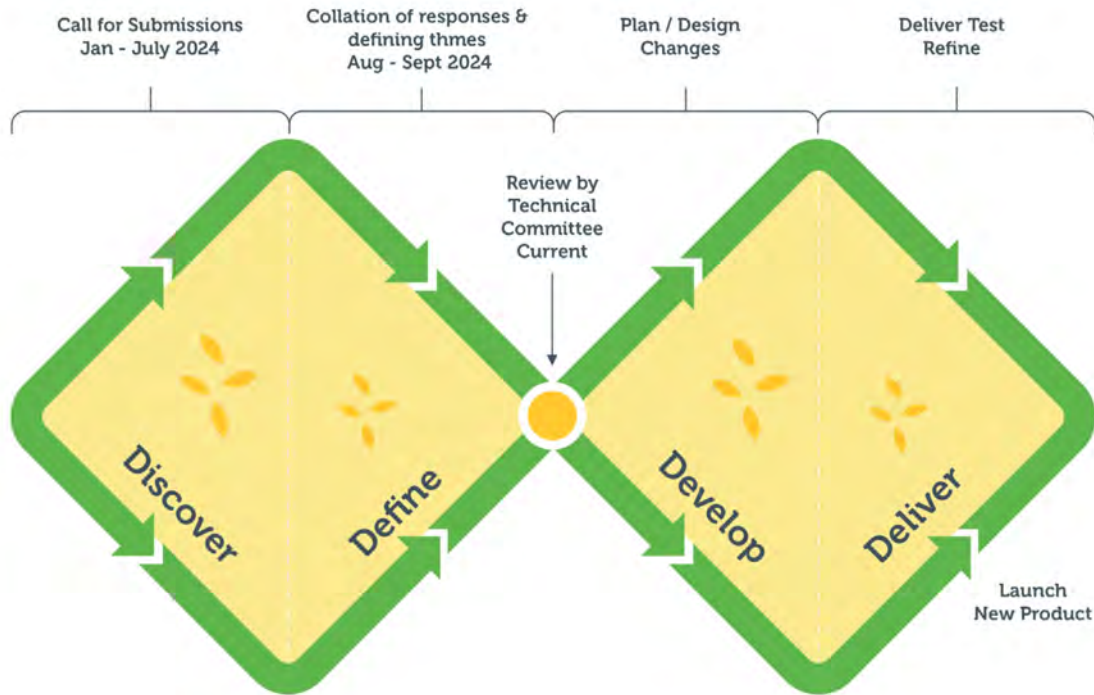
We will arrange and cover freight and we offer attractive payment terms. Being growers at heart, we know how necessary it is to be paid for the hard work and dedication involved in producing every piece of fruit.

Reach out today
to discuss
opportunities



P: +61 429 034 365
E: sales@avondalefoods.com.au





Freshcare Standards Review 2024 – 2025

Article adapted from information available on Freshcare website

Freshcare is undertaking a review of Standards during 2024/25. Earlier this year over 180 responses were received from a broad range of businesses and organisations participating in the Freshcare standards.

As part of the review Freshcare has engaged a Technical Steering Committee (TSC), comprised of industry experts committed to developing and future-proofing Standards for industry and participants.

During the past few months, Freshcare has introduced a Framework for Innovation to undertake their Standard review process. The Framework will guide the review process which outlines four core problem-solving principles and assist with effective and timely delivery of the Standards Review project.

The Framework for Innovation’s key goals are:

- Put people first. Start with an understanding of the people using a service, their needs, strengths and aspirations.
- Communicate visually and inclusively. Help people gain a shared understanding of the problem and ideas.
- Collaborate and co-create. Work together and get inspired by what others are doing.
- Iterate, iterate, iterate. Do this to spot errors early, avoid risk and build confidence in your ideas.

PLANNED SCHEDULE OF REVIEW ACTIVITIES

January – July 2024: The review process began by putting people first and calling for submissions to discover individuals and industry needs and perspectives.

August – September 2024: The Freshcare team collated 812 comments and categorised into themes for review including 355 identified as needing review from the Technical Steering Committee.

October 2024: The Technical Steering Committee were sent the submissions and met to begin reviewing and addressing technical comments.

October – November 2024: The TSC are meeting regularly to continue to review and address key technical comments received relating to:

- HACCP/Hazard Analysis
- Site Soil and Nutrients
- Water and Chemicals

Current – 2025: A desktop review of benchmark criteria and industry recognition is currently being conducted to ensure standards meet industry requirements and are fit for purpose.

2025: Freshcare will then define and develop changes identified and aim to deliver any changes in 2025.



A Guide for Australian Mango Growers Exporting to the USA

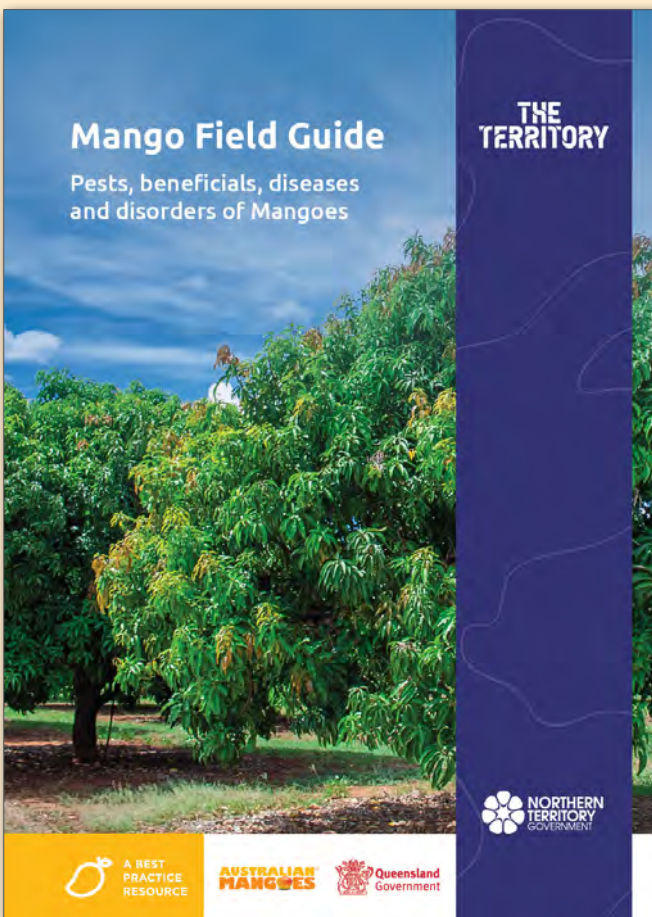
A new guide for Australian Mango growers, exporters and freight forwarders planning to export to the United States of America has been released.

The guide provides comprehensive information on a range of topics, including:

- The registration process
- Crop monitoring
- MRL's
- Packing and labelling
- Ripening and cool chain management
- Inspection and treatment



To access an electronic version of the **Guide for Australian Mango Growers Exporting to the USA** please scan the QR Code or [click here](#).



New edition of the Mango Field Guide

Launched at the conference, NT DITT (now NT DAF) released the third edition of the Mango Field Guide.

This guide provides information to allow the identification of pests, beneficials, diseases and disorders of mangoes and gives information on their biology including life cycles, damage, distribution and critical times for monitoring.

This new edition includes a section on exotic mango pests and diseases that pose a biosecurity threat to the Australian mango industry.

To access a hard copy of the Mango Field Guide, contact the team at Australian Mangoes.



To access an electronic copy of the **Mango Field Guide** please scan the QR code or [click here](#).

Ensure you only employ workers with the right to work, even if you use a Licenced Labour Hire Provider

Recently a number of growers have been visited by Border Force staff. In Queensland, Labour Hire Licensing Queensland has also been visiting growers.

Even if you use a licenced labour hire provider it still remains the grower's responsibility to ensure that illegal workers are not working on their property.

Both the grower and the Labour Hire Provider (LHP) should be ensuring that all workers coming on to their property have had the relevant VEVO and identity checks conducted.

Growers should ideally retain a copy of all worker records and personally conduct VEVO checks to verify work rights. This ensures that the VEVO results are accurate and genuine.

The safety of using a 'Licenced Labour Hire Provider' only goes to ensure that the LHP has the right to operate as a LHP in that state. It does not guarantee nor mean that the LHP is conducting the day-to-day business in a compliant manner.

In regard to protecting yourself with accessorial liability charges, the more



robust the Labour Hire Agreement you have with the LHP, and the more due diligence that you can demonstrate they have taken, on an ongoing basis - then the more you are protected.

ACCESSORIAL LIABILITY

Accessorial liability occurs when a person or company is involved in the contravention of a workplace law. When this happens, they're treated the same way as the employer responsible for the

contravention. They can be ordered by a court to pay employees' unpaid wages and entitlements, as well as penalties for their involvement in the contravention.

Being involved in a contravention means the person or company:

- assisted, recommended or caused the contravention
- influenced the contravention (for example, by making threats or promises)
- was knowingly concerned in or was a party to the contravention, or
- conspired with others, which resulted in the contravention.

A person or company can include:

- a company director
- a human resources manager or other manager
- a payroll officer
- an accountant
- a business involved in the company's supply chain.

The accessorial liability provisions allow us to hold anyone involved in a contravention accountable, even if the business has gone into liquidation.

Companies that outsource their work need to make sure they're not also outsourcing non-compliance.

In Queensland, Labour Hire Licensing Queensland has reached out to remind growers that if they are using a labour hire company, they need to ensure they are licenced providers.

The Queensland Labour Hire Licensing Compliance Unit (LHLCU) is seeking to engage, build awareness and remind mango growers of their obligations under Labour Hire Licensing Act 2017 (the LHL Act).

Under the LHL Act, users of labour hire must only use licenced providers. Inspectors will be visiting growers during the season to ensure compliance with the LHL Act.

More information on labour hire licensing requirements, including advice on what to do before and after entering an arrangement with a licenced labour hire provider, can be found on the **Queensland Government website - Labour Hire Licensing Queensland**



Employers must ensure all employees engaged in their supply chain are receiving the correct minimum entitlements under workplace laws. Otherwise, they could be responsible for not following the law. For more information, visit **Managing your labour contracting**.

Happy Retirement, Cheryl!

After nearly two decades of dedicated service to Mango Breeding with the Queensland Government, Cheryl Maddox has started her well-deserved retirement.

Under leadership from Dr. Ian Bally, Cheryl has been the technical lead for mango breeding in Mareeba, working long days in the paddock at Southedge and Walkamin Research Stations.

Cheryl played a pivotal role in the annual hand pollination work, in addition to year-round trial maintenance and data collection exercises. More recently, Cheryl has worked closely with growers and nursery staff across Australia, managing budwood collection from the Walkamin gene pool for special orders.

The success of mango breeding in Queensland would not have been possible without Cheryl's hard work, almost all of which was paddock based and occurred behind the scenes.

We wish Cheryl all the best in her retirement.



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2024-2025 Mango Season Marketing Program Update

The Australian Mangoes marketing program is funded by Hort Innovation, using grower levies. Developed in consultation with the mango marketing Strategic Investment Advisory Panel (SIAP), the 2024-2025 mango marketing program comprises of three strategic pillars:

PILLAR 1

CELEBRATE THE ICONIC JOY THAT IS MANGOES.

PILLAR 2

BE UNMISSABLE IN RETAIL OVER THE MANGO SEASON.

PILLAR 3

SHARE THE JOY OF AUSSIE MANGOES BEYOND OUR SHORES.

The objective of the mangoes' marketing plan is to make positive increases in household penetration season to season by continuing to own that mangoes are the joyful, iconic taste of Australian summer. The target audience for the campaign is main grocery buyers (18+), with marketing activities targeting key periods within the season including season launch, mid-season, and end of season.

DOMESTIC 'TASTE THE SUNSHINE' ADVERTISING CAMPAIGN

The optimised 'Taste the Sunshine' creative assets have been rolled out, implementing learnings as guided by consumer research. These assets are now live across multiple mass reaching media channels, including shopping centre panels, social media advertising (Facebook and Instagram), YouTube advertising, and Coles and Woolworths online digital advertising, and instore POS materials. The campaign will run from October until the end of March 2025.

SHOPPING CENTRE PANELS:

Mangoes are predominately purchased on impulse. The marketing approach for mangoes covers multiple mediums to ensure we capture the attention of passing consumers, be it on foot or online. Animated and static advertisements on shopping centre panels will capture the attention of shoppers and create reminders pre-store on consumer's path to purchase and will be live throughout the entire season.



SOCIAL MEDIA ADVERTISING:

A rotation of social media assets will drive awareness throughout the season.

In addition to the 'Taste the Sunshine' creative, on social media an 'on the go' advertisement aimed at driving new consumption occasions for mangoes has been implemented. This advertisement features a mango in a lunchbox to

highlight how easy it is to enjoy a mango outside of the home.

The new advertisement encourages parents to include mangoes in their children's lunchboxes, creating habitual consumption from a young age. At the same time the campaign inspires adults to opt for a refreshing mango when they are away from home, with the meal inspiration featured appealing broadly across different age demographics.

YOUTUBE ADVERTISING:

Using the largest video sharing platform globally, YouTube enables us to promote Australian mangoes and increase awareness of mango key messaging with Australian consumers throughout the season. Leveraging both 6 second and 15 second advertisements to prompt consumers to add to their shopping list.

COLES AND WOOLWORTHS ONLINE DIGITAL ADVERTISING:

Throughout the 2024/2025 season online retail media advertising encourages add to basket purchase on Woolworths and Coles online shopping platforms.

INSTORE VISIBILITY:

With the support AMIA's Supply Chain Engagement Manager, activities targeting consumers at the point of purchase will be implemented throughout the season. This includes working with both major and independent retailers on instore incentive programs, point of sale



promotional materials, and retail staff training guides.

SEASON LAUNCH PUBLIC RELATIONS ACTIVITY:

Heralding the start of the mango season, on 3 October 2024, the Brisbane Markets mango auction sold the symbolic first mango tray of the season, raising funds for charity. After fierce bidding John Nicolaou secured this year's title of Mango Monarch with his generous \$32,000 bid.. Overall, \$44,000 was raised to support charities Redkite and The Lady Musgrave Trust.

Gaining extensive media attention, the event generated over 153 pieces of earned media coverage across broadcast television, radio, online and print media.

EXPORT 'TASTE THE SUNSHINE' ADVERTISING CAMPAIGN:

Australian mangoes will be promoted in three key export markets with the objective of building in market awareness and driving consideration for Australian mangoes with export consumers. These markets include:

- **New Zealand:** Leveraging the domestic 'Taste The Sunshine' creative assets, the New Zealand marketing program includes advertising across shopping centre panels and social media, including Facebook and Instagram. Activity will run from November until the end of December 2024.
- **United Arab Emirates:** In the UAE, retail marketing activities launch on 7 November 2024. This activity includes in-store display activations and instore consumer sampling in partnership with LuLu Hypermarkets, and will be conducted in six locations across Dubai, Abu Dhabi, and KSA.
- **South Korea:** In partnership with Lotte Supermarkets, instore displays and consumer sampling activities will promote Australian mangoes in South Korea from late November until early December.



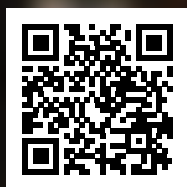
For further information please contact:
Belinda Van Schaik, Hort Innovation Marketing Manager:

M: 0411 844 441 E: belinda.vanschaik@horticulture.com.au

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Mango Supply Chain Engagement

Andrew Burns, AMIA Supply Chain Engagement Manager

Larger volume of mangoes reached retail shelves in early October, following a slow start to the season which saw only relatively small volumes reaching the market through September.

In their pre-season planning, retailers have been planning marketing and promotions activities to support the forecast volumes to be implemented as the season commenced.

In the September edition of Mango Matters we presented the activities that were going to be the key to this season's retailer programs.

Working with retailers, we have been encouraging retail staff to maximise sales through a range on in-store strategies, including:

- Stock mangoes in multiple locations in store to maximise consumer purchase opportunities
- Link in with mango marketing activities to highlight availability and ensure plentiful stock in store
- Work with in store staff to create excitement from the start of the season to the end of the season
- Encourage retail staff through incentive programs to drive creative instore displays to increase purchase frequency and weight of purchase
- Ensure retail staff understand how to manage mangoes - ensure the **retail training guide** is available to retail staff

As discussed in the previous mango marketing report, the new Taste the Sunshine assets will be in play this year and particularly with our Mango point of sale that has been distributed and utilised by Metcash/IGA across their network of around 1000 stores nationally, with Hort Innovation/AMIA team further supporting the retail excitement within the instore activities driving large colorful displays with placement towards the front of store.

An incentive provided by the Hort Innovation/AMIA team was put to work within Coles, Woolworths, Harris Farms as well as the IGA group and is supporting large impactful displays that have grown as the volume of mangoes and the number of varieties have increased.



Along with the point of sale generated by the Hort Innovation marketing team, retailers have been very productive preparing and displaying mango point of sale above their mango displays supporting their consumer messaging with the aim to increase mango purchase.

Here are just some images of the point of sale generated by Woolworths and Harris Farm from early on in our season.

Retailers use of brochures and online advertising has also increased through the season, with the increased availability



of mangoes being highlighted. With mangoes still considered an impulse purchase, the use of brochures and online advertising aims to increase the frequency of mangoes being added to the shopping list.

With mangoes from Queensland and Western Australian regions entering the market through November and December, it will be crucial for retailer marketing and retain promotion activities to be aligned to amplify our own marketing campaigns to ensure mangoes are always in front of consumers and consumers have every opportunity to purchase Australian mangoes.



“I'd liken It to finding A Gold Nugget”

Alf Pappalardo, Marathon Man Go



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Australian Mango Food Service Strategy

In 2023 Hort Innovation commissioned the company Freshlogic to undertake a review of Australian mangoes in Food Service and develop a strategy for the industry.

This article provides an overview of the research and summary of the outcomes. If you would like a copy of the final report, please contact us at Australian Mangoes.

STRATEGY & PURPOSE

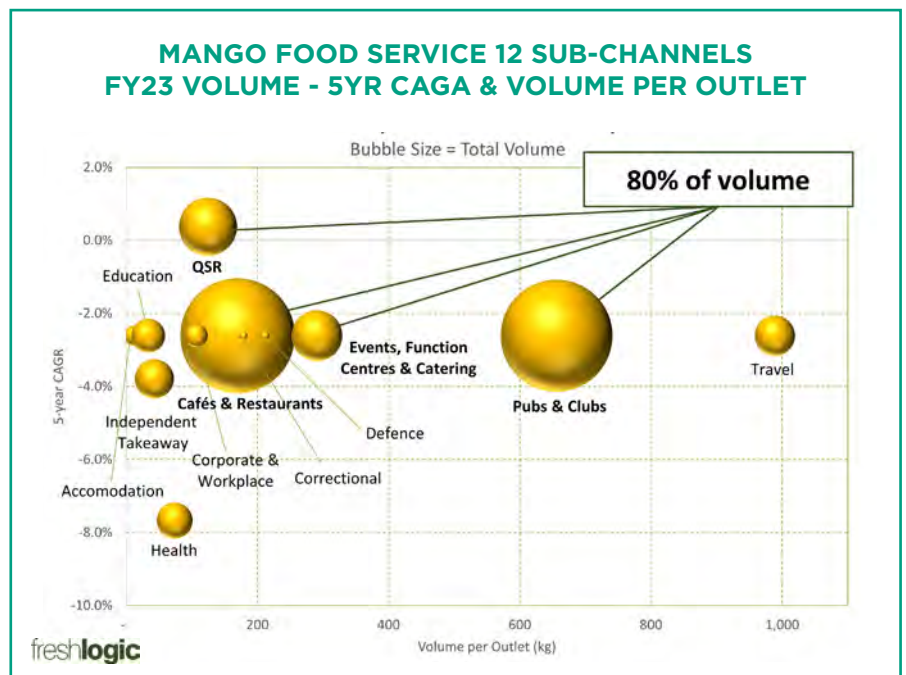
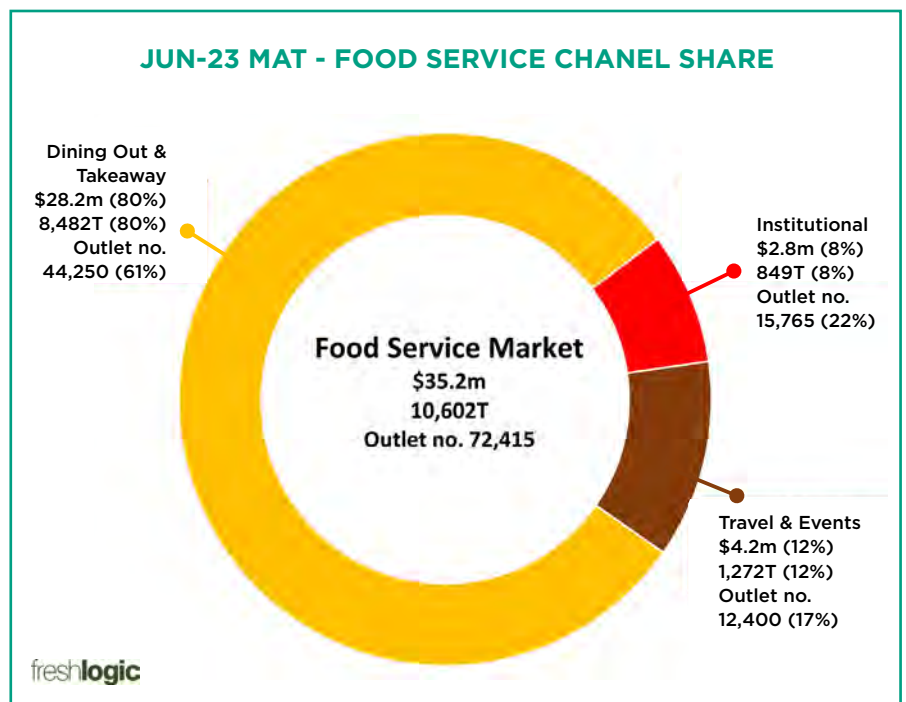
1. Review, summarise and extract implications from all prior projects and available relevant research on Mangoes in the foodservice channel.
2. Improve capabilities of the Mango industry to engage effectively with foodservice providers and execute channel growth plans.

BACKGROUND

The mango industry faces challenges in navigating the complex and varied foodservice channel, which encompasses over 70,000 outlets and compares to just 25,000 outlets in retail. The foodservice channel – defined as providers of food eaten out of the home – is complex and varied. It is made up of three channel groups; Dining Out, Travel & Events, and Institutional, which are further broken down into twelve sub-channels, that contain the 70,000 outlets.

The channel settings are shaped by the varied needs of Restaurants, Fast Food, Airlines and Rest homes, who typically have varied product preferences, supply chain pathways and intermediaries involved in buying processes. This creates a complexity that challenges how the mango industry can effectively engage and influence foodservice enterprises on a broad scale.

While mangoes currently outperform other fresh fruits in the foodservice channel, with 15 per cent of fresh supply going into this sector (compared to 14 per cent for the total fruit market), there remains an untapped potential to better understand and expand mangoes within the food service market. The compelling reason for seeking a greater understanding of the food service sector is that Australian households continue to spend more of their total food expenditure on food prepared and often eaten away from home.



Priorities	Initiatives
1. Improve mango supply to ensure consistent product, over clearly defined seasonal windows.	<ul style="list-style-type: none"> a. Define and implement an action plan that can inform, influence and align proveedores to plan and improve supply. b. Define and implement a means to gather relevant seasonal information and make it available to inform food service buyers & menu planners. <ul style="list-style-type: none"> i. To include alignment with the weekly dispatch data ii. Plan for dissemination through the digital toolbox solution scoped in 2 (b).
2. Assess the viability of extending food service menus with a processed Individual Quick Frozen (IQF) product form	<ul style="list-style-type: none"> a. Define the decision framework and process to determine if IQF mango product is viable in Australia. To include: <ul style="list-style-type: none"> i. Assessing the precedents and performance of the IQF product form in the food service channels in US & EU markets. ii. Converse with the Australian ready meal assemblers on demand for this product form. iii. Acknowledge the demand preferences for KP taste attributes and the barriers to lower cost imported IQF alternatives it provides, while also considering scope for other AU mango varieties. iv. Adopt, enhance and employ a decision criterion that includes: <ul style="list-style-type: none"> I. Level of grower income II. Acceptable product form to food service buyers II. Forecasted commercial scale IV. Investment barriers to processing capacity.
3. Build the capacity to inform and influence themango food service supply chain stakeholders.	<ul style="list-style-type: none"> a. Define the target audiences and communications objectives to inspire, educate and influence decision making. <ul style="list-style-type: none"> i. Prioritizing a communications program to Chefs that can be levered into peer reviews and flow to other sub channels. ii. Identifying cross-product and meal occasion promotions to food service that could be complemented by partnering with Mango. iii. Including consideration for content on; product grade specifications, seasonal availability status, handling & storage, menu planning, mango meal assembly procedures and peer reviews of mango meals b. Define the mechanism to develop and manage an online digital toolbox to deliver Mango content to target audiences. c. Define the processes and resource solution to gather, assemble and update the information required for the communication content.

THE KEY FINDINGS OF THE RESEARCH INCLUDED:

- Mango food service volume is substantial at 15% of total fresh market volume.
- The growth of Food Service is capturing more of household food spend compared with the retail food with compound annual growth rate (CAGR) FY18 to FY23 for food service 5.6%, while retail food is 2.8%.
 - Demand is high for mangoes but buyers acknowledge that supply can be challenging and when they get past the supply chain challenges, mango is a high yield fruit and is a demand driver in a meal.
 - The main mango uses in Food Service are dominated by: Beverages, desserts, salads and to a lesser degree meat dishes.
 - The increasing cost pressures across food service enterprises has created a higher receptiveness for meal ready food ingredients that require less labour. This finding has invited assessing processed product forms.
 - The limited season length and product inconsistency are barriers for some and challenges for all.
 - There is firm current demand for 10,000 tonnes of mangoes with the KP taste attribute, that are currently processed into a paste for use in beverages and other food ingredients.

Small Gaps, Big Impacts: Understanding Stomata in Mango Trees

Bruno Rocha Tamelini, Dale Bennett, Gerhard Rossouw; Queensland Department of Agriculture and Fisheries

Stomata are tiny pores, mostly found on the underside of mango leaves (Figure 1), that play an important role in the health and productivity of trees. They enable trees to exchange gases with the atmosphere, absorbing carbon dioxide (CO₂) for photosynthesis. This is the process by which carbohydrates are produced to support growth and fruit production. Stomata also release oxygen (O₂) and regulate water loss through transpiration which helps trees manage their water balance and keeps leaves cool. This is important for improving how trees handle stress, capture energy, and produce fruit. To understand stomatal efficiency in orchards, factors such as light interception, atmospheric CO₂ levels, temperature, humidity, as well as stomatal size and density, must be considered.

Bruno Rocha Tamelini, from the Queensland Department of Agriculture and Fisheries at Mareeba, is investigating how stomata anatomy and function influence mango tree productivity, as part of the National Tree Crop Intensification in Horticulture Program (AS18000), funded by Frontiers developed by Hort Innovation. By assessing both anatomy and function of stomata, it is possible to gain valuable insights into how different varieties and planting densities impact the trees' ability to manage water, assimilate carbohydrates, and thrive under varying environmental conditions, for long-term tree health and productivity.

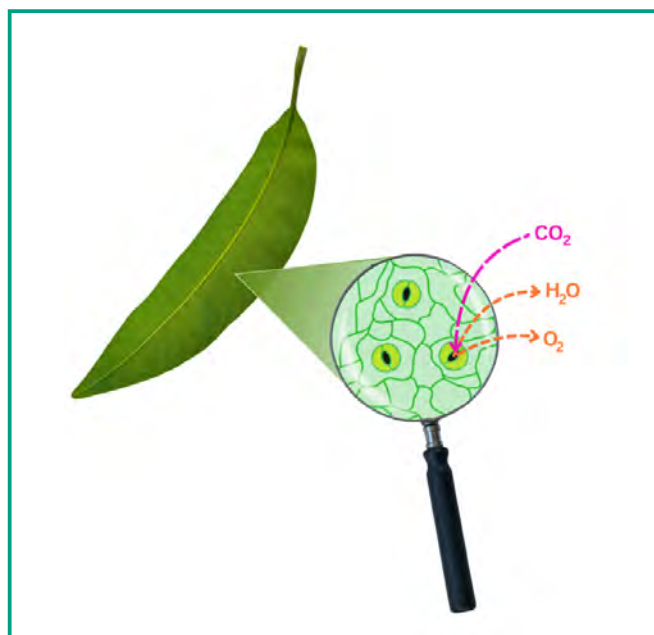


Figure 1: Stomata, located on the underside of mango leaves, play a crucial role in gas exchange with the atmosphere.

HOW DO STOMATA WORK?

In simple terms, when the tree has an adequate water status, light hits the leaves and triggers the guard cells surrounding the stomatal pore to expand, causing the stomata to open. Consequently, the stomata absorb CO₂, release O₂, and lose water vapour. The regulation of these processes keeps the tree alive and helps determine how much fruit the tree can produce.

STOMATAL PROPERTIES

Trees may adapt the size and number of their stomata, known as stomatal density, based on conditions such as water availability, light interception and the concentration of CO₂ in the air (Clark et al., 2022). Our work has revealed that leaves of the 'Keitt' variety have higher stomatal density, but the stomata are smaller, whereas 'Yess!' (NMBP 1243), has larger stomata but lower density (Figure 2). This genetic adaptation means mango varieties may differ in their regulation of water loss and the quantity of CO₂ they absorb. This may be one of the reasons that varieties differ in their irrigation needs and fruit production capacity. However, more research is needed to better understand these differences.

Additionally, sunlight interception can influence stomatal density and size, which means that leaves on different sides of the canopy may vary in their stomatal properties to optimise light absorption. This is another area we are exploring.

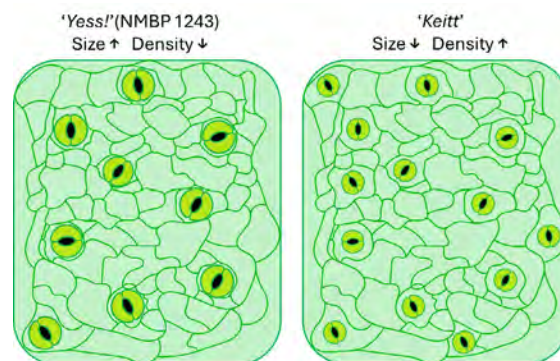


Figure 2: Stomatal size and density may differ between varieties. Some varieties exhibit larger stomata albeit with a lower stomatal density (left), while others may have smaller but higher stomatal density (right).

STOMATAL CONDUCTANCE

Simply having more or bigger stomata isn't enough to determine how well a tree's stomata are working; to better understand leaf function, the stomatal conductance is also important. Stomatal conductance, referring to the extent of opening of the pore, presents the stomata's ability to regulate water loss and gas exchange.

Understanding the stomatal conductance, density and size, along with measuring the leaf chlorophyll levels (greenness), gives us an idea of the plant's photosynthetic capacity, which relates to the quantity of carbohydrates the leaves could produce. Carbohydrate availability, in turn, is a major determinant of how much fruit the tree may bear.

MORE OR BIGGER ISN'T ALWAYS BETTER

Varieties with smaller and more stomata (e.g., 'Keitt') may respond more quickly to environmental changes, managing water better during periods of drought. The cells that control stomatal conductance may need less stimulus to trigger the opening and closure of stomata, allowing the plant to adapt quicker and continue gas exchange with minimal impact on CO₂ intake, even under water stress (Drake et. al 2015; Mano et. al 2020). Conversely, plants with fewer but larger stomata can absorb more CO₂ when water supply is abundant, maximising CO₂ intake for photosynthesis

(Mano et. al, 2020). However, these varieties are usually less adaptable to water stress. Hence, each stomatal feature offers distinct benefits and drawbacks. Understanding these properties in mango will help inform strategies for managing varieties in terms of irrigation and carbohydrate production under varying climatic conditions.

CONVENTIONAL (LOW-DENSITY) VS. HIGH-DENSITY PLANTING

It's not just variety that affects stomatal behaviour; the planting system may also play a role. Our results suggest that for 'Yess!' (NMBP 1243) leaves, stomatal size increases at higher planting density (4 x 2 m between rows and trees, respectively) compared to low planting density (8 x 6 m between rows and trees, respectively), while stomatal density remains constant (Figure 3). For 'Keitt' leaves, stomatal size remains constant, but density is higher at low planting density. This ongoing work can ultimately help determine which varieties are better suited for different planting densities, leading to more productive trees.

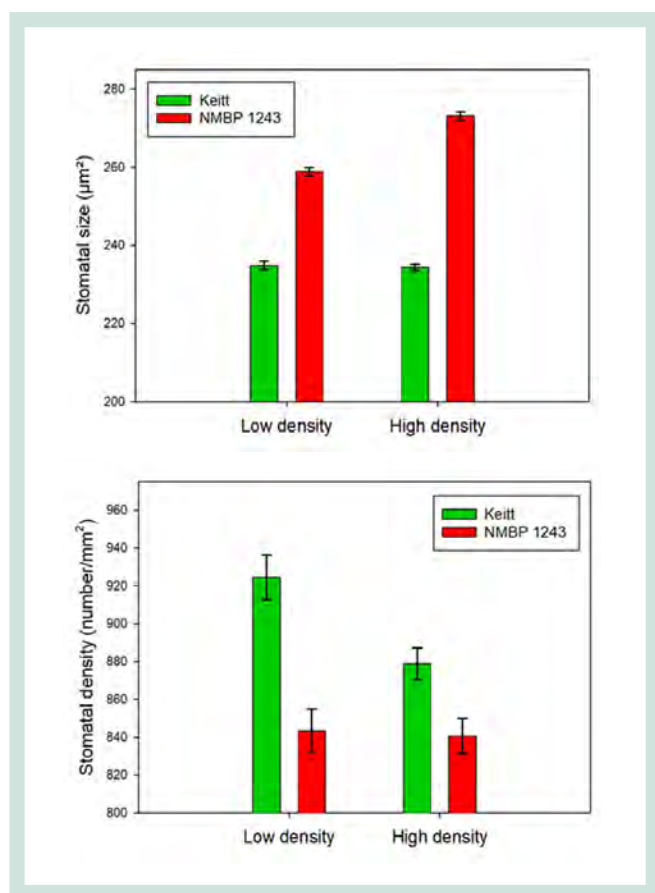


Figure 3: Difference in stomatal size and density between 'Keitt' and 'Yess!' (NMBP 1243) in low and high-density planting systems. 'Keitt' maintains the same size for both planting systems, decreasing its stomatal density in high density planting system. Whereas 'Yess!' (NMBP 1243) has larger stomata size in the high-density planting system but maintains its stomatal density in both planting systems.

STOMATA ANALYSIS

To assess stomatal anatomy, we first make an imprint of the abaxial (underside) of intact leaves using clear nail polish, which preserves the stomatal traits for analysis. The imprint is then placed on a microscope slide and observed under a microscope to capture images for determining the number and size of the stomata per unit of area (Figure 4). Counting and measuring the stomata has been streamlined using machine learning tools and software. This is important as stomatal density in mango varieties can range from 400 to over 1200 stomata per square millimetre of leaf area.



Figure 4: Stomata analysis flowchart: 1. Clear nail polish is applied to the underside of the leaf and allowed to dry. 2. Sticky tape is used to transfer the nail polish and then mounted to a microscope slide. 3. Photos are taken through a microscope. 4. The stomata are counted and measured using machine learning and computer software.

THE FUTURE

Research into stomata is important for optimising mango production and quality, particularly in regions facing water shortages and increased climate variability. An understanding of how stomata function in different mango varieties will help breeders and mango growers make informed decisions about variety selection, irrigation requirements, and even plant spacing.

Ultimately, this can help increase fruit yield while ensuring that the plants remain healthy and productive, even under water constraints. Stomatal studies are an essential part of developing more resilient crops that can adapt to future environmental challenges, ensuring a sustainable and profitable mango industry. However, knowledge about stomatal properties in mango is still scarce. Our work aims to bridge this knowledge gap and pave the way for a more resilient future for the Australian mango industry.

FURTHER INFORMATION

For more information contact Bruno Rocha Tamelini (bruno.rochatamelini@daf.qld.gov.au), or Dr. Gerhard Rossouw (gerhard.rossouw@daf.qld.gov.au), Queensland Department of Agriculture and Fisheries, Mareeba.

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The *National Tree Crop Intensification in Horticulture Program* is funded by the Hort Frontiers Advanced Production Systems Fund, part of the Hort Frontiers strategic partnership initiative developed by Hort Innovation, with co-investment from Queensland's Department of Agriculture and Fisheries, Queensland Alliance for Agriculture and Food Innovation- The University of Queensland, Plant & Food Research and the Western Australian Department of Primary Industries and Regional Development, and contributions from the Australian Government.

Mango fruit drop: How research is looking for solutions

Ryan Orr, Lindsay Shaw, Sophie Jones, Gerhard Rossouw, Harley Smith, and Geoff Dickinson

“The fruit drop is so bad some people may not even bother to pick.”

To hear this after a strong flowering was surprising, and heartbreaking. Flowering, as the first determinant of the year’s crop, is often seen as the pivotal step in fruit production. Achieving strong flowering only to be undone by extensive immature fruit drop is devastating.

Each stage in mango fruit development is susceptible to stresses, such as temperature extremes, water constraints or flooding, pest damage, overcropping, or excessive vegetative flush. Often a combination of these stresses determines how much, or how little, crop the tree will retain to harvest.

This year, unfortunately, there are many reports of excessive fruit drop. Here, we will highlight some of the possible causes of fruit drop, how several causes may apply this year, and research underway at the Queensland Department of Agriculture and Fisheries (QDAF), University of Queensland (UQ), Queensland University of Technology (QUT) and CSIRO to support the Australian mango industry.

WHAT CAUSES MANGO FRUIT DROP?

In mango and other fruit tree crops, the dropping, or abscission, of immature fruit is a natural process used to adjust crop load in response to resource availability, but it can be increased due to stress and damage to the tree or fruit. During the growing season, the tree balances the drain on resources from leaves and storage compartments (stems, branches, trunks and roots) to support the growth of flowers, fruits and vegetative shoots.

The first wave of immature fruit drop occurs just after flowering. Typically, flowering occurs in excess of what the tree can support, presumably to compensate for incomplete flower fertilisation, and damage to flowers and fruitlets. QDAF research has demonstrated that only when the majority of flower panicles are removed is harvestable yield is reduced (Orr et al., 2023). Similarly, when immature fruit were slightly thinned in early development, yields were relatively unchanged.

This is because the tree compensates by dropping fewer fruit during late stage development, and also by producing larger fruit (Yeshitela et al., 2004). Unfortunately, it is possible for events outside of natural attrition to cause extreme immature fruit drop and the tree can no longer compensate to restore maximum yield.

Immature fruit drop in excess of natural shedding occurs when a tree is experiencing stress. These stress events can take many forms and work at various geographical scales as shown in Table 1.



Figure 1: Early fruit drop in Walkamin, Queensland.

Table 1: Causes of tree stress and the geographical stage at which they may cause fruit drop.

STRESSOR	SCALE OF EFFECT
Drought	National / Regional
Flood, Cold / Frost, Heat, Wind	Regional
Physical damage, Irrigation failure	Tree / Orchard
Pest / Disease	Fruit / Tree / Orchard
Natural crop shedding	Global

The tree responds to stress in a similar way to humans. Just as our bodies release hormones, such as adrenaline, to manage difficult situations, a mango tree produces specific plant hormones that activate gene networks to cause abscission of immature fruit. As a result, immature fruit drop helps the tree conserve energy, dedicating resources to tree survival and to ensure the remaining fruit reach maturity. While there are many plant hormones that are involved in fruit development, ethylene, abscisic acid and jasmonic acid are the main hormones that control how plants respond to stress (Patharkar and Walker, 2019). These hormones are associated with the abscission of immature fruits and have been shown to increase during fruit ripening (Fenn and Giovannoni, 2021; Patharkar and Walker, 2019; Sawicki et al., 2015).

Given reports of severe fruit drop from across Queensland growing regions in 2024, it is likely the current heavy immature fruit drop is due to weather-related factors. However, isolating a single weather component is challenging, given many aspects of weather change together such as temperature with rainfall or humidity. It is also likely, at least in part, that remarkably heavy flowering and associated natural shedding of excess crop load has played a role.

WHAT RESEARCH IS BEING DONE ON THIS TOPIC?

Understanding the regulation of crop load and developing strategies to minimise immature fruit drop are the objectives of the Hort Innovation mango research and development levy funded project, Investigating the control of fruit drop in mango to support innovative solutions for Australian growers (MG21004).

This project, led by UQ, is focused on exploring molecular signals associated with immature fruit drop, such as changes in hormone activity, carbohydrate levels, and gene signalling. This knowledge is being used to develop tools to mitigate fruit drop, such as plant growth regulator treatments (PGRs). PGRs combat signals associated with natural fruit shedding during development but many are not currently registered for mango.

Two seasons of PGR trials in mango have demonstrated promise at reducing early fruit drop, with a third trial underway this season. This research is not targeted at providing resilience against environmental stresses but seeking improved understanding of the natural process of immature fruit drop, to help manage its impact. For more information on this project see the article in the winter 2023 edition of *Mango Matters* (Jones et al., 2023).

Genetics for next generation orchards (AS23003), funded by Frontiers developed by Hort Innovation, is undertaking five years of research led by QUT and UQ into the molecular mechanisms behind flowering, fruiting, and vegetative growth to improve breeding, productivity, and climate resilience. This project has a strong relationship with the National Tree Crop Intensification in Horticulture Program (AS18000), also funded by Frontiers developed by Hort Innovation.

The QDAF team has been developing intensive production systems since 2014, with the aim of optimising profitability, resource use efficiency and improving climate resilience through more intensified production systems. The research has increased the understanding of how mango cultivars produce, store, and use energy reserves, a key aspect of buffering impacts of plant stress.

Through the combined outcomes of these research projects, and better prediction of adverse weather events, the mango industry will be better placed to use pre-emptive tools to minimise fruit drop and consequential yield losses.

ACKNOWLEDGEMENTS

Investigating the control of fruit drop in mango to support innovative solutions for Australian growers (MG21004) has been funded by Hort Innovation using the mango research and development levy and funds from the Australian Government.

The National Tree Crop Intensification in Horticulture program (AS18000) and Genetics for next generation orchards (AS23003) are funded through Hort Innovation Frontiers, and contributions from the Australian Government.

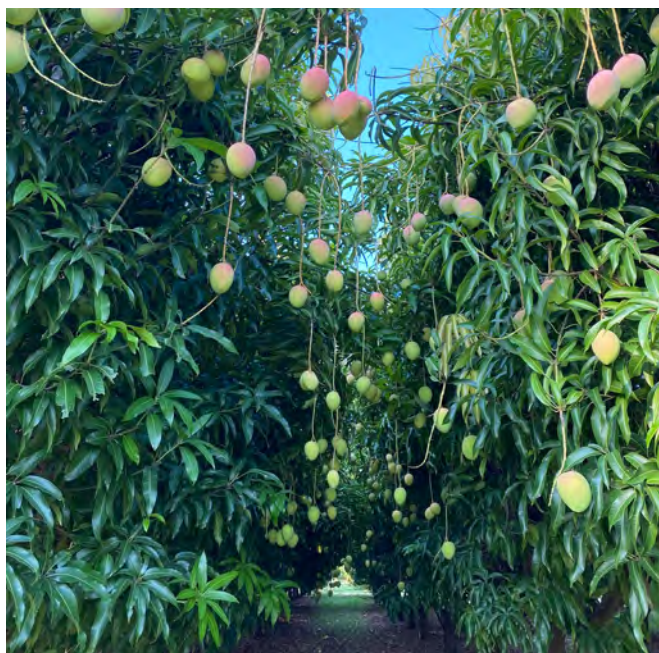


Figure 2: Researchers removing the leaves from a Keitt mango tree in Walkamin, Queensland to better understand how energy storage and leaf function regulate fruit drop and retention.

FURTHER INFORMATION

For further information on this topic please contact Dr. Ryan Orr (Ryan.orr@daf.qld.gov.au) or Dr. Lindsay Shaw (Lindsay.shaw@uq.edu.au).

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Snapshot of R&D levy investment

In this and future edition's of Mango Matters we will be providing updates on activities involving your R&D levy investment. While we often highlight mango specific projects through articles provided by researchers, there are a number of activities and programs funded by a range of Australian horticulture industries. One of these programs funded by the fruit fly impacted industries is the National Fruit Fly Council. Another program funded by pollination dependent industries is the National Bee Pest Surveillance Program.



THE NATIONAL FRUIT FLY COUNCIL

The National Fruit Fly Council (NFFC) was established to bring a coordinated approach to managing fruit fly in Australia. The NFFC collaborates in areas such as surveillance, diagnostics, research and market access

The NFFC have developed the National Fruit Fly Strategy 2020-2025 (NFFS) to provide a framework for ongoing stakeholder cooperation to support a contemporary, viable, cost-effective and coordinated national approach to fruit fly management. The NFFS applies to all endemic and non-endemic species of fruit fly.

Membership on the National Fruit Fly Council has been selected to include representatives from industry, state government, research funding bodies, and the Australian Government.

The combined experience of members of the Council ensures that the group understands and considers different crop types and fruit fly management systems from across Australia's horticulture production regions, as well as research capacity, and market access issues.

Bowen mango grower Dale Williams is a member of the NFFC and along with other industry representatives his presence ensures the practical considerations for fruit fly management are at the forefront of council discussion.

For further information, go to:

<https://www.preventfruitfly.com.au/>

NATIONAL BEE PEST SURVEILLANCE PROGRAM

The National Bee Pest Surveillance Program (NBPS) is a risk-based program undertaking surveillance at ports that have been evaluated as the highest risk of entry and establishment of European or Asian honey bees and the exotic bee mites they carry.

This risk-based approach is designed to provide early detection through activities occurring at high-risk locations and at a frequency that will detect new pests. The early detection of Varroa mite was due to the surveillance program in place.

The program conduct surveillance for 13 pests that impact honey bees (mites and beetles), and pest bees that could either carry hitchhiking parasites or could themselves cause detrimental impacts to honeybees. The program activities include upgrading sentinel hive arrays, strengthening relationships with surveillance operators and more.

Between November 2023 and June 2024, more than 2,000 surveillance activities were performed across 22 port locations. These locations included eight high risk (core) ports and 14 additional in-kind locations. Targeted surveillance for 13 priority pests including exotic and regionalised bee pests was conducted using a range of field-based activities and laboratory diagnostic techniques. In February 2024, one Varroa jacobsoni mite was found in a sentinel hive in Port Brisbane. No other exotic pests were detected during this reporting period.

AMIA Website Best Practice Resources

Best Practice Resources

As mango season is still underway for some regions across Australia, and has already ended in other regions, we would like to encourage growers to visit the Best Practice Resources section of the AMIA website, which includes a wide range of useful resources on diverse topics such as pest and disease, nutrition, canopy management, business planning, and much more.

Many of these resources are the result of the collaboration between AMIA, state and territory governments, universities and other project partners, and cover years of research in the mango space.

Growing Resources

While the resources are organised in sub-categories to ease the finding of information, there is also a search function to assist with the search for specific topics.

Available resources include information on topics such as understanding the optimum time to harvest, picking and packing training guides for new workers, grading posters and the chemical posters to assist growers with their use of chemicals.

The latest updates on chemical permits can also be found on the page “Agrichemicals for use in mangoes”.

Fact Sheets

Fact sheets can be found in each of the sub-categories.

Other resources include webinars and recorded video presentations that were presented at roadshows, available for our growers to view at any time, to stay updated on the latest R&D updates in the industry.

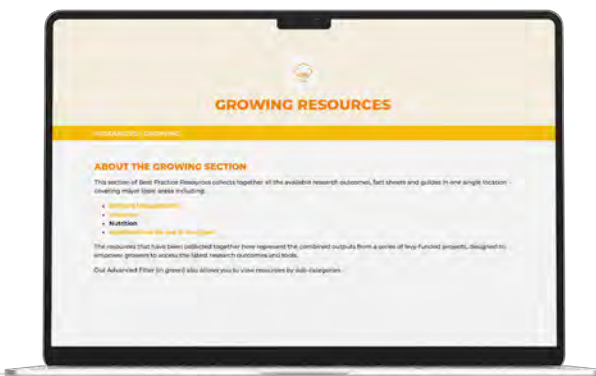
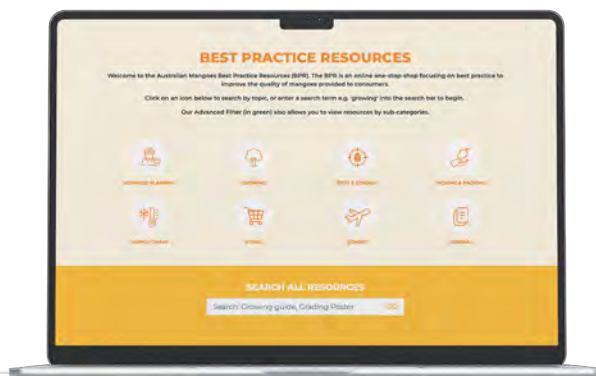
Members Only Resources

Our Members Only resources are also available for download, such as the Cost of Production spreadsheet to help growers keep track of their business operational costs.

The Mango MRLs app, which is free for AMIA members, can be downloaded from the app store for both Android and Apple phones.

The AMIA welcomes any feedback to ensure that the content of the resources stays relevant, up to date, and easily accessible to our growers.

Should you require any assistance with your search for information, please do not hesitate to contact the AMIA team.





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