# MANGÈMATTERS

APRIL 2019 / VOLUME THIRTY-FIVE



**Celebrate, Collaborate and Create** with the industry's best minds at the biennial Australian Mangoes Conference in Darwin.

**PROGRAM OUTLINE ON PAGE 2** 

# 12<sup>TH</sup> BIENNIAL AUSTRALIAN MANGOES CONFERENCE

CELEBRATE Collaborate Create

### 14-17 May 2019 Darwin

# REGISTER TODAY

Join the Australian Mango Industry as we celebrate the achievements of our industry over the past few years, collaborate on issues and ideas and create a plan for the next few years.

The conference will focus on a range of key topics relevant to all mango industry stakeholders!

### **CLICK HERE TO REGISTER**

Conference Program Outline can be found on our website. Further details to come shortly.



# **KEY TOPICS**

### **Biosecurity**

- + Market access—interstate and overseas
- + Surveillance
- + Emergency Plant Pest Response Deed

### Export

- + Research and development (R&D)
- + Protocol process

### Harvesting

- + Decision to pick
- + Resin canal
- + Robotics
- + Harvest aids
- + Packing

### Marketing

+ Sales and marketing in domestic and export markets

### **People and Labour**

- + Development programs
- + Labour hire

### Processing and Value-add

- + ACIAR project update
- + Developments in mango processing: juice, puree, drying

### Production

- + Genetics
- + Canopy management
- + Pest and disease management

### Supply chain

- + Temperature management
- + Real time tracking



### Reflecting on another successful mango marketing campaign

As the 2018/19 season draws to an end, we reflect on a very successful year with a huge buzz from the general public, media and influencers alike.

#### **MORE ON PAGE 16**

#### Australian Mango Industry Association (AMIA) Contact Details

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### CONTENTS

- **4** CEO & CHAIRMAN REPORTS
- **6** DIRECTOR REPORTS
- 8 AMIA AND INDUSTRY NEWS

Chemical updates

Tropical fruit processing workshop

Project to grow Northern Australia mango exports to China

Growers gather for Gingin mango field day

Hort Innovation update

Agsafe update

Australian Mangoes visit the NT

**14 PR & MARKETING** 

Building Australian mangoes export

Consumers, influencers and media...

#### **18** RESEARCH & POLICY

Management practices to reduce lenticel damage on mango fruit

Conveyor Supplies NQ—free site visits in NT

Check fruit for red banded caterpillar

A clean shed floor is a good look

Maximising fertigation reuslts

#### 24 PEOPLE & EVENTS

Nastasi family featured in Growcom's *Fruit and Vegetable News* 

Piñata Farms named Horticulture Farmer of the Year

NT mango grower featured on *Landline* 

### WANT TO CONTRIBUTE?

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.

# CEO'S REPORT



Robert Gray Chief Executive Officer, AMIA

Email: ceo@mangoes.net.au Mob: 0418 737 861

As we come to the end of another huge season (it is expected to be the second biggest on record!), no doubt many of you are now enjoying a little reprieve, before getting stuck into preparations for the next one. We commend each and every one of you, throughout the supply chain, for delivering quality fruit to our customers.

As the season finishes up, the AMIA team have been busy preparing for the 12<sup>th</sup> Biennial Australian Mangoes Conference! The final program will be available soon and will focus on a range of key topics, including; biosecurity, export, harvesting, marketing, people and labour, processing and value-add, production and the supply chain. If you haven't already registered, we encourage you to **register now** to secure your spot, at what is sure to be another fantastic event. "The final [conference] program will be available soon and will focus on a range of key topics, including; biosecurity, export, harvesting, marketing, people and labour, processing and value-add, production and the supply chain."

- Robert Gray

The team has also been busy attending a number of industry meetings. In mid-February we visited the Northern Territory. With industry stakeholders across Australia we discussed the best practice management project and the mango biosecurity project (with Plant Health Australia). We can now announce that **supply chain temperature management**, **decision to pick** and **orchard management** will be the three key areas of focus for the best practice management resource. We look forward to sharing further project updates with you at the conference and in future communication.

February also saw us hosting (with Griffith University) the ACIAR agribusiness research and development opportunities for tropical fruit processing workshop, in Brisbane. The workshop focused on driving Australian processing outcomes. You can read more on page 9.

On a final note we would like to welcome back our communication manager Jessica Mitchell, who returned from maternity leave in January. Kate Gowdie who covered Jessica's position will continue working with Australian Mangoes on the conference! We wish you a happy Easter and look forward to seeing you soon!



# CHAIRMAN'S REPORT



Ben Martin Chairman, AMIA Email: bjmenterprises@live.com

Mob: 0400 125 928

With the bulk of the mango harvest completed except for the southern regions and some late varieties in other regions (at the time of writing), it is timely to review the outcomes of the 2018/19 season against the objectives set in our strategic and marketing plans. There have been a number of factors which have impacted on grower returns this season including weather conditions—heat and/or rainfall, and production volumes.

The timing and effectiveness of market promotions will be reviewed to ensure maximum industry benefit is achieved. The importance of the mango production forecasting data cannot be overstated, and we will review the effectiveness of the data collection and market engagement.

While returns for the late season areas and varieties have improved, grower comment to date is that the market performance for the December period was below par. Overall market performance must improve and strategies for improvement identified.

Collectively as an industry, we must strive to identify those pathways which will strengthen the resilience of the mango industry in coming seasons.

While speaking of weather events, I must acknowledge the extremes that many areas have experienced this season and the resulting hardships. For many, it has been a challenging start to 2019.

In view of the increasing market access for imports to Australia, the development of a practical and effective biosecurity plan is essential. Our industry must be protected from incursions of exotic pests and diseases and I expect a draft plan will be circulated for industry comment in coming months.

The 12<sup>th</sup> Biennial Australian Mangoes Conference will be conducted from 14-17 May 2019 in Darwin. The conference agenda will ensure this conference builds on the success of the 2017 conference that was held in Bowen, with a good blend of formal conference and field activities planned. Further conference details can be obtained from our CEO, Robert Gray.

Conference registration is open, so make sure you register now via <u>www.industry.</u> <u>mangoes.net.au</u>. I look forward to meeting you in Darwin.

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# DIRECTOR REPORTS

#### SOUTHERN WESTERN AUSTRALIA



#### David Morcombe M: 0414 240 709 E: dw.morcombe@gmail.com

As this season draws to an end, we are looking forward with optimism to the next one. The AMIA roadshows in Carnarvon and The South West has helped promote the best growing, harvest and post-harvest procedures. The message that quality is our future and we all need to do our part to deliver quality mangoes to market is spreading.

**SOUTH WEST:** In the Gingin area we started off the year in early January with an impromptu field day at my orchard as Peter Johnson was in the area. He addressed local issues regarding picking and post-harvest arrangements. We also walked through the orchard as we discussed local growing matters. Thanks to Carolina Brander of the West Midlands Group for recognising the opportunity and organising it.

The harvest in Gingin has been very variable in timing, with the coastal parts coming in early as usual but the more inland parts being later than usual. Overall the yields have been significantly lower than last season, due to all growers having some seedless (parthenocarpic) fruit (nubbins we call them locally) and sunburn also affecting more than 20 percent of crop—it just takes a couple of hot dry days to do the damage.

Growers would like more information about the economic viability of different sunburn alleviation techniques.

Thanks to Neil Lantzke for visiting orchards and assisting growers to assess their crop maturity, with the NIR gun made available through AMIA. **CARNARVON:** Carnarvon's season has been the latest on record. At the time of writing, (early March) there is still some fruit being picked. The quality has been decent, and prices have been firm, so overall it has been a good season, though I do acknowledge that sunburn has also been an issue in Carnarvon too (as is usual for the region).

### FAR NORTH QUEENSLAND & NORTH QUEENSLAND





2018/2019 has been a year most growers would like to leave behind. At the time of writing Mareeba/Dimbulah have almost completed harvest and most growers are preparing for the next season. It is only around the corner.

From 14-17 May we are having the 12<sup>th</sup> Australian Mangoes Conference, in Darwin. I urge all growers to come along and participate. There is a wealth of knowledge to be gained from attending these conferences. It also puts growers, wholesalers, retailers and all sectors of the industry in touch and working together. I have been attending mango conferences for about 15 years and I have gained true knowledge of where the industry is going. It is also great to voice your opinion on any current concerns you may have. So, come along and I hope to see you all there.



Raymond Courtice M: 0447 519 795 E: raymondcourtice@gmail.com

With low volumes of late season varieties still been harvested (at the time of writing) the bulk of the 2018/19 mango season has finished up slightly earlier than usual in the Dimbulah Mareeba region due to severe heat waves through late November.

With the region's early finish to the season and an early wet season, which has seen rain restocking the dam levels, it has allowed a strong flush and set up for the 2019/20 season.

With predictions of a possible dry autumn, the chance of a colder than usual winter is possibly ahead of East Coast growers. I am looking forward to seeing everyone in Darwin at another great mango conference.

Continued page 7



Continued from page 6

#### SOUTHERN QUEENSLAND & NEW SOUTH WALES



Karl Gygar M: 0481 591 470 E: kgygar@gmail.com

The season is fast drawing to a close with some late varieties still being harvested (at the time of writing). For those not harvesting, the usual post season activities are underway—including some muchneeded rest and relaxation.

Some areas of the region have been heavily impacted by weather this year with hot dry conditions posing large challenges. Fires have ravaged large areas and the continued lack of rain is now impacting dam and river levels. Fingers crossed we get some let up in the near future and widespread rain for those who need it.

#### I would like to draw everyone's attentions to the upcoming mango conference in Darwin. This will surely be a great event! There will be a number of insightful presentations as well as opportunities for industry members to network. If you have not yet registered for the event, I would strongly recommend that you do so.

The event is also a great opportunity for you to speak with the AMIA team. We are always interested in hearing your thoughts about the industry and discussing ideas around how we can drive growth and profitability for all.

I look forward to seeing you all there.

#### NORTHERN TERRITORY & NORTHERN WESTERN AUSTRALIA



Gavin Scurr M: 0407 714 549 E: gavin.scurr@pinata.com.au

Katherine has had a pretty poor wet season so it will be interesting to see how the trees perform this coming season. This has meant that we have had to irrigate throughout summer which has increased our production costs. Despite the drier wet season, the trees are looking pretty good with a bit of uneven flush being the only concern. Hopefully we get a longer winter which will help achieve a good flowering.

The renewing of water licenses in the Katherine region is happening at the moment which is causing most growers a lot of concern. The government is wanting

"I would like to draw everyone's attentions to the upcoming mango conference in Darwin...There will be a number of insightful presentations as well as opportunities for industry members to network. If you have not yet registered for the event, I would strongly recommend that you do so."

- Karl Gygar

to significantly reduce water allocations, which could stifle ongoing development in the region. Hopefully common sense prevails and a balance between the environment and sustainable farming can be achieved.

With this year's mango conference being held in Darwin it is a good chance for interstate growers to come over and have a look at the industry in the Northern Territory. It is also a chance for local growers to have a break from your farms for a couple of days to learn what is happening throughout the mango supply chain. I know for myself when I attend industry conferences I come away with a more positive outlook. I look forward to catching up with you there.



Han Shiong Siah M: 0423 444 598 E: han.siah@tropicalprimary.com

It been a quiet few months since my last report. Many farmers in the Northern Territory (NT) are now coming back from their holidays. Some are getting ready for next season.

This wet season in the NT has been a very dry and hot couple of months, with a lack of rain and higher than normal temperatures. It is too early to know if we will get our final burst of monsoonal rain. If we don't get it, we are looking at very dry year ahead with water availability an uncertainty. It was reported that as of the end of February, ground water levels were at a similar level to what we expect them to be at in August. We do hope that we don't face any water restriction in the next couple of months.

Darwin is hosting the 12<sup>th</sup> Australian Mangoes Conference from 14-17 May, we do hope to see many familiar faces at the conference as well as some new faces. The conference theme is Celebrate, Collaborate and Create—I hope to see you all there to do just this!

Continued page 8

### DIRECTOR REPORTS (cont'd)

### NORTHERN TERRITORY & NORTHERN WESTERN AUSTRALIA



#### Geoff Warnock M: 0438 884 842 E: gullivers@wn.com.au

**KUNUNURRA:** Production from the region was down a little on estimations, mainly due to the difficulty in predicting flowering, as it was continuous from May to August. However, constant reasonable prices were achieved for good quality fruit.

Over the past few months there have been a number of enquiries from various sources looking to establish a supply of fruit from the region for export markets. This has provided new opportunities for growers from the region.

To date we have received just 50 percent of the average rainfall, for the season, this could have some influence on the coming season, though most of the trees are looking good and flushing well.

With the 12<sup>th</sup> Biennial Australian Mangoes Conference coming up in May in Darwin we encourage growers to attend, to hear about new developments occurring in the industry.

# AMIA AND INDUSTRY NEWS

# **Chemical updates**

The following permits have been issued by the Australian Pesticides and Veterinary Medicines Authority (APVMA):

Permit ID	PER87232
Description	Etoxazole / Mango trees / Tea Red Spider Mite
Date Issued	16-Jan-19
Expiry Date	31-Jan-22
Permit Holder	Hort Innovation

Note: PER87232 will replace PER80893 that expires 31-Mar-19.

Permit ID	PER87164
Description	Dimethoate / Specified Citrus and Tropical and Sub-Tropical Inedible Peel Fruit Commodities / Post-harvest Dip or Flood Spray / Various Fruit Fly Species
Date Issued	1-Mar-19
Expiry Date	31-Mar-24
Permit Holder	Hort Innovation

#### Note: PER87164 will replace PER13158 V9 that expires 6-Mar-19.

For further details visit the industry website and search for Chemical update: <u>https://www.industry.mangoes.net.au/resource-collection</u>.

All efforts have been made to provide the most current, complete and accurate information on these permits, however we recommend that you confirm the details of these permits at the following APVMA website: <a href="https://portal.apvma.gov.au/permits">https://portal.apvma.gov.au/permits</a>.





## Tropical fruit processing workshop

AMIA and Griffith University hosted the ACIAR Agribusiness research and development opportunities for tropical fruit processing workshop on 19 and 20 February 2019 at the Griffith University South Bank campus, Brisbane.

Participants came from Queensland, Northern Territory and Western Australia, representing industry associations, government bodies, private industry, growers and researchers. The breadth of knowledge, the entrepreneurial stories and workshop engagement was remarkable over the two days. The workshop aims were to recognise trends and key issues affecting tropical fruit processing, identify new processes and products, and determine priorities and next steps for future research and development projects.

Results from the broader ACIAR Mango Agribusiness research program will be presented at the <u>12<sup>th</sup> Biennial Australian Mangoes Conference</u>.

For further information about the workshop please contact:

AMIA: Samantha Frolov, idm@mangoes.net.au

Griffith University:

Prof. Robin E Roberts, robin.roberts@griffith.edu.au







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### Project to grow Northern Australia mango exports to China

A new project promising to boost northern Australian mango exports into China by 200 per cent within five years was announced by the Cooperative Research Centre for Developing Northern Australia (CRCNA) in January.

For the full story visit: http://www.crcna.com.au/news/.



## Growers gather for Gingin mango field day

As peak mango season approached in the Gingin region, local producers gathered on Friday, 11 January to discuss the production forecast, quality, marketing and new challenges. Renowned mango consultant, Peter Johnson, presented to producers of the Southern Mango Growers Group.

Organised by West Midlands Group, the event gave growers the opportunity to tour David Morcombe's Gingin orchard, Ambrosia, and trade feedback, knowledge and this season's experiences.

For more information, visit or follow: Facebook;

<u>@NorthernValleysAP</u>, Instagram; <u>@northernvalleys.agpr</u>, and Twitter; <u>@NValleysAP</u>, and as always, you can contact Carolina Brander: <u>carolina.brander@wmgroup.org.au</u>.



### Hort Innovation update

### LATEST HORTICULTURE STATISTICS HANDBOOK OUT NOW

The most comprehensive and contemporary data available on all sectors of the Australian horticulture industry is now available through the release of the 2017/18 Horticulture Statistics Handbook.

Released by Hort Innovation, the Handbook features information drawn from several supply chain and trade sources and it includes data on more than 70 horticultural products including fruit, nuts, vegetables, nursery, turf and cut flowers.

To view the mango statistics <u>click here</u> and go to page 136.

#### HORT INNOVATION WEBSITE

Hort Innovation has launched a new, grower focused website. If you have any comments about the new website, contact Jocelyn.Mason@horticulture.com.au.

Click here to view it now!

#### HORT FUNDED FELLOWSHIPS— APPLICATIONS CLOSE SOON!

Applications close shortly for three Hort Innovation funded Churchill Fellowships that will enable recipients to travel the world for four to eight weeks to access industry related knowledge not readily available in Australia.

#### Applications close 30 April.

For more information click here.

# Agsafe update

#### LEVY INCREASE

The Australian Competition and Consumer Commission (ACCC) has authorised Agsafe (on behalf of AgStewardship Australia) to increase the levy on eligible AgVet chemicals from four cents per litre or kilogram to six cents.

This is the first increase in the levy since inception in 1998 and will come into effect on the 1 July 2019.

The increase in levy funds will maintain the sustainability of programs, allowing *drumMUSTER* and ChemClear programs to continue to deliver quality stewardship services to rural communities as well as ensuring a sustainable future in recycling.

Please click here for further details.

### AGVET CHEMICAL COLLECTION JUNE 2019 Queensland property owners can register their unwanted or

Queensland property owners can register their unwanted or obsolete agricultural and veterinary chemicals for **Agsafe's ChemClear** collection which is hitting the road in June.

A collection has been scheduled for Queensland, commencing in **June 2019** and chemical users have **until 19 April to register their unwanted chemicals**.

For more information please contact the ChemClear Coordinator, Ziggy Hilliker, on 02 6206 6810.

Agsale







Mango Fund snapshot





### Australian Mangoes visit the NT

Robert and Marine joined Sarah in the NT in February to meet with various industry stakeholders to discuss the Building Best Management Practice Project (MG17000) and mango biosecurity (led by Plant Health Australia).

At the best practice meeting, it was decided that **supply chain temperature management, decision to pick** and **orchard management** will be the three key areas of focus for the best practice management resource.

Whilst up in the NT they also popped into the ABC Radio Darwin studio, to chat with NT Country Hour presenter Matt Brann, about what the mango industry has been up to of late.

If you missed the interview, you can listen <u>here</u>.

Further project updates will be shared at the conference and in future communication.

### Your local fund has grown.

AustSafe Super has merged with Sunsuper, and we're now stronger together as one fund committed to rural and regional Australia. With more than 1.3 million members and \$60 billion in funds under management\*, Sunsuper is one of the nation's largest and fastest-growing super funds. We are also proud to be named as *Money* magazine's Best Super Fund Manager for the second year in a row.



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- > Brilliant red blush
- > Rich sweet flavour
- > Small seed
- > Harvests earlier than KP
- > Excellent shelf life that is longer than KP
- > Robust and handles transport better

We have developed two new mango varieties (RA17 and R10-8) with superior flavour and appearance. Their robust quality can withstand all aspects of the supply chain giving a significantly better shelf life. Both varieties will be marketed under the Lady Jane brand and will be available in semi-commercial quantities this October.

These varieties were developed in partnership with an expert mango breeder in the Northern Territory, a cross of Irwin (female) and R2E2 (male). We hold the plant breeders rights globally and are looking for mango growers to participate in the planting program. If you are interested in planting these varieties or would like more information, please contact Richard Byllaardt: richard.byllaardt@nutrano.com.au or phone 0418 807 636.

Nutrano Produce Group



# **PR & MARKETING**

## Building Australian mangoes export

Building new markets takes time and tenacity. It does not happen in a single season and it does not happen as a result of individual performance. Our ability to create a strong demand for Australian mangoes in new and emerging markets is dependent on our brand reputation. Together we are working, year on year, to create an excellent reputation for Australian mangoes. A reputation for producing quality mangoes that consistently look and taste superior to any other mango on offer.

During the 2018-19 season promotional programs were created in collaboration with exporters, importers, and retailers in Singapore, Hong Kong, South Korea, New Zealand, the USA, and a trial program in the Middle East.

Our objective was to position Australian mangoes as a premium experience for which consumers in our target markets will happily pay a premium price. Markets and retail partners are chosen using the following criteria:

- A mix of protocol and non-protocol markets.
- A mix of established and emerging markets.
- A robust supply chain capability delivering a consistent quality experience.
- Alignment with retail partners that target affluent consumers who are prepared to pay a premium price for a great quality mango.

The consumer promotions varied by market and included a mix of point of sale (POS) material, in store sampling, advertising, public relations, social media, and an Australian Mangoes sales challenge—that encouraged, recognised and rewarded excellence in store execution.

All markets were supported with a strong engagement campaign including pre-season planning meetings, handling and merchandising training, regular work in progress meetings (WIPs), and in-market visits. All promotional programs were executed during the peak supply period of November, December and January.

To find out more about the exciting developments in our overseas markets be sure to register for the 12<sup>th</sup> Biennial Australian Mangoes Conference where export will feature as a key topic. We look forward to seeing you in Darwin from 14-17 May 2019.

For more information contact Treena Welch at AMIA: marketing@mangoes.com.au, or 0417 001 253.



Singapore









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#### Middle East



### South Korea



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Facebook campaign in South Korea





ANC

### Consumers, influencers and media enjoy their last chances to slice, dice and demolish this season

As the 2018/19 season draws to an end, we reflect on a very successful year with a huge buzz from the general public, media and influencers alike. We've received a total of 256 hits with media, reaching almost 14 million Aussies.

#### PR

Mangoes featured on TV screens across Australia, from the *WIN Network* interviewing Raimond Bin on his farm, *Studio 10* showcasing the mango budgy smugglers, a celebrity chef cooking up his Christmas mango recipes on *The Today Show* and friend of Aussie Mangoes, <u>@schoollunchbox</u> demonstrating his mango creations on *Sunrise*. It was difficult to miss the hype of mangoes this season!

In print, mangoes had page-long features across *Better Homes and Gardens*, *Delicious, Super Food Ideas, Taste Magazine, Australian Women's Weekly,* and *Woman's Day,* all urging readers to get creative with Aussie mangoes over Christmas time, and throughout the summer.

The web felt the buzz of mango season, too, with recipe and season coverage from *lifestyle.com.au*, *Best Recipes*, *9Kitchen*, *body* + *soul*, and *delicious.com.au* to name a few!









### **INFLUENCER KITS**

Throughout the season we sent 20 lucky influencers fresh trays of mangoes, who collectively posted about Aussie Mangoes over 280 times. *Nourish Naturally* was the most prominent influencer, who shared countless favourite moments with the king of fruit with her 159,000 followers. *Tess Begg* also shared her love for mangoes to her 280,000 followers, as well as *The Sunkissed Kitchen* with her 174,000 fans. Collectively, the influencers used this season had a huge following of over 1.8 million.



#### tessbegg - forow

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On Facebook, we reached almost 3 million individuals, and received over 82,000 engagements on the Aussie Mangoes page. On Instagram, we received 17,500 engagements.

### DIGITAL

We focused on making sure the king of fruit was across Australians' screens nationwide with our digital campaign. On Facebook, we reached almost 3 million individuals, and received over 82,000 engagements on the Aussie Mangoes page. On Instagram, we received 17,500 engagements. We post beautiful mango content on Facebook. com/aussiemangoes and Instagram at @aussiemangoes. Join our conversation!











### **MESS-TIVAL**

Aussie Mangoes kicked off the first weekend of summer with the epic celebration that is Mess-tival and the much anticipated exclusive launch of the Aussie Mangoes and Budgy Smuggler collaboration! We had a fantastic weekend celebrating our dedicated growers, and showcasing four main mango varietiesthese were sampled a record-breaking 9,250 times, contributing to making the day a huge success. To encourage Australians to join in on the fun, we saw 30 pieces of pre-event coverage, from publications such as news.com.au, lifestyle.com.au and body + soul. Moreover, Bondi Radio promoted the event over the waves to the local area, driving even more footfall down to the event. To capture all of the fun on the day, The Today Show streamed six segments live to Australian televisions.



### **MANGO EMOJI LAUNCH**

Australian Mangoes felt extra fruity this mango season with the arrival of the muchanticipated emoji! The long-awaited mango emoji is now available across all iOS and Android devices. The launch provided a digital way for Australia to demonstrate their love of mangoes, and it was covered by media and our influencers alike. Everyone was living, breathing and typing mangoes this season!







For more information contact Tate Connolly at Hort Innovation: tate.connolly@horticulture.com.au, or (02) 8295 2397.

# RESEARCH AND POLICY

### Management practices to reduce lenticel damage on mango fruit

The 2018/2019 mango season saw some extreme weather events, especially in The Tablelands where the region experienced high temperatures followed by extreme rainfall. AMIA thought it a prudent time to give growers a refresher on reducing lenticel damage; both on-farm and in the packing shed.

The following article was prepared by Roberto Marques and Peter Hofman, Maroochy Research Facility (MRF), Department of Agriculture and Fisheries (Queensland). These recommendations are based on overseas reports and research by the Department of Agriculture and Fisheries (Queensland).

Lenticel damage (LD), also called discolouration or spotting, is a skin defect that can severely reduce fruit visual appearance and marketability of many mango cultivars. It is common in most mango producing growing countries.

LD is caused when the tissue in the lenticels (breathing pores) on the skin swells and becomes pronounced, resulting in small round or star-shaped spots scattered over the skin. The cells around the lenticels may get discoloured, producing brown or black spots, or red or green halos. LD often becomes worse with longer storage, and as the fruit ripens and ages.

### WHAT CAUSES LD?

The exact mechanisms causing LD are still unclear. It may be through entry of water and/or contaminants into the lenticels, causing dark-coloured (phenolics) compounds to form in the cells around the lenticel as a stress-related defence mechanism. LD may also be induced by sap components (e.g. terpenoids) 'escaping' from the resin canals near the lenticels, causing cell membrane rupture that allows the phenolics to mix with the enzymes that cause tissue browning.



Mango fruit affected by LD (top left) and close-ups of typical lenticel types on mango fruit skin: healthy (top right), affected by LD brown (bottom left) or red halos (bottom right). Photos taken by the postharvest research team at MRF.

### KEY FACTORS INCREASING THE RISK OF LD

- Cultivar: Some cultivars are more sensitive than others, likely because they have larger lenticel cavities, less wax/cuticle protection of the cells in the lenticel, or more lenticels on the skin.
  For example, Calypso fruit have more lenticels per cm2 of skin than do KP, R2E2 or Honey Gold.
- Wet growing conditions: Cool, humid and wet (due to rain or excess irrigation) conditions, especially around harvest, generally increases the risk of LD.
- Larger fruit size: Larger fruit within a cultivar often have more LD. This can happen when there are lots of leaves for each fruit, e.g. after low fruit set, topworking of trees or excess nitrogen.
- More mature fruit: Generally more LD develops as the fruit matures (late-harvested fruit).
- Harvesting/packing: LD tends to increase gradually as the fruit progress through the picking to packing process. Practices that expose the fruit to water (e.g. de-sapping solution, washing) and excess rubbing (e.g. brushing) can increase LD. Irradiation can also significantly increase LD.

#### MANAGEMENT PRACTICES TO HELP REDUCE LD

LD can be challenging to manage due to the various factors involved. Practice change at a number of steps might be required. For example:

- During fruit growth
  - Pay special attention to fruit from recently top worked trees, when weather events reduce fruit set, resulting in a high leaf to fruit ratio, and avoid using excess nitrogen.
- Harvesting
  - Adjust harvest scheduling to avoid harvesting fruit that is too mature.
  - Regularly inspect the harvest aid trough, so both floating and sinking fruit stay in the detergent solution less than two minutes, or one minute if the fruit are very mature.
  - Do not harvest during rain if at all possible. There are no research-

based guidelines for dealing with rain events during harvest, however general advice includes: wait for one (fine weather) or two days (overcast) before harvesting if at least 20 mm falls over about 12 hours, or two to three days if at least 50 mm falls over 24 hours or more. Of course, this can be difficult due to the typically short harvest period for mangoes.

- If the harvested fruit become wet, move bins to a covered area as soon as possible, and remove the bin cover to dry the fruit.
- Postharvest handling
  - Aim to pack on the same day of picking (ideally within 6-12 hours) to shorten the time sap stays on the fruit.
  - Ensure fruit are removed from wet dumps within five minutes.
  - Do not use additional water over brushes if a wet dump is used.

- Limit brushing to less than two minutes, and just enough to remove dirt, residues etc.
- Clean brushes at least daily and replace them when they get worn, stiff or difficult to clean.
- Maintain the cold chain at all times to avoid condensation on the fruit.
  For example, pre-cool the truck to transport temperature before loading and load it as quick as possible.
- Avoid excessive (forced) air movement over the fruit during ripening.
- Ripen and hold fruit at recommended temperatures.
- Minimise the duration between packing and retail.

To hear more from Peter Hofman, be sure to register for the 12<sup>th</sup> Biennial Australian Mangoes Conference. Visit industry.mangoes.net.au to register now!

#### ADVERTORIAL

# Conveyor Supplies NQ— Free site visits in NT

Article provided by Conveyor Supplies NQ

### All aspects of picking, packing or processing fruit requires conveying systems.

Conveyor belts, driven rollers and systems are needed to transport fruit from the field, through the packing system to the pallet stacker.

Conveyor Supplies NQ based in Townsville has been supplying all aspects of conveying equipment to a growing number of producers in Northern Australia for over 20 years. Fruit brushes have been supplied for over 10 years. We are set up as a "hardware shop" for growers of many types of produce.

Our manager Brian Armit will be available for free site visits to discuss or quote on conveying requirements in the NT both pre and post conference. To arrange a visit contact Brian: phone 07 4755 0277, mobile 0408 060 908 or email <u>brian@</u> <u>conveyorsuppliesnq.com.au</u>. With a proven service record, strong support from national suppliers and great transport services into the NT from Townsville, we are ideally placed to meet your needs with both service and advice.

We look forward to meeting you in Darwin.

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site visits in NT

### Check fruit for red banded caterpillar

Red banded mango caterpillar (RBMC; Deanolis sublimbalis) is considered a serious threat to Australia's mango industry. Though, RBMC has not reached any commercial mango plantations in Australia and poses no immediate threat to the mango industry, the pest has caused commercial losses in the order of 10-15% in tropical parts of Asia. It has also been detected at several locations near the northern tip of Cape York Peninsula.

Officers from Biosecurity Queensland regularly survey Cape York Peninsula for RBMC, however, it is also important that growers keep watch for it given the potential impact of this pest. The best time to look for red banded mango caterpillar is during the fruiting period.

Adult RBMC are fawn coloured moths which lay their eggs on the stalk of the fruit. After 7-8 days the eggs hatch into larvae and tunnel into the flesh of the mango.

RBMC larvae are plump and glossy with distinctive bright white and dark red bands. They also have a black collar near the head.

Larvae feed for 15-20 days and pupate in the soil for around 20 days, before emerging as the adult moth which can lay more eggs.

It can be hard to find early signs of infestation, but there may be small darkened boreholes on the fruit caused by entering larvae. A more obvious sign of infestation is liquid leaking from the mouth of the caterpillar tunnel that trickles down to the tip of the fruit and accumulates. Although almost clear when fresh, the liquid darkens and appears as a dark streak on the skin leading to a dark spot at the fruit tip.

The dark streaks on the mango skin can look like those caused by mango pulp weevil (Sternochetus frigidus) and mango seed weevil (Sternochetus mangiferae).

Damaged fruit may then be attacked by fruit flies or decay organisms and fall from the tree prematurely.

To inspect for RBMC, cut fruit open to expose the inside of the seed. More than one larva can be present in each fruit and they will most likely be seen tunnelling in the seed but can also be present in the flesh.

As well as being observant and monitoring your mangoes for anything unusual there



Above: Cut fruit open to expose the inside of the seed to inspect for RBMC larvae which have distinctive dark red bands and a black cap. Photo: DEEDI.

are several things you can do to protect your mangoes from RBMC.

The pest is spread through the movement of infested plant material, so it is important to get plant material only from clean certified sources.

On-farm biosecurity practices such as ensuring that vehicles and equipment are washed before entering your property and keeping records of who enters and leaves your farm may also reduce the spread of pests and diseases to your property.

If you think you have seen RBMC or anything else unusual report it to the Exotic Plant Pest Hotline on 1800 084 881.

Article supplied by Plant Health Australia. For further information visit: planthealthaustralia.com.au.



Adult moths are fawn coloured. Photo: Pest and Diseases Image Library, Bugwood.org.



Darkened borehole on the fruit caused by entering larvae. Photo: DEEDI.



#### ADVERTORIAL

## A clean shed floor is a good look

Article provided by Brush & Broom Supplies NQ

# How do you keep a busy packing shed floor clean efficiently and effectively?

Use a battery operated floor sweeper or scrubber. They efficiently collect dust and debris in a hopper that can be deposited away from the action. The broom relocates the problem.

One of our first sales over 10 years ago was to a large melon shed with a major problem each year cleaning and repairing dirty condenser fans in the cold rooms—they would be covered in dust from forklifts. The solution was a ride-on battery vacuum sweeper. It is still operating today, along with a variety of machines at many packing sheds in North Queensland.

At The 12<sup>th</sup> Biennial Australian Mangoes Conference Brush & Broom Supplies NQ will be providing a ride on sweeper and a walk behind vacuum sweeper for you to test drive and trial at one of the field day farm sites.

Our manager Brian Armit will be available for free site visits to discuss or quote on cleaning equipment in the NT both pre and post conference. To arrange a visit contact Brian 07 4755 2366, 0408 060 908 or brian@brushandbroomsuppliesnq.com.au.

We look forward to meeting you in Darwin.

Visit www.brushandbroomsuppliesnq.com.au for further information.



# Maximising fertigation results

Article provided by Shane Singh – AgriHort Solutions

Fertigation is a broad term that means delivery of dissolved fertiliser through irrigation water. It is a great technology that provides growers with the flexibility to deliver nutrients to the crop when required; rather than according to work schedule. Fertigation combined with a good nutrition plan targeting the nutrients needed for set, sizing and fruit quality, produces apparent results at harvest that extend through the postharvest supply chain.

Whether you are considering fertigation or already have a system in place, your irrigation infrastructure is the most important thing to ensuring uniform delivery of fertiliser to your crop. Uniform delivery is the key to successful fertigation, without it you may find production variability within blocks and not all irrigation systems are designed to operate fertigation systems.

So, if you are considering fertigation as an innovative technology for your enterprise or you already have a system in place here are some points for your attention:

- Technology In many areas, this is not new technology, however, in areas that have traditionally relied on high rainfall, irrigation and fertigation are now being investigated as a way to increase yield and reduce biannual bearing.
  - a. Irrigation type Drip irrigation effectively delivers water and nutrients directly to the root zone, however, if substantial volumes of fertiliser are applied, root damage can occur. Low level sprinklers are suitable for fertigation; they deliver water and nutrients to a larger area outside the root zone which is largely uncontrollable. Sprinklers have shown benefits with orchard cooling and should not be dismissed based solely on fertigation requirements.
  - **b.** Fertigation type There are many fertigation systems in the market place, most systems can be classified into three fertigation types:
    - *i.* Bulk dosing As it implies you fertigate a large amount in a brief period, this can be daily, weekly, or monthly depending on how involved you want to get.
    - ii. Continuous fertigation This method is more involved and requires a better understanding of fertigation and plant nutrition. It applies small amounts of fertiliser constantly whenever irrigation is applied.
    - *iii. Open hydroponics* Like continuous fertigation with a



Fertigation mixing and holding tanks: Fertigation systems vary in size depending on your requirements, from the need for large holding tanks (left), to in-field injection points (top right), to the use of 1,000L fertilizer shuttles (bottom right). Photographs provided by AgriHort Solutions.

couple of differences. fertigation electrical conductivity (EC) and pH are adjusted to suit the crop physiology requirements.

- c. Filtration A separate filtration system will be required for fertigation tanks and injection points to avoid undissolved or incompatible fertilisers entering the irrigation system that can clog up lines, drippers or sprinkler heads.
- **d. Property size** The size of the farm will influence the distance the fertiliser needs to travel before it reaches the desired block to be fertigated, it could be minutes or hours. It may be more practical to have multiple injection points on larger farms.
- e. Construction materials Fertilisers can vary in their acidic / alkaline properties and can cause damage to older systems with fibro-cement mainlines and some types of fittings in newer irrigation systems.

- 2. Irrigation system maintenance This should be on the top of your list! Without a well-maintained system, your throwing your money away. Problems created through lack of maintenance include:
  - a. Under or over watering;
  - b. Increased power costs;
  - c. Uneven watering due to blocked emitters or lack of pressure;
  - d. Loss of production and profitability.

To maintain your irrigation system, you should check your operating pressures and implement a regular maintenance program to:

- a. Flush the mainline, submains and irrigation lines;
- b. Remove algae growth using either chlorine or hydrogen peroxide;
- Remove deposits caused by irrigation water and fertilisers using acids.

Continued page 23

#### Continued from page 22

<u>Caution</u> must be taken when using chlorine, hydrogen peroxide and acids. Incorrect handling of these products can cause damage to your health or your infrastructure. *It is always best to seek specialist advice when using these products.* 

 Water source – This is generally not a major problem in Australia but in some areas irrigation water can cause problems. Water quality aspects that should be considered are: pH, alkalinity, water hardness, electrical conductivity (EC), sodium absorption ratio (SAR), chloride and contaminants.

Having these water quality parameters tested can give you an indication of any issues and the suitability of the water source for your crop. You should consider getting your water tested and regularly testing the pH and EC; both are good indicators for any changes in water quality.

- 4.Fertilisers The choice of fertilisers are endless, there always seems to be a new one on the market. So, consider the following when selecting fertiliser for fertigation:
  - a. Liquid fertiliser versus dry soluble fertilisers –

- Generally liquid fertilisers are the same as dry soluble fertilisers, the difference is that someone has premixed the fertilisers into a fertigation solution for you and for this privilege you pay a premium over dry soluble fertilisers.
- ii. Many liquid fertilisers claim to be more available to plants than dry soluble fertilisers, this is generally not the case.
- iii. When choosing the fertiliser type, one must consider cost, ease of use and/or occupational health and safety. Either dry or liquid fertilises are suitable for fertigation.

#### b. Tank mixing

- i. Fertiliser solubility is a major consideration when mixing fertilisers, if the solubility limit is exceeded the fertiliser will stop dissolving. The main consideration in fertiliser solubility is the type of fertiliser and water temperature, for example potassium nitrate has a solubility of 21kg / 100L @ 10°C and 32kg / 100L @ 20°C.
- Nitrate based fertilisers create an endothermic reaction when mixed in water which means that the water temperature drops

and you might find that a water temperature of 20°C has become 15°C, affecting solubility and tank mixing.

iii. Not all fertilisers are compatible and major problems arise around calcium based fertilisers. Care must be taken when mixing up fertilisers at all times; I have seen compatibility reactions occur between fertilisers just because the fertigation tank was not cleaned between tank mixes.

#### 5. Crop nutrient requirements -

It is important to meet the nutrient requirements of the crop and this starts with a good nutrition plan. Do your homework and look at your soil organic matter levels, soil structure, cation exchange capacity (CEC), soil water holding capacity, crop load and previous fertiliser applications.

A good nutrition plan needs to be monitored and adjusted throughout the season based on soil and leaf analysis, tree health, crop load, climate and tree physiology.

Your irrigation infrastructure is essential to maximising fertigation results. Now is a good time to plan your irrigation system maintenance.



# **PEOPLE & EVENTS**

# Nastasi family featured in Growcom's *Fruit and Vegetable News*

The Nastasi family has been featured on the front cover of the February edition of Growcom's publication *Fruit and Vegetable News*. The lead article discusses the journey the Nastasi family have taken since 1975 to grow their business.

# SWEET AS MANGOES

Persistence pays off for mango winemakers

Article supplied by Growcom. Written by Sam Allen-Ankins. Photography credit: Robert Blake.

At the turn of the millennium, history was made in Biboohra, Mareeba when fruit farmers Dino and Sam Nastasi and their father Charles launched the world's first commercial mango wine at their family owned and operated Golden Drop Winery.

It was a bold business venture, previously unheard of in the Australian fruit and wine industries, but it was a risk they were willing to take, tapping into an untouched niche market that would change their business for the better.

Nearly twenty years later, the Nastasis couldn't be prouder to see out their father's vision. Their wines are renowned for reducing food waste and have become a popular gift choice.

They harvest four different varieties of mango – Pearl, Keitt, Kensington Pride (KP) and their own special variety, Australian Kensington Red.



The 'KP Reds', as they call them, flower a couple of weeks earlier than the KPs and boast a vibrant red blush inside and on their skin and flavour that packs a punch.

Back in 1975, Charles and his sons planted their first 3,600 mango trees. Over the past 25 years the plantation has grown to have in excess of 17,000 trees covering more than 100 hectares, making it now one of the largest family owned mango plantations in Australia.

Fresh produce remains their main source of production while unmarketable fruit becomes seconds for wine making. In turn, fruit that doesn't meet a good market price is put back into something profitable. It is an ingenious value-add, the result of years of fastidious research and experimenting.

Today, their fruit sits on the shelves of all main chain stores across Australia, including Woolworths, Coles and Aldi, with a small amount exported to overseas markets craving premium quality fruit.

On-farm, they use underground irrigation through lateral spinners at the roots of the trees with water they get from the Barron River and three pump sites on their property.

The mangoes receive plenty of sustenance but bad weather looms in the summer months threatening the Nastasis mango quality and production.

Just last year, Ex-Tropical Cyclone Owen imposed significant wind damage to the crop. There was no loss of mangoes to the ground, but a close inspection of the trees showed bruises on the fruit skins where they bumped each other.

"We've been hit with everything. We've had floods, hail, storms, and now magpie geese!" Dino said.

Continued page 25

#### Continued from page 24

"We drive around and scare them every morning at dawn and every night to get them airborne. The sky becomes black with birds, it's amazing how many land in the plantation."

In recent months the birdlife has harmed the fruit, landing in huge packs and scuffing the crop.

Risks like these aren't new. Whether it be the wrath of Mother Nature or the menacing threat of wildlife, it is times like these when the business falls back upon the security of the winery.

But the winery wasn't always what it is today, said Dino. Years ago, when they were first entrenched in the technical and scientific process of wine making, they installed laboratories on their property to experiment with different flavours. They employed chemists and wine makers to help refine the product and eventually persistence paid off.

"In the early days we'd go in to the lab under the dark of morning and not come out until nine at night." Dino said.

Five years and 50-odd test batches of wine later, the family narrowed down the choices to a dry, medium and a sweet for sale at their cellar door on-farm.

"But customers would come in and say, 'is that all you've got?" Dino said. "So, from the wines, we expanded our line to include mango port, mango cello, and lemon, mandarin, lime and dragonfruit cello's."

Today the Nastasis sell to local bottle shops and export worldwide through their shop online. It's a wide market that's slowly growing but Dino said they don't want to expand further than they can supply.





"If the fresh mango industry fell over, we'd probably push more with the winery but at the moment it's just where we want it to be," he said.

"It's a good value-add to our business to keep all our staff employed during the year."

Their farm, Nastasi & Sons, employs eight staff who work year-round, some of which have been in their positions for 20 years. While during harvest time, there can be up to 75 pickers and packers in the field and packing shed.

Dino said more than half of his harvest staff are return-workers which includes seasonal workers.

"Most employees want at least three months of continuous work. I do consider this during the harvest and try to have a constant flow of work available. I aim for a good five days a week, so they're not left waiting. I don't muck them around." he said.

"It's a matter of getting loyal, reliable staff that turn up regularly and stick out the season. It can be frustrating having to train 70-odd people, who may end up leaving as early as three days into the season."

With wages at an all-time high, some years the only way for the Nastasis to make a profit is to cut costs internally which proves difficult when they want to grow quality fruit.

But the pressure doesn't just sit on Dino and Sam's shoulders, their respective wives Maria and Jackie, their sister Grace and their mother Lucy all play a part in the operation of the farm and winery. They carry on an admirable legacy left by their father who passed away five years ago.

"He was the biggest inspiration and strength to all of us," Dino said.

"We've done a good job at filling in all the gaps—the hardest part is finding some time to take a break."

However, Dino says the silly season is the last time of year they'd consider travelling given it's their busiest.

"We took Christmas day off, but then we were at it again, the mangoes don't hang around for us," Dino said.

"It probably is time to start thinking about having a break. We're set up now. We can handle a few bad blows and don't worry so much anymore.

"The years are going quicker, I don't know why. You turn around and go, oh its mango season again!"

To read the full article and to subscribe to Growcom's monthly magazine <u>click here</u>.

### NT mango grower featured on *Landline*

Martina Matzner, Manager of Acacia Hills Farm was featured on ABC's *Landline* program in February. The story gives a great insight into mango growing and Martina's passion for the industry.

Congratulations Martina on an inspiring watch.



### Piñata Farms named Horticulture Farmer of the Year

Leading Australian fruit producer, Piñata Farms, has won The Weekly Times Coles 2018 Horticulture Farmer of the Year award.

Now in their seventh year, the awards were presented at a gala function in Melbourne on Friday, 22 February.

**Congratulations Piñata!** 

Read the full story here.







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