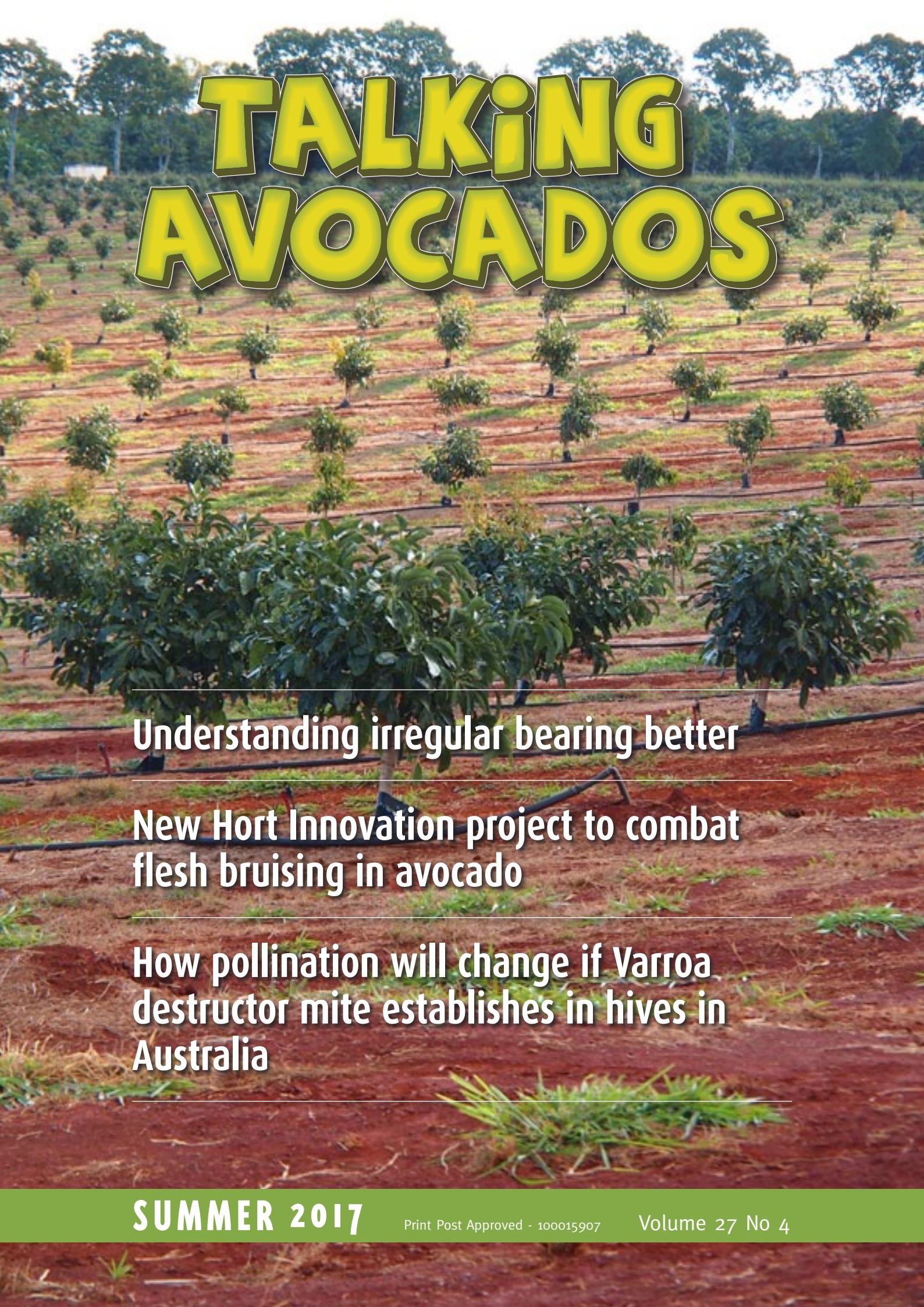


# TALKING AVOCADOS

A wide-angle photograph of a vast agricultural field. In the foreground, several larger, more established avocado trees are visible, their dark green leaves contrasting with the reddish-brown soil. Behind them, numerous smaller, younger trees are planted in precise, parallel rows that stretch across the landscape. The sky above is a bright, clear blue with a few wispy white clouds.

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**Understanding irregular bearing better**

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**New Hort Innovation project to combat  
flesh bruising in avocado**

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**How pollination will change if Varroa  
destructor mite establishes in hives in  
Australia**

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# Avocados Australia Limited

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**We all make mistakes:** If we make a mistake please let us know so a correction may be made in the next issue.



**Horticulture  
Innovation  
Australia**

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*Young avocado orchard at*

**Cover:** *Avocado Ridge, Childers, Queensland*

# Chairman's Perspective

Happy new year to all Australian avocado growers and I hope this year bears you a good clean crop and good returns for your efforts.

With those good wishes out of the way, I should reflect on the possibilities for this outcome to occur. Our industry has gone, and is still going, through a massive expansion of new tree plantings across all the regions. Plantings in the North Queensland, Western Australia and Bundaberg regions are all up significantly and it looks like the start to the higher production for plantings from 3-4 years ago will impact the market in April this year.

Recently, I have had calls from growers and traders asking about production forecasts and I have been reluctant to be too specific because I do not have the exact numbers. It is therefore prudent to be a little vague until some solid numbers are available so as not to scare either the growers or the market.

I am also reminded to be cautious by the message at the bottom of my, and your, superannuation statement which reads: *"While useful for detecting patterns, the past is not a guide to future performance. Some figures contained in this report are forecasts and may not be a reliable indicator of future results."* In these matters my comments are merely observations and not to be taken as recommendations.

The market for Australian avocados is predominately the domestic market here in Australia, with a very small amount going to export. It is therefore the Australian consumer that controls our industry's fate. If the product supplied to the consumer here is satisfactory with its quality and price, we'll have a chance to grow the market to include those consumers who until now, have been hesitant to take to our product. This can be because they do not know how to select, store or use the fruit, it could be an adverse reaction to poor quality and waste from a previous purchase, or it could be simply that the price is too high. As an industry we can address some of these

points but the main drivers to buying and continuing to buy are quality and price. Without a concerted effort to improve quality throughout our systems and present good quality

avocados at an affordable price, the consumer will not take up the expected increased volumes and the market will stall, back-up, and eventually collapse.

There are people who believe the consumer will rally at lower prices and take up the increased volume. Maybe yes, but possibly not as well. My farm once grew potatoes and at their lowest price we tried to give away a whole semitrailer load for the price of a carton of beer without success. So the rest of the crop remained in the paddock. The consumer just did not want any more potatoes regardless of the price, even for free. The same could well happen to avocados.

This year is the start of our journey on the rising production curve and it is up to all growers to increase our efforts to produce the highest quality possible and to engage with the packers, transporters, wholesalers, ripeners, agents, retailers and consumers in order to build confidence in our local avocados. The production forecast curve is now trending to rise above and faster than the consumption curve and this is the basis for this comment.

Australian-grown avocados are fresh, less travelled and importantly – local, and we have the best chance to grow our own market and protect our own market from increased imports and the additional supply pressure that that will bring.

**Jim Kochi**

Jim Kochi, Chairman, Avocados Australia Limited



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# CEO's Report

## Season update

The last quarter has seen more records broken for the Australian avocado market. Weekly supply topped 391,000 trays in October 2016, volumes never experienced previously. Market prices again held up during this period which is a credit to all those involved in the supply and marketing of avocados in Australia. A summary of the throughput can be found on P.45.

Forecasts for the coming season indicate that volumes will be higher again this year across many regions. Ongoing concerted effort to consistently deliver high quality fruit and consistent supply volumes will be the key to long term sustainable returns for the industry.

## Avocados Australia Board

Two new directors have been appointed to the board of Avocados Australia following the regional elections and AGM held in Brisbane in November last year.

Eric Carney (Central Queensland) and Dudley Mitchell (WA) are the new directors for these regions. Eric replaces Lachlan Donovan as one of two directors in Central Queensland and Dudley fills one of two director positions in WA which was previously vacant. We really look forward to the new ideas and perspectives that these new directors will bring.

## Order your Kangaroo Labels

**Avocados Australia manages the Kangaroo Label and a set of barcodes for use on Australian avocados.**

To order Kangaroo Labels through our registered label companies, grower packers or packhouses should contact Avocados Australia so they may be issued with a Packhouse Registration Number. Contact Avocados Australia on toll free 1300 303 971 or email [admin@avocado.org.au](mailto:admin@avocado.org.au), then source your Kangaroo Labels from a registered Kangaroo Label supplier listed below.



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J-Tech Systems:	ph: 02 6049 5001
Label Press:	ph: 07 3271 2111
Mildura Printing Services	ph: 03 5022 1441
Warehouse Design and Packaging:	ph: 02 9905 0963

I'd like to thank Lachlan Donovan for his contribution to the board for more than 13 years. Lachlan has always provided very thoughtful input to the board and provided strong representation for the Central Queensland region.



## New industry website

We are very excited about our new industry website that we expect to launch in February 2017. The new site will be much easier to use and navigate, packed with excellent information and resources, be mobile friendly, and have lots of new and useful features. This has been a major undertaking for Avocados Australia in 2016 and I am sure you will be very impressed with this new resource. Keep an eye out for an announcement in Guacamole about the launch date.

## Planning for new industry engagement and development program

The highly successful Qualicado program finished last year and we are currently reviewing and planning what the future industry engagement and development program might look like. We are developing a plan with assistance from expert consultant Dr Jeff Coutts. This will include a series of targeted phone interviews in February across a range of industry stakeholders.

Although the Qualicado program has been very successful, we are keen to ensure that future industry stakeholder engagement and development programs take account of the different needs across the industry. For example, new growers, established growers, large businesses, small businesses, wholesalers, consultants and so on. There are many different stakeholders in the Australian avocado industry and we want to tailor programs that best meet these different needs.

## Backpacker tax issue finally resolved

After months of uncertainty, the 32.5 per cent backpacker tax that was due to come into effect on 1 January 2017 has finally been changed. It will now be 15 per cent with a 65 per cent superannuation clawback, instead of 95 per cent that was imposed by the government during the negotiation. I think this is a very good outcome.

Avocados Australia was actively involved in this negotiation on behalf of avocado growers. We made a submission to the review in September advocating for a 15 per cent tax rate. We issued a media release on 1 December that was also sent to key Senators and MPs endorsing a tax rate of between 10.5 and 15 per cent. We also expressed our disappointment about the superannuation changes that would see backpackers lose 95 per cent of their superannuation.

The outcome was achieved through a deal with the Greens which will also see \$100-million allocated to Landcare.

## Staff changes at Avocados Australia

During the transition from Horticulture Australia Limited to Horticulture Innovation Australia Limited there have been significant disruptions to funding for a number of levy-funded projects delivered by Avocados Australia and these have impacted on staff resourcing.

Over the past 12 months Jenny Margetts (P2P Business Solutions) was employed by Avocados Australia on a contract basis to assist with the Qualicado and Infocado programs. Jenny's role has now finished and I would like to thank her for the excellent work during this time.

Over the next few months Joanna Embry will be working part time for Avocados Australia overseeing the Infocado Program which is funded by the levy program to the end of April. For those who may not be aware, Jo was previously employed full time at Avocados Australia and was involved in the original development of Infocado. It is great to have Jo on board during this interim period.

## New Avocado Strategic Plan update

Work has continued with the development of the new avocado plan.

A situation analysis was made available to industry for comment last year, workshops have been held in Western Australia and North Queensland, as well as with the Avocados Australia board and HIA Strategic Industry Advisory Panel. The analysis of potential Mexican imports has been completed and the findings are being incorporated into the plan. An industry survey was distributed late last year and the results have been analysed.

A draft plan has been developed and will be made available to industry for comment very soon.



## Export market access progress

Export market access can be a very long road and often it is difficult to know how far you are along it. Recently there has been great progress with our applications for market access to Thailand and Japan.

Workable protocols for Thailand (WA initially) have almost been finalised and audits are being planned for later this year by the Thai Government which indicates a decision is close.

Audits are also being planned by the Japanese Government for February this year which indicates a serious commitment to progressing our application.

We are very hopeful that Hass from WA will have access to these two markets later this year. Pending further research that is currently underway, access for eastern states and Shepard is likely to follow in the coming years.

## New initiatives planned for 2017

Avocados Australia has a number of new initiatives planned for 2017 particularly in the areas of industry data and analysis, export development and industry development and extension. These will be somewhat dependent on prioritisation of levy resources by Hort Innovation and their tender process.

This year is shaping up to be another exciting and very busy year for Avocados Australia.

I wish everyone a successful 2017!



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# Around Australia

## South Queensland Report

By Daryl Boardman, Avocados Australia Director for the South Queensland Growing Area

As a new year begins let's hope it isn't as dry as 2016. The yearly total that I measured at Ravensbourne was approximately 550mm which is half the annual average rainfall.

Luckily we have seen over 100mm so far for January so the trees are thankful for that.

Fruit set seems mixed across the region and as we are going through our first fruit drop and very hot conditions we won't have a true indication for another month or so of what is left on the trees.

It's sad to hear that Bede Mackenzie has passed in the New Year after having a heart operation. Bede was a great promoter of the Avocado product at any event he attended. He also had a passion for Avocado oil and he produced and sold his oil under the Maleny Avocado oil brand. We, as I am sure many, will miss this great oil. I hope that someone may continue his oil production in the future. Bede will be missed by many.

It's was great to see a good roll up at Simon Newett's field day held at Redbank Plantations at Hampton before Christmas. It was a great day and venue although a very hot day. Thanks Robyn for the venue and the Christmas drinks and snacks at the end of the day.

I hope that everyone has had a great Christmas and break with family and friends and ready to get back to growing our fantastic product, the avocado.



## Central Queensland Report

By Eric Carney, Avocados Australia Directors for the Central Queensland Growing Area

A new calendar year upon us and a new season is less than two months away from starting for those in the Central Queensland district.

Most growers in the district are reporting a strong Shepard crop whilst the Hass crop is mixed. Some Hass blocks will be barely worth picking yet others are dripping.

One observation is that the more mature trees, those over 12 years seem more likely to have less fruit than trees such as those 10 years and younger. Also, there seems to be a few cukes around which suggests flowers did not pollinate properly, although from memory the temperatures at flowering were in the acceptable range.

This then leads to the obligatory weather report. For the most part the weather has been kind during flowering and up until now (mid-January). Certainly there's been some warmer weather in late December and mid-January, but thankfully no



major swaths of wild wind, hail or extreme downpours, just warm weather keeping the fruit growing and the grass and the weeds and Monolepta. All in all, fruit quality should be great from this area this coming season.

I hope everyone has a successful season and hopefully supplies can be managed so we can avoid a glut during that May to early June timeframe when both NQ and CQ fruit is around.

## Tri State Report

By Kym Thiel, Avocados Australia Director for the Tri State Growing Area

It's been another very successful season for Tri State growers and the industry in general.



The threat of early oversupply and therefore lower returns than desired and necessary was averted due to Avocados Australia's quick action, liaising with the media, supermarket chains, as well as our New Zealand industry colleagues.

The crop in this region was as expected, with fruit quality being mixed. The size profile filled the major desired count ranges which meant fruit was always in demand and remained good quality on the shelves.

The only real downer was the storms in November which included significant hail which affected mainly Sunraysia avocado growers with the major damage in the Riverland being to citrus, wine grapes and stone fruit.

Next year's crop at this very early stage appears to be one of the best ever, which defies all the science and logic in regard to pollination. Extremely low overnight and daytime temperatures continued into Spring and through the flowering pollination period, but trees came out of it showing one of the heaviest crops in recent memory.

At the time of writing this report trees were just beginning the natural shedding process and it will be interesting to see what remains, but a more humid and wet summer thus far has given optimism that the 17/18 crop will be pretty huge.

## Sunshine Coast Report

By Robert Price, Avocados Australia Director for the Sunshine Coast Growing Area



I hope all had a merry Christmas and a happy New Year and that 2017 will be a productive season following on from 2016.

By all indications, in the Sunshine Coast area, this year's crop will be a comparable average to those of the past and returns should maintain similar levels overall.

The weather is perplexing to say the least, with hot weather, strong drying winds and rainfalls varying in measurement,

seemingly in pockets across the areas. While driving around one can see marked differences in the effect of the rainfall where some orchards are lush and others showing less progress than one would expect for this time of year.

For our part, we had a catastrophic hail storm just before Christmas which wiped out the avocado crop and tore our passionfruit vines to shreds. The devastation could only be appreciated by seeing it for yourself. We were due to do some grafting on a few rows of trees, but on inspection could not find any suitable scions to use, as the scion material was cut by hail cut through young bark, down to the cambium cell layer and sapwood, also shredding leaves. We will have a concerted pruning regime to follow over the next months to sort out the good from the bad. What of the fruit? Well 95 per cent of it was knocked to the ground and of the remaining, the majority of that was pitted with hail damage.

I would like to thank Simon Newett and Elizabeth Dann for their support and good advice on post devastation management. Simon was quick to offer his help and wealth of experience.

Finally, it is also sad to report the death of Bede Mackenzie, following a heart operation.

Bede managed several Sunshine Coast avocado orchards, including his own 50 acre block at Bellthorpe, and was well known for his Maleny Avocado Oil.

Originally from Roma, Bede spent 20 years in the army and the past 23 years in the avocado industry.

He purchased the Bellthorpe property in 1991 with his wife Marion and planted 2,500 avocado trees two years later. He sold his reject fruit to a company that produced avocado oil until that company closed down in 2007.

From then on, Bede cold-pressed the oil himself using an olive oil press and marketed it locally, through independent stores and farmers' markets. A regular stallholder at markets and field days, Bede tirelessly promoted the health benefits of avocados and the versatility of avocado oil.

Avocados Australia would like to extend our condolences to Bede's family and friends.

## Tamborine and Northern Rivers Report

By Tom Silver, Avocados Australia Director for the Tamborine and Northern Rivers Growing Area



Most farms in the Northern Rivers - Tweed growing regions continue to report an above average forecast for the coming harvest.

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## Around Australia continued

Though fruit drop in some orchards has been large, generally a still significant crop remains on the trees. Fruit quality appears good, however fruit size on the larger cropping trees is behind. It has been significantly dry this growing season which is probably assisting fruit quality but does appear to be putting stress on the trees.

Most orchards are only picking up the odd storm rain, meaning the need for a significant drench to top up the table and fill storages is becoming direr. All the best for 2017.

### Western Australia Report

By Dudley Mitchell, Avocados Australia Director for the Western Australia Growing Area

The WA winter stretched almost into October for the southern growing regions and with little increase in temperatures over the spring, flowering was delayed by up to three weeks.

Luckily there were several pollination events and the early signs for the Pemberton/Manjimup regions are for a good crop next year.

However the above-average rainfall has had its toll on the trees and growers are reminded to ensure adequate *Phytophthora* control systems are in place especially now as the spring flush hardens off and then again in late autumn.

The current harvest season is almost at an end with only a handful of growers still picking and volumes just trickling into the terminal markets and chains.

The early part of the season saw disciplined marketing amid record volumes flowing through the system with some weeks topping 390 000 trays.

Demand was consistent and good coordination between the major suppliers ensured that any peaks or troughs caused by changeable New Zealand imports were anticipated and covered.

This resulted in returns to growers being slightly higher than pre-season predictions which had factored in a large New Zealand crop having a negative impact. In fact, the unpredictability of imported supply and its variable quality this season, in spite of pre-season rumours of a 'monster' New Zealand crop, has added weight to our argument to prioritise import replacement.

Early signs are that next year the chains will have little need for New Zealand supply over the spring and summer months.

Our successful fight for shelf space and the maintenance of this space every year is predicated on our ability to produce consistent crops year in and out which is why the levy-funded study into irregular bearing is so important.

All growing regions in Australia are affected to some degree and the mitigation of this phenomenon will go a long way towards strengthening the avocado value chain and in turn, would



provide more certainty to both growers and consumers alike.

It is in our interests as an industry to ensure HIA gets this project right in terms of its structure and objectives, and then get it up and running. If you haven't already, please make sure you are an HIA member and that you hold it to account for the levies you pay.

A final word with quality in mind as we wind-down and start the search for those avocados 'left behind' which will sustain us until our next harvest.

While we understand the majority of bruising takes place at the retail level, we must also acknowledge this is out of our control. What is within our control or influence are all the processes leading up to delivery at the DC or market. It is these processes that need to be performed to the best of our abilities. While the product we grow has inherent qualities that have endeared it to the consumer in spite of our inconsistencies, let's try as an industry to be intentional about delivering to the end of our line of influence a product within which the consumer will see value in purchasing, keeping in mind that '*Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution...*' (William Foster). Good luck for 2017!

### Central New South Wales Report

By Ian Tolson, Avocados Australia Director for the Central New South Wales Growing Area



Another successful Study Group was held at the Central Coast on 3 November 2016 at Joe and Rachel Sparacino's avocado and citrus orchard. After all the thought-provoking presentations and wonderful morning tea and lunch, attendees then headed off on some orchard walks both at the Sparacinos as well as orchards managed by Peter Yappas. Each orchard is unique and it is a rare occasion that something isn't gained by just looking and listening to everyone's ideas. A big thank-you to all concerned for their efforts in making it such a wonderful day.

At the end of October I attended a function/promotional morning at an agent's stand in Sydney Markets. Quite a number of chefs were in attendance and one of the three products being promoted was avocados. It was interesting listening to the innovative ways in which avocados are being used, it was also concerning that one of the younger chefs commented that he struggles to use avocado in recipes other than in summer months...

Not much relief from the extremely hot and dry summer conditions in the local area. Irrigation systems have been put to the test, only a few days of drizzle have helped supplement irrigating. Those further south have had better falls. The growers there were very grateful of the steady rain over a period of 3-4 days.

Most growers are reporting very good crops for the upcoming season.

The aim now is to maintain orchard and fruit health. We have chosen to be orchardists; therefore we should do it to the best of our ability, ensuring all the knowledge gained through attending information sessions is put into practice.

How many of us ask ourselves at the end of each harvest what can we do better next season and then act on it?

As spoken about previously, we are the foundation in the growth of consumption of avocados. Supplying the best possible quality to consumers will build confidence in our product and ensure repeat purchasing.

## North Queensland Report

By Jim Kochi, Avocados Australia Director for the North Queensland Growing Area



After a stinging hot dry spring across the northern growing region the weather has finally broken and given us some rain. Just in time because the Tinaroo Dam, which services the Walkamin and Mareeba area, was getting down to the low 30 per cent level and the cracks in the muddy bottom were starting to show.

Another month of dry would have been very serious for those growers for this year and the next one as well. The Atherton growers were also anxiously watching sub-aquifer levels.

Rain has been plentiful with some falls up to 180mm in a short afternoon and around 500mm in a week.

This volume of rain is not much use to growers and is also very damaging to crops and infrastructure. Unfortunately most of the runoff was downstream from Tinaroo, but there is still a lot of summer to come. Unfortunately this rain also had tragic consequences for my Tolga neighbour, and ultimately our community, who was swept away by the flood water.

Crop estimates look to be average-to-good for Shepard and the same for Hass.

Growers are seeing patchy fruit set and crop load, but on estimate the average should be for a decent crop.

There have been major plantings here over the past 3-5 years and these crops will start to come in this year.

The Shepard crop will be larger and will continue for longer and run into the Hass so growers will need to keep close contact with their marketing contacts to get a good understanding of the market conditions and prices.

Heavy rain is dangerous so please be careful around flowing water and wet slopes.

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# Industry Matters

*Industry Matters includes articles that have been published by various news sources and are acknowledged accordingly.*

## Working safely near powerlines in the rural industry

by the Department of Workplace Health and Safety, Queensland

Contact with powerlines can cause death or serious injury through electric shock, explosion and fire, and severe damage to plant and equipment.

Even getting too close to powerlines can lead to electricity arcing over from a powerline to a person or their equipment.

If you must work near powerlines, you should follow these three steps:

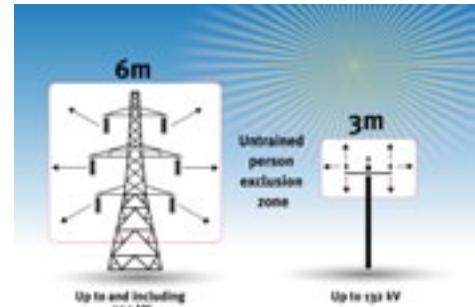
### 1. Develop a safe system of work before you start

- Identify overhead and underground powerlines by consulting maps and/or talking to the property owner and electrical entity.
- Conduct a site specific risk assessment – think about the type of plant and equipment/tools used, nature and size of loads being moved, site and weather conditions, type of work being done, and set-up and pack-up procedures.
- Put risk controls in place – the most effective way of controlling the risk is to de-energise the line for the duration of work where there is a risk of contact.

### 2. Keep your workers/contractors and family informed about electrical safety

- Induct and train your workers and contractors in safe work procedures, emergency procedures, and exclusion zones.
- Carefully plan the tasks to be completed near powerlines and work away from them whenever possible, not underneath them.

- Show your workers the safe distance from an exclusion zone by marking it on the ground.



- Ensure people are aware that powerlines sag or sway in hot or windy weather.

- Harvesters, elevated work platforms, irrigation pipes, grain augers, elevators, mobile grain silos, cranes, tippers and excavators have the potential to enter exclusion zones. Ensure your operators know the height and reach of machinery or hand held items to be used.

### 3. Avoid going into exclusion zones

- Make powerlines and poles visible. Ask your electrical entity for permission to paint power poles and/or have them install markers or flags on the powerlines.
- Lower topplers, harvesters and elevators when moving equipment to avoid contact with powerlines.
- Use a safety observer to make sure you stay well clear of exclusion zones.
- Where possible, use insulated or non-conductive tools and equipment.
- Follow the safety advice given by your electrical entity.

## Two new board members join Avocados Australia

Avocados Australia has two new board members following November's elections and Annual General Meeting.

Western Australia's current board member Neil Shenton has been joined by Dudley Mitchell to fill the second position for the region and Eric Carney joins John Walsh as the second board member for Central Queensland, replacing long-standing board member Lachlan Donovan who stepped down from his role last year.

Pemberton-based Dudley Mitchell has been in the avocado industry for the past 12 years. He graduated university with an MScAgric in Horticulture majoring in avocados in his home country of Zimbabwe.

He left there in 2003 for a break in the United Kingdom before moving to WA to develop a Perth-based agronomic consulting firm's south west client base. After four years of consulting he then took an opportunity to manage an avocado project. In 2014 he obtained his MBA and has now been managing the avocado project for the last seven years.

Childers-based Eric Carney grew up on an avocado farm in WA and has been involved in avocado farming since 2002. He is a grower and packer at Avocado Ridge in Central Queensland.

He managed a wholesale travel and tour company for 12 years prior to 2002, before combining forces with his parents to farm avocados with his wife and young children.

Avocados Australia's CEO John Tyas said it was great to see some more younger growers getting involved in the Peak Industry Body (PIB).

"The board is looking forward to working with both Dudley and Eric over the next few years," he said.

"The Avocados Australia Board has benefitted from great leadership over many years and it's great to see new leaders coming through the industry and being prepared to bring their fresh ideas to the table."

## New Fruitspotting bug booklet - error note

By Ruth Huwyer

*Talking Avocado recipients in the areas affected by Fruitspotting bug should have received the Fruitspotting bugs 2016 publication delivered along with the Spring 2016 edition of Talking Avocados.*

**Erratum:** In the recently released guide "Fruitspotting bugs 2016" there is an error in Table 3 on Page 23 entitled Registered chemicals for FSB control.

Table 4 on page 23 entitled "Different chemical classes of the pesticides registered for control of FSB" also contains the error.

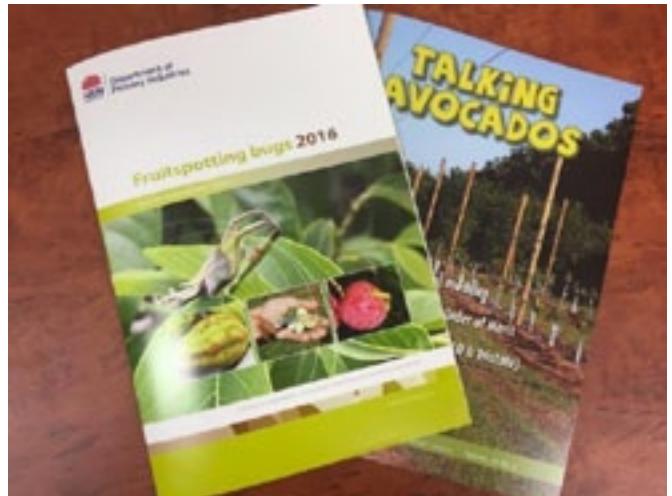
The following statement reflects the current APVMA permit for Methomyl.

Methomyl is not permitted for use to control the pest Fruitspotting bug.

Methomyl is permitted for use on macadamia, (in Queensland only) for the control of Banana Caterpillar.

<http://permits.apvma.gov.au/PER12796.PDF>

Methomyl is not permitted for use to control the pest Fruitspotting bug.



Methomyl is permitted for use in avocado for the control of ECTROPIS LOOPER only.

<http://permits.apvma.gov.au/PER14597.PDF>

The updated booklet (PDF) can be found online at <http://www.dpi.nsw.gov.au/biosecurity/insect-pests/fruitspotting-bugs>



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*Industry Matters continued*

## New Board to guide Hort Innovation's continuing growth

**Hort Innovation media release - 25 November 2016**

The nation's horticulture Research and Development Corporation welcomed new members to its Board today as the organisation enters into its next phase of growth.

Paul Harker has more than 20 years of retail experience spanning store operations, supply chain, and buying and marketing, including four years heading up the fresh produce buying team of one of Australia's largest retailers.

Jenny Margetts has worked in the horticultural industry for more than 25 years in a range of roles across the supply chain.

Selwyn Snell, an industry leader with more than four decades' experience in the agriculture, biotech and life sciences industries, was appointed a further term as Horticulture Innovation Australia Chair.

Northern NSW grower Mark Napper was re-elected Deputy Chair.

Mr Snell said he was honoured to be re-appointed to the position by the Board, and is keen to work with fellow Board members to continue to service the needs of the nation's turf, nursery, fruit, vegetable, nut and cut flower growers.

"This is a really exciting time for the Australian horticulture industry. Growers have never been more innovative and there is so much technology coming online," he said.

"Consumers are also becoming increasingly health conscious so the consumption of fruit, vegetables and nuts is in the spotlight like never before."

He said on top of that, Hort Innovation is working hard with growers to identify and tap into new trade markets, with a number opening up in recent years.

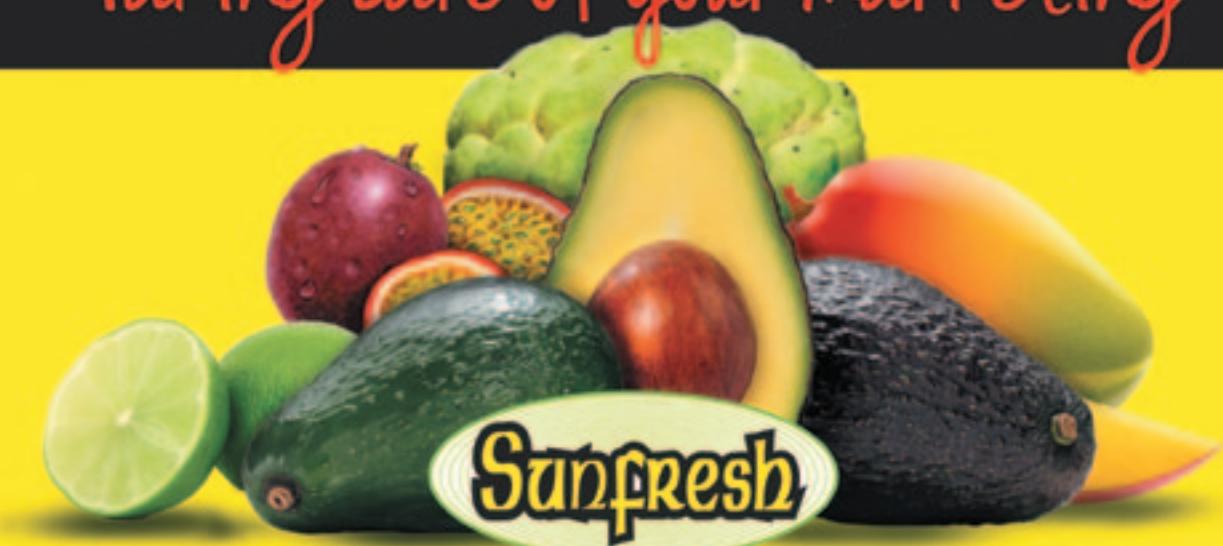
"At Horticulture Innovation Australia we are progressing in leaps and bounds. The organisation is in a great place, working closely with industry and top national and international researchers, companies and government agencies to get tangible results for nation's growers."

Mr Snell said Hort Innovation has close to 600 projects in the research and development pipeline, and it is in the process of delivering more than 100 marketing projects.

"Over the past year, Hort Innovation has driven a host of wins for industry including streamlined and strengthened health and safety audits to save growers time and money when accessing major supermarkets and key overseas trade markets.

"A dedicated Hort Innovation Centre for Robotics and Intelligent Systems has opened with world leading technology being developed to improve farm efficiencies, and commercialisation work underway."

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"Last week with our partners, we also opened the world's first sterile male Queensland fruit fly facility and we are on track to kerb the impact of the pest on Australian trade and food waste.

"We are also driving the organisation's largest ever horticulture recruitment drive with a multi-million co-investment into new university courses, internships, scholarships and leadership programs.

Mr Snell said there is plenty more to come: "I can't wait to see what 2017 brings and I look forward to working with growers, industry representative bodies and research partners to continue to see never-before-seen advancements in Australian horticulture."

The Board is charged with jointly managing \$120 million in research, development and marketing activities across the horticulture industry each year with funding from the Australian Government, grower levies and other sources.

Mr Snell welcomed the new Board members, saying it is made up of individuals who have a wide range of characteristics and valuable experience. The complete Board comprises:

- Selwyn Snell (Chair)
- Paul Harker
- Mark Napper (Deputy Chair)
- Stephen Lynch
- Prof Rob Clark
- Richard Hamley
- Sue Finger
- Jenny Margetts
- Peter Wauchope

Mr Snell welcomed the re-appointment of Professor Rob Clark and Peter Wauchope to the Board. He also thanked retiring former directors David Moon and David Cliffe for their hard work and commitment, wishing them the best of luck in their future endeavours.

## Jenny Margetts gains Hort Innovation board role

*By Caroline Page, Avocados Australia Communications Manager*

Avocado industry consultant Jenny Margetts has been elected to a position on the Hort Innovation Board.

Jenny has worked with Avocados Australia since around 2005, and most recently was responsible for delivering the 2016 Qualicado and Infocado programs. She has also been assisting Avocados Australia with export development and industry data analysis.

"The first consultancy contract I had with Avocados Australia was to set up the Infocado system," she said.



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### Industry Matters continued

Jenny has been involved with the horticulture industry for more than 25 years and has worked in a number of roles over this time.

For the last 13 years, she has run her own consultancy business focused on industry development, supply chain management and business planning to improve enterprise profitability. As a result, she has an extensive knowledge of the Australian horticulture industry and a first-hand understanding of how the industry operates at a practical level.

She maintains strong networks across the production, research and supply chain sectors of industry. Jenny has a particular interest in export market development, the application of new technologies and improving access to data for decision making at a business and industry level.

Jenny spent her early career as an agronomist working with the fruit and vegetable, winegrape, cotton and sugarcane producers. During this time she oversaw national variety trials for Yates Seeds, led nutrition trials across a range of crops, developed an irrigation management business and worked as a sales agronomist with a leading rural merchandising business.

Moving from field-based roles she administered the Queensland horticulture industry R&D program through COD/Queensland Fruit & Vegetable Growers, before taking up a corporate role in the rural merchandise sector. Jenny left this role in 1997 and started a marketing consulting business which worked with IT, defence and knowledge-based businesses, predominantly exporting to markets in the UK and USA.

In 2003, she returned to the fresh produce industry and established P2P Business Solutions.

Since that time, Jenny has developed an in-depth knowledge of the Australian horticultural industry and has worked closely with a number of industries, including the avocado industry. She has a strong understanding of business and sector issues, domestic and international market trends, and the opportunities and challenges facing the broader industry. As well she brings skills in strategy, R&D management, marketing and stakeholder management to the HIA Board role.

She holds tertiary qualifications in Applied Science (Horticultural Technology), Business (Marketing) and Export Management and also recently completed a number of post-graduate level subjects in environmental management, law and decision making.

From 2009 - 2012, Jenny served as the Chair of the Pineapple Industry Advisory Committee (IAC) under Horticulture Australia Limited.

Avocados Australia CEO John Tyas said he was delighted with Jenny's appointment to the board.

"Her extensive practical experience, industry knowledge and understanding as well as her appreciation of the importance of strong, effective industry bodies will be a very positive addition to the board and I wish her every success in helping to steer the company in the right direction."

### OrchardInfo update

Avocados Australia is currently collating the 2016 OrchardInfo Tree Census data and regional productivity data.

Reports should be available soon for those who contributed.

In 2016 Avocados Australia changed the way we collected this data and it is now much more simple and easy to do.

If we didn't contact you in 2016 requesting your orchard information, please contact Amanda at Avocados Australia so we can include your business in the 2017 OrchardInfo Tree Census on 07 3846 6566.

### Avocado SIAP – who they are and why they're here

*By Astrid Hughes, Relationship Manager, Hort Innovation.*

As previously advised in the last edition of Talking Avocados; Horticulture Innovation Australia (Hort Innovation) has appointed Strategic Investment Advisory Panels to each industry to strengthen its investment approach and help the Corporation in its charter to bolster industry output and returns.

The panels are tasked with advising Hort Innovation on its research, development and extension, trade and marketing activities to get the best result for industry from grower levies and government funds.

Hort Innovation CEO John Lloyd said the avocado panellists went through a particularly competitive application process with a large number of applications received.

"Following an expression of interest process, successful applicants were determined through interviews conducted by a panel including a Hort Innovation director, an Avocado Australia Limited (AAL) director and an independent third party representative," he said.

The Avocado panel features a majority of levy paying growers, representatives of Avocado Australia, an independent chair and myself. There is also scope for further panellists to be brought on board as required in the future, in line with the needs of the industry. The following details some information about the panellists highlighting their strong mix of skills and experience and how well positioned the Avocado industry is to ensure the health of the sector for the future.

#### Independent Chair – Peter O'Brien

**Background** – Peter was formerly the Managing Director of the Rural Industries Research and Development Corporation, Executive Director of the Bureau of Rural Sciences, and was Chief Scientific Advisor to the Minister for Agriculture and the

Ministry for Fisheries and Forestry. As a member of the Executive Leadership Team of the Department of Agriculture, Fisheries and Forestry, he was part of the primary decision making body on strategic, policy and operational issues across the Department. He currently works in senior consultancy, specialising in strategy, facilitation and executive development; as well as being the Director of the Fisheries Research and Development Corporation, and Professional Fellow and Director of the Murray-Darling Basin Futures Collaborative Research Network.

**Why selected?** Peter brings with him an impressive reputation as a leader in rural research and development, science, new and emerging rural industries, agriculture and natural resource management.

#### Panellist Member – Daryl Boardman

**Background** – Daryl has been on the Avocados Australia board since 2006, elected as the southern Queensland representative. Daryl is the owner and director of Sunnyspot Farms/Packhouse and Cool Haul and is also a director of Avosrus, an avocado property in the Childers region and a director of The Avolution, a domestic and export marketing group.

**Why selected?** Daryl is passionate about the industry and its longevity and adds particular value with his knowledge

of past investment and understanding of the many facets of the industry along the supply chain. He contributes strongly to discussions regarding marketing and export and always comes prepared with a strategic outlook and whole of industry perspective.

#### Panellist Member – Kylie Collins

**Background** – Kylie is an active member of a number of industry associations and the Mareeba Dimbulah Irrigation Area Council and grows, harvests and packs mangoes and avocados. Holding a Bachelor of Business degree and regularly participating in industry trials for rootstock and irrigation, as well as fruit fly and fruit spotting bug. Kylie brings a practical approach to applying R&D to improving yields, picking processes and transporting methods and is well across the industry issues in the local region of Mareeba and Dimbulah and further across the industry.

**Why selected?** Kylie brings an outcome/solutions focus to the group and knowledge of the key issues facing the industry. Her innovative and considered approach and application of R&D in the areas of production systems, natural resource management are well respected as are her communication and problem solving skills.

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## Industry Matters continued

### Panellist Member – Neil Delroy

**Background** – Neil is the principal owner and managing director of a 350ha avocado farm in south west WA. He has an Agricultural Science degree and ensures that the production and supply chain of the business is focused on using the available science to create a competitive advantage. Neil has turned and built a business from nothing through to the second largest producer in Australia. He regularly works with international and national R&D service providers, focusing on science and a measured performance culture within the business to produce profits.

**Why selected?** Neil wants to ensure the whole avocado industry targets and designs good R&D programs that create innovation and a competitive advantage for the industry. He is driven to turn current consumption of 3.2kg/capita to the 5.5kg/capita it needs to be through focusing on quality and giving the consumer a better product to maintain reasonable prices.

### Panellist Member – Jennie Franceschi

**Background** – Jennie has been involved with the avocado industry since 1974 from planting the first commercial avocado orchard in WA for her father to orchard and packhouse management to currently looking after 45 growers in south west WA. Jennie is managing director of Westnfresh and has a role in the processing, packing, marketing and exporting for both fresh and processed product.

**Why selected?** Her experience in market access and market development requirements both domestically and internationally along with her experience at board level with Avocados Australia and the AGAWA committee and speaking at international conferences, brings a broad base of knowledge to the panel. Jennie's strengths lie with her industry-wide focus and her recognition of the need to have a strong industry to remain viable; the need to collaborate and continue with the good management that has put the industry in its position today.

### Panellist Member – Simon Grabbe

**Background** – Simon is part owner, director and manager whose current role with Simpson Farms is field operations with responsibility for orchard and general improvement/planning with the company. Previously, Simon ran and developed the processing business that included manufacturing, product development, marketing and managing the packing shed. Simon was previously a board member of Bundaberg Fruit and Vegetable Growers.

**Why selected?** Simon is focussed on good governance and process and ensuring value for money for the investment of avocado levies. Simon's experience and interests from the postharvest and supply chain through to the improvements in production systems are invaluable. His qualifications in Mechanical and Space Engineering bring an analytical approach that coupled with his lean manufacturing process understanding is also helpful.

### Panellist Member – Stewart Ipsen

**Background** – Stewart is on the board of a packing and marketing company, APMS that currently packs and markets about 40 per cent of WA's avocado crop and he is also the avocado ambassador for Genuinely Southern Forests, a regional brand development initiative. In addition to these roles; Stewart manages a 90ha family-owned orchard in the Pemberton region, South West WA, growing Hass and Reed avocados. The orchard will be expanding to 210ha and Stewart oversees all aspects of the operation from agronomy, labour management through to the day to day operations.

**Why selected?** Stewart's WA focus and experience with trials that include remote technology systems for orchard irrigation and fertigation along with his experience in cold chain management, knowledge of irregular bearing and issues facing the region brings a problem solving approach to the panel.

### Panellist Member – Xhemal (Jim) Kochi

**Background** – Jim has been on the board of Avocados Australia, elected for the North Queensland region for 10 years and the Chair of the Avocados Australia board for five years. He grows about 80ha of avocados in the Atherton region and has also been the Chair and a director for Shepard Australia for more than a decade. In addition to his experience at respective board levels Jim has a Bachelor of Applied Science (Rural Technology) and has worked as a field research officer and agronomist across a wide range of horticultural products for Schering Pty Ltd (now Bayer).

**Why selected?** Jim understands the need for all parts of the research program to link together from the development, extension through to the application. He is a leader in the industry demonstrated through his achievements as Chair of Shepard Australia and Avocados Australia. This experience enables valuable insights, problem solving and a deep understanding of industry issues and opportunities to be brought to the table.

### Panellist Member – Simon Newett

**Background** – Simon has been an extension officer with avocados for more than 20 years, ensuring an understanding of a broad range of research. His key role liaising with researchers and connecting the research with growers through study groups both internationally and nationally brings a deep understanding of industry issues, regional issues and opportunities to the panel. Simon intrinsically develops grower friendly strategies and solutions to encourage adoption of best practice.

**Why selected?** – Simon's role in industry adoption of R&D and communicating the program out to the broad range of stakeholders within his network breaches the gap with levy investment and grower uptake of research. He is also recognised for his contribution to key industry publications such as the 'Avocado Problem Solver Field Guide' and the 'Growing' Section of the online Best Practice Resource along with his extensive knowledge and insight of regional differences and issues.

### Panellist Member – Cormac te Kloot

**Background** – Cormac is Business Manager of the avocado category with Costas and brings good knowledge of all different aspects of the supply chain from packing and marketing through to retail. He was previously responsible for the Coles national avocado account and the Aldi Victoria account and is qualified with a Bachelor of Agribusiness. His network, knowledge and engagement with groups such as the wholesalers and the Hass Avocado Board are also a valuable contribution.

**Why selected?** Cormac has a decade of experience across the handling and selling aspects of the supply chain and brings a fresh perspective and innovative approach with his close retailer relationships benefiting the panel. He is results-focussed and dedicated to growing consumption and demand of avocados through opportunities that include market expansion, quality, retailer engagement and cold chain management to meet increased production.

### Panellist Member – John Walsh

**Background** – John is part owner and director of Simpson Farms, Australia's largest producer. He has been involved with the avocado industry for more than 20 years and is a board member of Avocados Australia and the Avocado Export Company.

He has been a board member and treasurer of the Bundaberg Fruit and Vegetable Growers and is also currently the Chair of the Avocados Australia Audit and Risk committee. His role with Simpson Farms includes managing the financials, marketing of fresh and processed product and operations of the fresh packing and processing business.

**Why selected?** John is focussed on key industry issues and increasing consumption to match the coming increase in production. His involvement with previous advisory mechanisms (locally and nationally), local government and qualified with a Bachelor of Business brings extensive corporate knowledge and understanding of the avocado industry. John brings a whole of industry perspective on supply chain and handling systems, marketing and promotion, and valuable skills in implementing strategic and marketing plans to the panel.



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# Domestic News

## Targeted scholarships for women in horticulture

*Source: North Queensland Register*



*Above - TARGETED SCHOLARSHIPS: Voice of Horticulture chair Tania Chapman and Victorian vegetable grower Emma Germano helped shape a new program that is dedicated to women.*

WOMEN involved in Australian horticulture have spoken. They want affordable access to development programs, to expand their professional networks and to boost their theoretical education.

In response to their calls, the research and development corporation Horticulture Innovation Australia (Hort Innovation) is working with Women & Leadership Australia (WLA) to roll out 20 targeted industry scholarships a year for the next five years.

Informed by feedback from over 20 of the industry's leading women at a dedicated Hort Innovation workshop in August, the initiative provides three different scholarship opportunities for women with varying leadership experience.

Each year, 10 scholarships will be available for emerging women leaders, five for women working in mid-level management and five for women working at a senior and executive level.

Both Hort Innovation and WLA will co-contribute to the part-scholarship for participants, which will reduce the cost of participating by around 60 per cent.

Hort Innovation chief executive John Lloyd said a recent Workplace Gender Equality Agency report showed that the agriculture, forestry and fishery industries are male dominated, with only 33.7 per cent of the workforce female.

"Low numbers of women in horticulture, combined with factors such as an ageing workforce, limited access to formal leadership training, declining interest in studying horticulture and a lack of

support around post-graduate research means that it is very hard for women to progress and develop in this industry," he said.

"This scholarship program will address these issues, and give women the tools needed to support long and profitable careers in horticulture."

Grower, advisory workshop participant and Voice of Horticulture chair Tania Chapman said the initiative will prove invaluable to women.

"Women's leadership is an issue that has probably not been tackled in the right way historically. We all know women have a different set of skills to men and all too often we don't actually get women to bring them out," she said.

"This leadership program will help keep women in the industry, as strong leaders, reminding them of what they've achieved, the skills they've got and spurring them on to do even greater things."

Participation in the programs will also enable women from the horticultural sector to network with women from a wide range of other sectors.

The scholarships are applicable for emerging leaders, women with mid-level management and leadership experience, and women working at a senior and executive level with a high degree of leadership experience.

All of WLA's courses are part-time, designed for those already employed and are delivered via a 'blended' teaching model (partly online, partly face-to-face).

WLA head of school Kelly Rothwell said the scholarship program is a first-of-its-kind in Australia.

"We are extremely proud to co-invest with Horticulture Innovation Australia.

This is a sustained developmental project that will transform the lives of many women right throughout the industry."

Places on the co-funded scholarship program are limited and Expressions of Interest close Friday, March 10, 2017.

For more information and to apply, go to the Women & Leadership Australia website [www.wla.edu.au/scholarships/horticulture.html](http://www.wla.edu.au/scholarships/horticulture.html).

## Backpacker tax finalised

*by Caroline Page, Avocados Australia's Communications Manager*

Australia's controversial Backpacker's Tax was resolved in early December with the 18-month political standoff broken by the Greens' Richard de Natalie.

The initial proposed figure was to be a 32.5 per cent tax, which was then reduced to a 19 per cent tax during the middle of last year, followed by further halts in the Senate and a final deal brokered by the Greens to a 15 per cent tax rate.

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## Domestic News continued

Avocados Australia CEO John Tyas said this will keep the country's avocado farmers in business.

"The biggest issue we had to deal during this ongoing saga was the lack of certainty for our farmers and their workers," he said.

"Without backpackers working in the avocado industry, many would have suffered."

"Avocados Australia had expressed its concerns with the higher tax rate as well as the industry's disappointment regarding the Government's less-publicised intention to collect 95 per cent of backpackers' superannuation."

The new bill came into effect as of 1 January this year, and the Australian Taxation Office has extended registration to 31 January due to earlier faults with the online registration system.

Backpackers holding a visa subclass of 417 or 462 can no longer claim the tax-free-threshold regardless of their residency status and must provide a tax file number (TFN), otherwise, employers will need to withhold at the top rate of tax.

Employers have also been warned not to employ or pay someone for work if they don't have permission to work in Australia.

For more information log on to: [www.ato.gov.au/Business/Your-workers/Employers-of-working-holiday-makers/](http://www.ato.gov.au/Business/Your-workers/Employers-of-working-holiday-makers/).

## On-farm biosecurity – there's an app for that

*Source: Plant Health Australia*

It might not be as entertaining or addictive as some apps, but the new FarmBiosecurity smartphone app will help take your biosecurity planning to the next level.

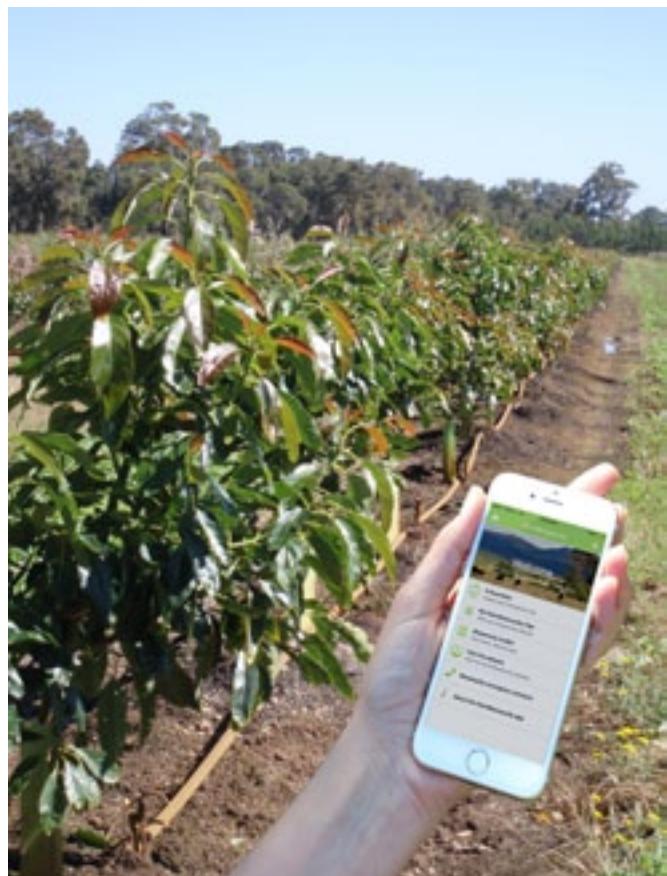
Available for both Apple and Android devices, the FarmBiosecurity app is a free tool that allows livestock and crop producers to create their own personalised biosecurity plan.

Alison Saunders, National Manager Horticulture at Plant Health Australia, says that the app is framed around the six biosecurity essentials.

"If you are wondering how to implement biosecurity measures on-farm, the six essentials are a good place to start. The app is based on the Farm Biosecurity Action Planner, so no matter how you prefer to do business, you will be able to create a plan and get started," said Ms Saunders.

Creating a biosecurity plan on the app is easy. Simply select the actions that apply to you or type in your own actions. Your selections then become a to-do list that you can share with others or email to yourself and print out.

Duncan Rowland, Animal Health Australia's Executive Manager Biosecurity and Product Integrity Services, said that FarmBiosecurity was a great resource for producers on the go.



"The app is easy to use and allows producers to take their biosecurity plan with them wherever they go, even if there is no internet access. Users can also create as many plans as they like, which is helpful for those who have multiple properties or production areas.

"Photos can also be attached as reminders for later actions or to let others know what activities need to be done. And, if you happen to spot anything unusual while you're out and about, the emergency hotline numbers for both plant and livestock producers are just a tap away," Mr Rowland said.

To download the FarmBiosecurity app, simply search for 'FarmBiosecurity' in the *App store* or *Google Play*. Those with a Windows-based smartphone will also be catered for, with a Windows-ready version of the app coming soon.

For more information and instructions on how to use the app, go to [www.farmbiosecurity.com.au/FarmBiosecurity-app](http://www.farmbiosecurity.com.au/FarmBiosecurity-app)



## WA fires up for new chilli and avo combined festival

**Source: Araluen Chilli & Avocado Festival**

Araluen's West Australian Avocado Festival will be merging with Araluen's successful Chilli Festival on 11-12 March 2017 to create a superfood fusion.

After 7 years at Araluen Botanic Park and 7 years in Fremantle, the festival's new home on the Victoria Park river foreshore will celebrate the two super-fruits with more than 100 stall holders.

Araluen Botanical Park's General Manager Grant Dixon said this year, patrons will be able to sample Perth's best chilli and avocado alcoholic beverages including Cocktail Gastronomy's avocado margaritas, Bar Lafayette will be offering 'Avocoladas' Bushshack Brewery's popular Avocado beer will be returning to the Festival.

"We have something to suit everyone's taste buds," he said.

"For the sweet tooth how about a chocolate chilli filled Bomboloni or if savory is more your style try a French crepe with avocado and chilli wiener schnitzels."

Mr Dixon said celebrity chefs will be demonstrating how to use chilli and avocado in everyday cooking.

There will also be entertainment from some of Perth's best local talent and kids' activities to keep them entertained while their parents sample some of the best local produce.

"We can't wait to bring Perth the Hottest and Freshest Festival for 2017 with a great new location and a huge variety of stallholders – it's going to be a great day out for the whole family," Mr Nixon said.



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# Understanding irregular bearing better - flowering observations during 2015

By Simon Newett, Peter Rigden, Pat O'Farrell, Helen Hofman, Geoff Dickinson and Kaila Ridgway  
Department of Agriculture & Fisheries, Queensland

## Introduction

There are many factors that contribute to irregular bearing. While these can occur at any time during the growth cycle, climatic conditions and the state of the orchard during the flowering and fruitset process can have the most dramatic effect especially in marginal climates.

Many growing regions in Australia can experience irregular bearing caused by cold conditions during flowering. These include North and Central Queensland for the 'Shepard' variety, and South Queensland, Northern NSW hinterland, Central NSW, Tristate and Western Australia for 'Hass'.

For fruitset to occur in commercial avocado varieties, it is generally accepted (although not categorically proven) that a contiguous three day period (about 72 hours) during which the temperature doesn't drop too low is required. This three day period of relatively warm temperatures is referred to as a 'pollination event'. For varieties that have an 'A' type flowering pattern (e.g. 'Hass') the lower temperature limit is about 10°C. 'B' type varieties (e.g. 'Shepard') are more sensitive to cold temperatures and the critical temperature is thought to be about 12°C. This relatively mild three day period is needed for successful pollen germination, pollen tube growth, penetration of the ovary, fertilisation of the ovary and early establishment of the embryo.

In an effort to learn more about irregular bearing in Australia and to create greater awareness of how conditions at flowering

can affect fruitset, collaborating growers and project team members in affected areas made observations in the orchard during the flowering season.

This article reports on the information gathered during the 2015 flowering season.

## Method

The observations made in the orchard included the start and end dates of flowering for the main varieties and any pollinising varieties present, flowering intensity, the types and relative numbers of pollinating insects visiting the flowers, and the date of appearance of small fruitlets. In a number of selected orchards at different times of the day additional measurements of the percentage of flowers that were in the male and/or female stages in both the main and polliniser varieties were also made. Any weather events such as rain and wind that had the potential to disrupt fruitset were also noted. Data loggers which recorded temperature and humidity every 30 to 60 minutes were installed on participating orchards (see Figure 1) so that flowering observations could be related to prevailing conditions.

In the analysis of the information, potential 'pollination events' were identified using temperature and humidity information from the data loggers. Based on the date of appearance of fruitlets an estimate was made on when fruitset was likely to have occurred for each 'wave' of fruitlets. The temperature range, insect pollinator activity, overlap of male and female flower stages and other weather conditions for the three days when the fruit was estimated to have set were studied. When pollination events did not result in fruitset, the information was also studied to try and establish why it did not occur.

## Observations

Figure 2 shows the approximate flowering times of 'Hass', 'Shepard' and some potential pollinisers around Australia during the 2015 season.

In the locations where 'Edranol' was used as a polliniser, flowering appeared well synchronised with 'Hass'. In the one orchard where 'Ryan' and 'Bacon' were used as pollinisers, they also synchronised well with 'Hass'. It will be interesting to see if this is repeated in different seasons. In North Queensland, 'Shepard' flowering coincided quite well with 'Hass' although this was considered unusual. (Note: in the recent 2016 season flowering times were back to normal and 'Hass' generally flowered too late to be useful for cross pollination of 'Shepard').



Figure 1. In participating orchards data loggers were installed in mini-Stevenson screens to record temperature and humidity through the flowering and fruitset period.



Figure 2. Approximate flowering times of 'Hass', 'Shepard' and some pollinisers in different locations during the 2015 flowering season. 'Shepard' flowered intermittently early in the season.

## Flower opening

Opening of male and female flower stages of 'Hass' ('A' type flowering pattern) followed the patterns described in the literature, namely, the female stage was open in the morning and the male stage in the afternoon. The overlap of male and female flower stages, which is very important for pollination, occurred in 'Hass' from about 11 am till about 2 pm. In Central Queensland this overlap was usually very short – less than an hour. This pattern was upset after cold nights (less than 10 °C) with the opening of the female stage being delayed. If it was cold enough the female stage did not open until the afternoon and remained open all night. The opening of the male stage

was also delayed after cold nights.

In 'Shepard' ('B' type flowering pattern) the male stage opened as expected in the morning but stayed open well into the afternoon. The female stage opened early to mid-afternoon and overlap occurred from about 2 pm (in North Queensland) or 3 pm (Central Queensland) until dark. After cool nights the female stage of the 'Shepard' variety sometimes did not open at all.

In Central Queensland it was observed that rain kept flowers closed whilst in North Queensland windy conditions appeared to discourage bee visits to the orchard.

## Understanding irregular bearing better continued

### Predominant insect pollinators in each region

While no conclusions can be drawn on the relative effectiveness of different insect pollinators, in most regions growers observed a range of insects on the avocado flowers, these included honey bees, native bees, flies and ants. Insects that stood out because of their large numbers were hoverflies in parts of South Queensland, flies in Tristate and flies and native bees in Western Australia. Lady beetles were also recorded in significant numbers on flowers in several locations.

In Central and North Queensland where hives had been introduced honey bees appeared to be the dominant pollinator whilst in other areas they were part of the "mix".

### "Pollination events"

The theory that successful fruitset requires three consecutive nights during which the temperature doesn't drop below about 10°C for 'Hass' (or about 12°C for 'Shepard') appears to have held true in most orchards observed in 2015. For 'Hass' the number of 'pollination events' in the season varied from as little as four in parts of the Tristate, eight to eleven in SW Western Australia and to more than 30 in North and Central Queensland. For 'Shepard' in Mareeba there were only five events. Where the number of events was limited, there were distinct waves of fruitset that appeared to follow potential 'pollination events'.

There did appear to be a notable exception. On an orchard in South Queensland, fruitset occurred on 'Hass' during periods when the night temperature dropped several degrees below 10°C; the block of trees being studied had not borne a crop for several years due to hail and frost. Could high levels of carbohydrate somehow allow fruitset to occur in cooler conditions?

It is interesting to note that there is also an upper temperature limit for fruitset to occur; research suggests that fruitset will not occur if the temperature reaches about 33°C. There is also information in the literature that suggests that pollen viability may be significantly reduced when humidity is low. Definitive

research on 'pollination events' and the effect of humidity on avocado pollen viability in the main varieties would be useful to help us to gain a better understanding of limitations to fruitset.

### Days for fruitlets to appear

In order to identify 'pollination events', it is important to understand how long it takes for such events to produce visible fruit. Opinions gathered from around the world on how long newly set fruit takes to become obvious to the naked eye (about 2mm in diameter) ranged from 6 to 8 days in Israel, about 14 days in Spain and to 17 to 18 days in New Zealand.



*Figure 3. The date was recorded when newly set fruit appeared.*

Observations on participating orchards during 2015 suggest a range of about 7 days for fruitlets to appear under warm conditions and up to about 15 days in cool situations.

This information is very approximate; it is based on general observation and also depends on when the petioles covering the developing fruit fall off to make the fruitlet visible. The time taken could be influenced by prevailing temperatures, degree of canopy wetness (to determine how soon the petioles will fall off) and perhaps the level of stored carbohydrates and how much competition there is for it from other parts of the tree.

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## Future plans

After pollination and fruitset, the amount of fruit retained through to maturity is the next challenge for the avocado tree. Fruit shedding results in significant losses, but if we can influence the growing conditions so that there is just a small percentage increase in retained fruit, this will make a big difference to yield. For the 2016/17 season, in addition to again collecting observations on flowering, pollinators and fruitset, we have asked collaborators to also record fruit shedding events for several months after fruitset. This will be related to the associated weather conditions and will hopefully improve our understanding of the conditions that may be associated with shedding events and their severity.

## What you can do to reduce the incidence of irregular bearing

Although we have little control over climatic events there are steps we can take to improve the chances of pollination, fruitset and fruit retention, and thus reduce the incidence of irregular bearing.

### 1. Optimise flowering

- Avoid late harvest as this leads to alternate bearing
- Practice regular canopy management to rejuvenate trees and open them up to better light penetration

### 2. Optimise insect pollinator activity

- Introduce 2 to 10 healthy beehives per hectare
- Spread hives out in tranches through the orchard and site them in warm, sunny spots protected from the wind
- Provide hives with easy access to drinking water and eliminate or at least minimise their exposure to insecticides



- Encourage alternate pollinators such as blow flies, hoverflies and flesh flies

### 3. Optimise pollination and fruitset

- In areas where the numbers of 'pollination events' are low, interplant with pollinisers (varieties with the opposite flower type to the main one) that flower at the same time as the main variety, this will increase the chances of getting fruitset under marginal conditions and improve the chances of fruitlets being retained since cross-pollinated fruitlets have a greater chance of being retained
- Apply foliar sprays of boron at flowering
- When humidity is very low at flowering use the irrigation system to raise humidity
- When temperature during flowering is expected to exceed 30°C use the irrigation system to reduce canopy temperature
- For healthy trees only, consider using Plant Growth Regulators to improve fruitset

### 4. Reduce fruit shedding

- Monitor soil moisture very closely and respond immediately with measured amounts of irrigation to keep soil moisture and aeration optimum
- Use overhead irrigation for evaporative cooling of the canopy during heat wave conditions

Note: Poor management of pests, disease, moisture, nutrition, canopy and root environment will also lead to irregular bearing however for the purposes of this article it is assumed that they are well managed.

## Acknowledgements

This article is prepared as part of project AV14000 'Achieving more consistent yields of quality fruit in the Australian avocado industry' which has been funded by Hort Innovation using the avocado levy and contributions from the Australian Government. The Queensland Government has also co-funded the project through the Department of Agriculture and Fisheries.

We would like to acknowledge all the participating growers around the country who have provided sites for the observation work and to thank them and the project team members for their time and effort in making all the observations.

**Figure 4.**  
Collaborating agronomist Tom Redfern examines the early fruitset on an orchard near Childers in Central Queensland.

# New Hort Innovation project to combat flesh bruising in avocado

By Melinda Perkins, Daryl Joyce, Noel Ainsworth, Lindy Coats and Peter Hofman.

In one of three new projects on Avocado Supply Chain Improvement, Hort Innovation Australia (HIA) has joined forces with the Queensland Department of Agriculture and Fisheries (QDAF), The University of Queensland (UQ) and Avocados Australia Limited (AAL) in a bid to reduce flesh bruising in 'Hass' avocado fruit.

Flesh bruising is quite probably the single most important internal avocado defect.

This disorder has a marked negative impact on consumers' repeat purchasing behaviour.

Recent Hort Innovation projects *AV10019: Reducing Flesh Bruising and Skin Spotting in 'Hass' Avocado* and *AV12009: Understanding and Managing Avocado Flesh Bruising* clearly established that the handling of fruit on retail display is the most critical control point for flesh bruising in the supply chain.

Moreover, around 18 per cent of consumers were dissatisfied with avocado quality due to flesh bruising. About 16 per cent of all consumers surveyed indicated their repeat purchasing behaviour was negatively affected as a result of it.

Various strategies to reduce flesh bruising at the retail level have been proposed with examples including smaller retail displays allowing for faster fruit turnover and using padded and protective packaging materials.

However, there is a need to compare and contrast these approaches from efficacy and cost-benefit perspectives so as to provide best practice guidance to industry.

As part of our commencing two-year *AV15009: Supply Chain Quality Improvement – Technologies and Practices to Reduce Bruising project*, existing and emerging solutions to the flesh bruising problem will be critically assessed, rated and communicated via AAL's online Best Practice Resource as well as in Talking Avocados and technical reports, including to HIA.

Approaches to reduce fruit handling by retailers and consumers will be developed and road-tested in the project's second year.

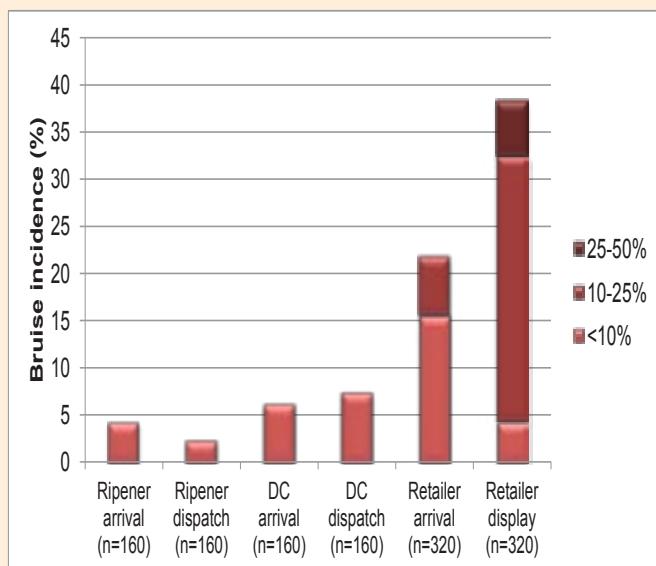
Non-destructive ripeness assessment technologies are already available in laboratory and quality assessment applications. But their comparative accuracy, robustness, cost and utility need to be determined for adoption at retail level.

A prototype in-store decision aid tool to help consumers assess avocado ripeness was developed in the course of *AV12009* in collaboration with Paul Gapes at Pacific Data Systems (PDS) and Neil Tuttle at Griffith University (GU).

Via a force sensor placed under the thumb, the novel device indicates fruit firmness in terms of fitness for use on a user-friendly display that pleases consumers.

Nonetheless, further refinement and field testing of this in contrast with other potentially better devices is needed to deliver best possible decision aid tools for use at retail level.

The possibility of producing fruit inherently less susceptible to bruising is another area being researched in *AV15009*.



**ABOVE:** Incidence and severity of 'Hass' avocado flesh bruising through the supply chain. Adapted from Mazhar (2015), as presented in the final report for AV12009. Bruise severity is measured as the proportion of flesh volume affected by bruising.



**ABOVE:** A halved 'Hass' avocado fruit showing the flesh bruising that developed in response to a mechanically simulated moderate thumb compression pressure (~20 kgf) as applied to it at the firm ripe stage.

Currently factors contributing to avocado bruising susceptibility are not at all well understood.

Thorough examination of the scientific and anecdotal evidence will inform mindset and practice, including further research requirements. Also importantly, suspected links between bruising and disease that were strengthened in AV12009 are being reviewed. After flesh bruising *per se*, flesh rots is the second most common defect category reported for avocados at retail level.

The project's operations are being guided by a Project Steering Committee with representation from industry, AAL, HIA and QDAF. It draws on the considerable expertise of researchers with backgrounds ranging from supply chain management to postharvest biology, plant pathology and food science.

Project leader Professor Daryl Joyce ([daryl.joyce@daf.qld.gov.au](mailto:daryl.joyce@daf.qld.gov.au)) has extensive research experience in postharvest biology and technology of horticultural crops, including avocado.



*Prof. Daryl Joyce*



*Dr Lindy Coates*



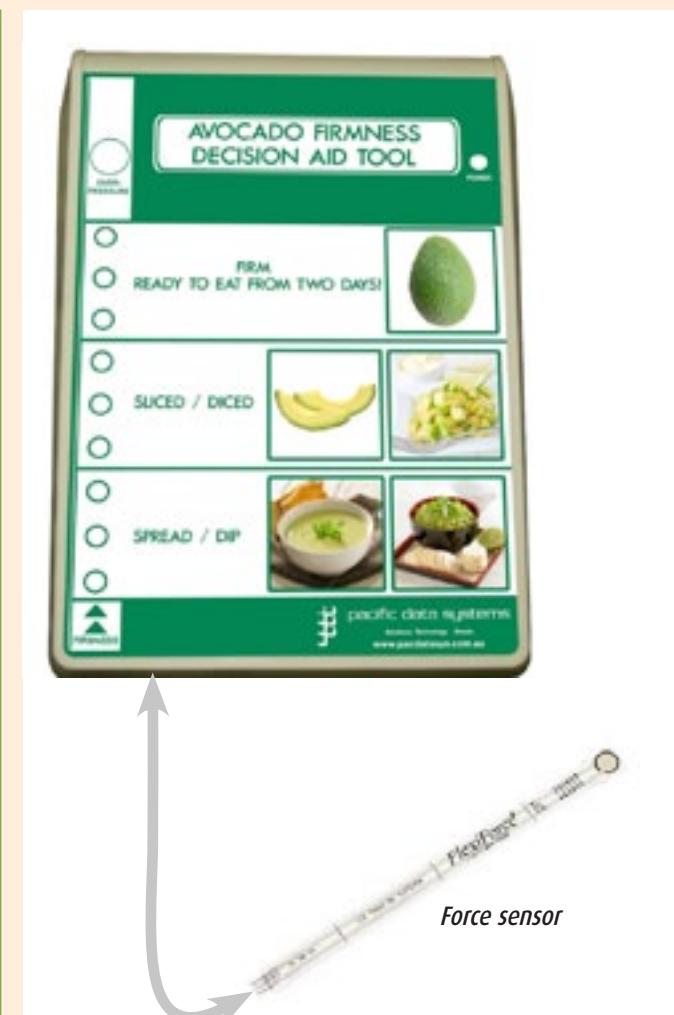
*Dr Peter Hofman*



*Noel Ainsworth*



*Dr Melinda Perkins*



*ABOVE: A prototype decision aid tool for in-store assessment of avocado ripeness by consumers. Gentle thumb pressure is applied to the fruit via the sensor and the device registers fruit firmness. A series of green lights indicate the level of ripeness to the consumer. A red light warns the consumer when excessive force is being applied and the fruit is at risk of being bruised.*

Dr Peter Hofman is a postharvest biologist and technologist with an international reputation in subtropical fruits, especially with avocado and mango.

Dr Lindy Coates is a postharvest pathology specialist expert in fruit pathogens, particularly those of avocado and mango.

Noel Ainsworth is an extension specialist and expert on supply chains, and provided technical support to AAL's Qualicado program.

Dr Melinda Perkins is a horticultural research officer with experience in food chemistry and postharvest technology, including with subtropical fruit crops.

*This project was funded by Horticulture Innovation Australia Limited using the avocado levy and funds from the Australian Government.*

# Australia's first horticultural robotics learning and development hub

By Hort Innovation

The Horticulture Innovation Centre for Robotics and Intelligent Systems (HICRIS) is Australia's first horticultural robotics learning and development hub. It is driven by industry's determination to adopt on-farm technologies, ramp up export capacity and develop future leaders in non-traditional areas of horticulture.

Located at the University of Sydney, HICRIS is initially hosting a \$10 million commitment to projects in robotics and autonomous technology that aim to increase farm efficiencies.

Work at the centre includes, but is not limited to, developing technology that can detect foreign matter; robots that can map tree-crop architecture; and ground-breaking autonomous weed identification and eradication capabilities. We are also investigating capabilities such as automated crop forecasting to predict the best time to harvest and ground penetrating radar sensors to measure factors such as soil water content and root systems.

HICRIS was officially opened by Assistant Minister for Agriculture Senator Anne Ruston on October 6, 2016, and is located within the University of Sydney's internationally-recognised Australian Centre for Field Robotics. It aims to attract Australia's brightest minds in engineering and science, and currently has six research fellows, five PhD students and six technical staff. It also acts as a

training facility for Australian growers and the future generations of students who are passionate about creating innovative solutions to drive the future of farming.

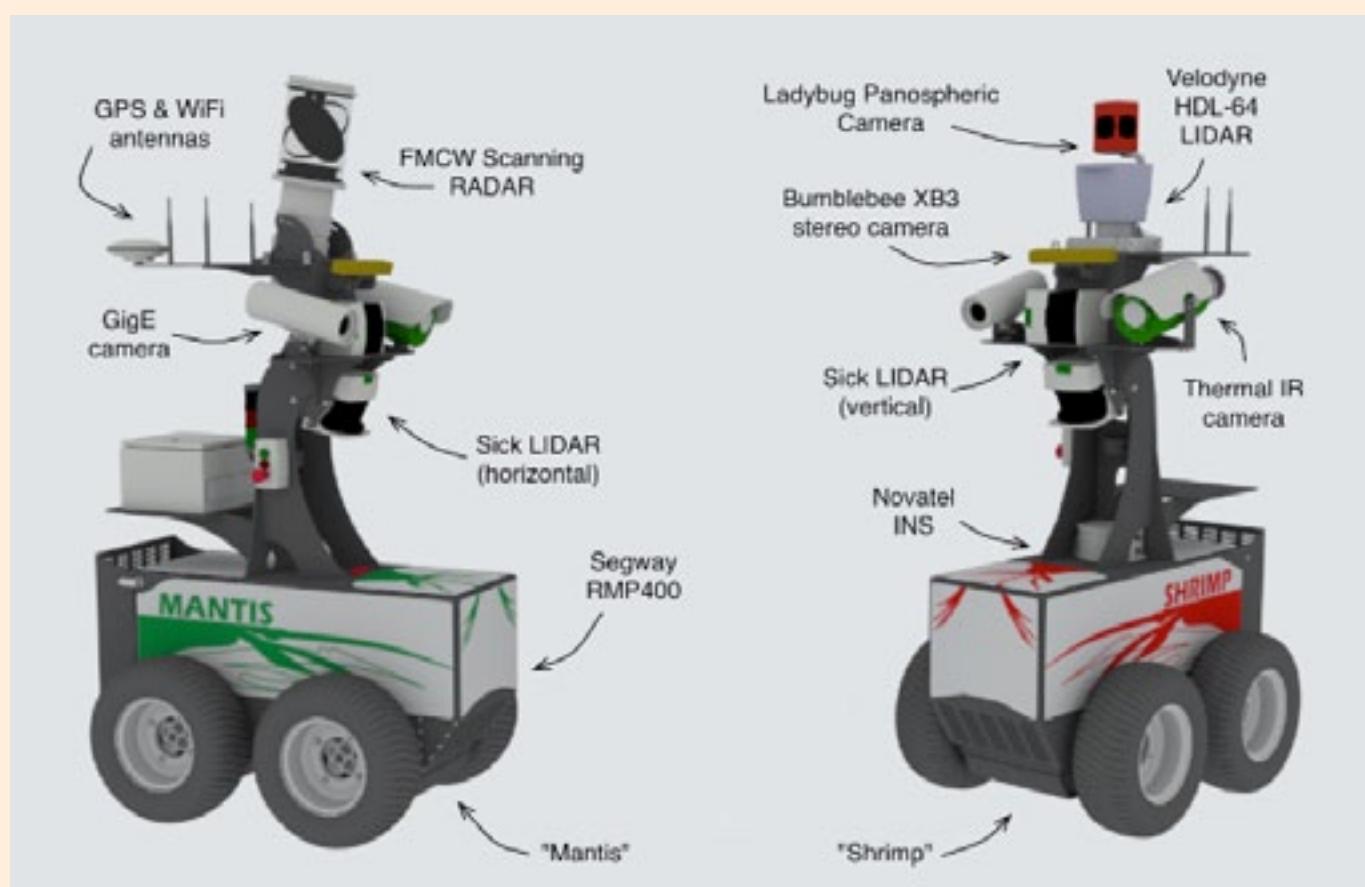
Ensuring industry access to the outputs from HICRIS research is key. Hort Innovation is working with growers, the university and the Australian Government to ensure the technology the centre is producing is commercially available in the not-too-distant future.

## The projects

The Horticulture Innovation Centre for Robotics and Intelligent Systems (HICRIS) is currently delivering three large-scale projects that aim to make various production practices more efficient:

- Multi-scale monitoring tools for managing Australian tree crops – Industry meets innovation (ST15004)
- Evaluating and testing autonomous systems developed in Australian vegetable production systems (VG15059)
- Using autonomous systems to guide vegetable decision making on-farm (VG15003).

Concurrently, Hort Innovation is working with the horticulture industry to inform research, technology and adoption-assistance needs.





HICRIS is funded by Horticulture Innovation Australia using the vegetable levy and funds from the Australian Government. University of Sydney Australian Centre for Field Robotics (ACFR) is the major delivery partner.

## The robots

Researchers at the Horticulture Innovation Centre for Robotics and Intelligent Systems will utilise and develop a range of technologies. Here are a few:

### The Ladybird Farm Robot

Developed by ACFR as part of a previous Hort Innovation project, the Ladybird conducts various on-farm crop intelligence and crop manipulation.

It is an omni-directional robot that is battery operated and solar powered. It has an operational envelop of 7–9 hours before requiring recharge, and continuous operation can be conducted during cloudless day operations.

The platform has numerous sensing systems including hyperspectral; thermal infrared; panoramic vision; stereo vision with strobe; lidar and global positioning. These sensors allow many aspects of the crop to be measured and assessed. It also comes with a robotic arm that has been used successfully to demonstrate targeted spraying as well as mechanical crop manipulation.

### RIPPA (Robot for Intelligent Perception and Precision Application)

A pre-production model of the Ladybird platform, RIPPA, like the Ladybird, was delivered by the ACFR and funded through a previous Hort Innovation project using vegetable levies and funds from the Australian Government.

RIPPA uses the same power, drive train, solar charging systems and computing technologies of Ladybird as these are well-understood and meet requirements. The platform configuration has been modified to make it lighter, rugged, and easier to operate. The platform operates for 10-12 hours before recharging and will have continuous operation on cloudless days.

### Mantis and Shrimp

Mantis and shrimp are general purpose perception research ground vehicles. They are flexible platforms which allow rapid deployment in new environments. They contain various sensors (see image above) and a soil conductivity sensor (dragged behind Shrimp), a natural gamma radiation sensor (also to measure soil properties) and recently a hyperspectral imaging sensor were recently added to the farmbots.

## The project (which applies to avocados)

HICRIS will initially support three large-scale projects which aim to increase on-farm efficiencies.

### Multi-scale monitoring tools for managing Australian tree crops – Industry meets innovation

This collaborative project will integrate the latest imaging and robotics technologies to provide mango, avocado and macadamia farmers with decision-support tools to help improve production and profit.

The data collected through this project, and the tools it develops, will help farmers to predict fruit quality and yield, and to monitor tree health including early detection of pests and disease outbreaks.

The University of Sydney is tasked with delivering a facet of this project which involves utilising the equipment at the Horticulture Innovation Centre for Robotics and Intelligent Systems to assist with mapping and data collection. Currently, the university is working on ways to improve mango counting and avocado pruning recommendations.

Predicting fruit count will help producers plan marketing and packaging, and it will reduce business risk. Field work at various Australian farm test sites have also been taking place.

Funded through: The Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit programme and funds from the Australian Government

Due for completion: Mid 2018

# New fungi named in honour of industry leaders

University of Queensland PhD student, Louisa Parkinson, has discovered a number of new fungi which have been named in honour of Australian avocado and research industry leaders.

Louisa is in the final stages of her PhD studies and expects to submit in March 2017.

Her work is supported by a research project lead by Liz Dann, AV14012 "Investigating tree mortality during early field establishment". Louisa also received an Australian Postgraduate Award for her work.

Ms Dann said Louisa has collected over 150 isolates of fungi from symptomatic roots of nursery and field trees.

"Analyses of the fungal DNA has shown that many different species are associated with black root rot, some of which have never previously been described," Ms Dann said.

Louisa and her advisory team have recently published a paper describing the three new species.

Two of these, *Gliocladiopsis peggii* and *Gliocladiopsis whileyi* have been named after well-known avocado researchers, Ken Pegg and Tony Whiley.

The third, *Gliocladiopsis forsbergii*, is named after plant pathologist Leif Forsberg, who ran the DAF diagnostic service for many years.

Glasshouse testing has shown that the new *Gliocladiopsis* species are not likely to be the primary causes of tree mortality in avocado.

More results from Ms Dann and Louisa's project will be published in coming issues of TA.



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# How pollination will change if Varroa destructor mite establishes in hives in Australia

**Source:** Plant Health Australia media release

Currently Australia has a high concentration of feral honey bee colonies – that is unmanaged hives in the wild—and these helpful insects pollinate many crops. But as overseas experience has shown, if there should be an incursion of the honey bee parasite *Varroa destructor* in Australia, this invader would kill off unmanaged hives, with the loss of these valuable pollination services.

Since *Varroa destructor* mites are found in the rest of the world, including New Zealand and our northern neighbours, Australia needs to be prepared.

That's why Plant Health Australia (PHA) has been working on a suite of honey bee biosecurity projects. Some are efforts to prevent an incursion, while others aim to assist our industries, including plant producers, to prepare for the changes that *Varroa destructor* is likely to bring.

The latest project is a series of videos available on YouTube and the BeeAware website, to explain the threat posed by *Varroa destructor* to our honey bees, how beekeepers can best protect their apiaries from pests, and the likely implications for plant producers.

According to Dr Jenny Shanks from PHA, there will be two main changes in the event that *Varroa* establishes. "The first is that many crop producers will find they need to use managed hives to pollinate crops for best quality and yield. This applies to many horticultural crops including almonds, cherries, strawberries, apples, pears, avocados, summerfruit, melons, some vegetables and plums," Jenny said.

"The second change is that beekeepers will need to change their beekeeping practices. They will need to visit hives more often to check for mites and to control them, which will put up the cost of pollination services."

Pollination using managed hives is a complex business. "The beekeeper and the producer need to consider many factors, and work together," Jenny said. "When hives are brought in, the number of boxes, their placement, the amount of brood, and whether sugar syrup is added to encourage more pollen collection, are all factors that will affect the pollination rate."

Jenny urges beekeepers and growers alike to seek more information from the new videos or the pollination section of the BeeAware website, to achieve best results.

The health of the bees also has a major impact. Jenny emphasises that beekeepers must follow good biosecurity practices so that hives function well for producers.

"Clearly if hives are diseased or half empty, a grower

is not getting the full benefit from that hive," Jenny said.

"Growers who hire hives are entitled to inspect them, to make sure they're getting their money's worth."

Recently, PHA developed the *Australian Honey Bee Industry Biosecurity Code of Practice* in consultation with beekeepers and governments to provide a framework for best-practice biosecurity measures.

Some sections of the Code are already mandatory under existing state and territory legislations. Some parts of the Code apply to all beekeepers; others apply only to beekeepers with 50 or more hives. The Code is available at [beeaware.org.au/code-of-practice](http://beeaware.org.au/code-of-practice).

All of this will become crucial should *Varroa destructor* establish here, but producers may find that they benefit from the services of managed hives now. Even if growers are getting good crop yields from feral bees and native pollinators, adding managed hives can often improve pollination rates further and therefore crop yield.

Depending on the crop, it can also produce larger or better quality fruit, and because pollination is more synchronised, it can result in more defined harvest period.

All of the honey bee work that PHA carries out is funded by partnerships between governments and industry. This has included: the Australian Government, state and territory governments, the Australian Honey Bee Industry Council, Grain Producers Australia, the Wheen Bee Foundation, Bayer Australia, Syngenta Australia, Capilano Honey and plant production industries through Hort Innovation.

See the honey bee biosecurity short videos at [beeaware.org.au/videos](http://beeaware.org.au/videos)

NOTE: Another species of Varroa mite, *Varroa jacobsoni* was discovered in Townsville in 2016 sparking a national eradication program to prevent it establishing.

## Effect of a varroa incursion on beekeepers and crop producers



Bee Biosecurity Video Series



# Freshcare Update – 2016

## Introduction

Freshcare was developed by the fresh produce industry, in response to the need for a practical, cost effective, industry focussed food safety program. Based on Good Agricultural Practice (GAP), Freshcare was designed to allow it to be implemented by all grower businesses, regardless of crop, size and location. Freshcare continues to operate as an industry-led, not-for-profit program.

Over the last 16 years, the Freshcare Food Safety & Quality standard has undergone regular reviews, to ensure it remains relevant to industry and complies with the requirements of its many users including growers, packers and the processing, retail and export market sectors. Freshcare Environmental standards were developed in 2006 and service both the fresh produce and wine grape sectors.

Now in its 16th year of operation, Freshcare's practical approach to helping growers and packers provide an assurance to customers that their produce is safe to eat and has been grown sustainably, has seen over 5,500 fresh produce and wine grape grower businesses adopt the program, making it Australia's largest and most widely adopted on farm assurance program.

## Freshcare Food Safety & Quality moves to accredited certification

Since its launch in July 2000, Freshcare has operated as a private industry standard, a structure that up until now has been adequate to meet the requirements of all stakeholders.

However, for Freshcare to remain an approved standard in the fresh produce sector, the program now needs to operate under a more formal structure of Certification Body approval and compliance, as an accredited certification.

Under accredited certification, an independent 'check of the checkers' takes place to provide a greater certainty and consistency of process. Thus ensuring that all Certification Bodies audit their clients consistently, in accordance with Freshcares' clearly defined standards, in an impartial manner and always on the basis of evidence; with the auditors from those accredited Certification Bodies required to formally demonstrate competence to audit to that agreed standard.

Whilst much of the rigour enforced through accredited certification was already in place when Freshcare operated as a private scheme (we reviewed Certification Body performance, set auditor competencies and checked audit reports) the independent recognition of the process through accreditation is key to the ongoing acceptance of Freshcare as a certification standard.

In February 2016 the Freshcare Food Safety & Quality Standard (FSQ) was approved by JAS-ANZ<sup>\*</sup> to operate as an accredited standard under ISO/IEC17065:2012; all Freshcare FSQ certificates will transition to accredited certification by mid-2017 as individual audits fall due.

<sup>\*</sup>JAS-ANZ – The Joint Accreditation System of Australia and New Zealand

**Accreditation:** verifies that a Certification Body has an appropriate management system in place to ensure they manage an agreed certification process, consistently and in accordance with agreed criteria.

**Certification:** is the process through which a Certification Body confirms a participating business has the appropriate systems in place to demonstrate compliance with the requirements of the Freshcare standard.

## Freshcare benchmarking to the Global Food Safety Initiative (GFSI)

A key driver in Freshcares' move to accredited certification is the retailer driven requirement for Freshcare to be benchmarked to the Global Food Safety Initiative.

The Global Food Safety Initiative (GFSI), provides an international 'benchmark model' against which other standards can be assessed. The GFSI process enables customers to accept fresh produce from suppliers with any food safety system that is recognised as equivalent to GFSI - knowing that an agreed standard of compliance will have been achieved.

Already in Australia, GFSI benchmarked systems are required for direct supply to both Costco and ALDI. This requirement is likely to extend to all major customer groups, initially for direct supply, but ultimately, in time, for indirect supply from farm level – so Freshcare needs to be prepared.

Now an accredited certification, Freshcare has achieved the first step on the path to GFSI benchmark status; the next step is to submit a draft benchmark document to GFSI for review. However, the full benchmark cannot be submitted until early 2017, when Freshcare has operated as an accredited certification for at least 12 months. If everything goes to plan, Freshcare hopes to be fully GFSI benchmarked by mid/late 2017.

## Freshcare Standards – New Editions

In 2016, Freshcare launched the fourth edition of its Food Safety and Quality Standard (FSQ4), and the third edition of the Freshcare Environmental Standard (ENV3).

The new standards are more practical and streamlined, have a better structural alignment and have improved access to guidance material.

All audits from the 1st January 2017 must be undertaken to the new edition standards FSQ4 and ENV3.

Copies of the Freshcare FSQ4 and ENV3 Standards can be downloaded from the Freshcare website: [www.freshcare.com.au](http://www.freshcare.com.au)

## Harmonised Australian Retailer Produce Scheme (HARPS) – the driver for change

One of the most commonly heard criticisms of quality assurance in the fresh produce sector is the duplication of systems or standards that an individual business may face when supplying more than one major customer.

Whilst the systems/standards may be almost identical in content, the fact that no one system is accepted by all customers' usually results in extended audit time, extended reporting time and resultantly significant cost.

Certification Bodies try to equip their auditors to deal with this duplication, but for large producers, supplying several of the major retail chains and/or food service providers, the duplication in compliance is often a costly, time consuming nightmare. It's not uncommon for a business to have to demonstrate compliance to five separate, yet similar standards.

The "QA Harmonisation" project funded by Horticulture Innovation Australia (HIA) was undertaken to address this issue in the fresh produce sector. The project has been supported by the five biggest grocery retailers in Australia, namely Coles, Woolworths, ALDI, Costco and IGA. It is estimated that the fresh produce market share covered by these businesses is approximately 70% of the total Australian market.

The result of the QA Harmonisation project is the Harmonised Australian Retailer Produce Scheme (HARPS). HARPS has resulted in the alignment of the major grocery retailers in Australia accepting a suite of Food Safety standards (including Freshcare FSQ4), that will allow growers and packers to complete a single audit against a single standard + HARPS, that will satisfy all stakeholders, rather than audits against multiple standards.

For more information on HARPS visit [www.harpsonline.com.au](http://www.harpsonline.com.au)



## Freshcare announces GLOBALG.A.P benchmark initiative

Australian growers looking to enter key export markets are set to save significant cost and complication once global and domestic food-safety certification requirements are combined. The popular, industry led Freshcare Food Safety and Quality Standard (FSQ4) announcing in September that it will benchmark against the widely accepted GLOBALG.A.P. Standard to provide an export market version for Australian growers.

The new initiative being delivered through Horticulture Innovation Australia – using vegetable industry levy funds and funds from the Australian Government – in partnership with peak industry body AUSVEG, will have a significant impact for growers in many export sectors.

Historically, growers have had to undertake a lengthy, complicated and costly transition to implement an entirely new food safety standard (GLOBALG.A.P. – standalone) for export market access. Successful completion of benchmarking, and recognition of the Freshcare Standard by GLOBALG.A.P., would enable Australian growers to build on their existing food safety and quality certification (Freshcare) as a streamlined compliance process to access export markets.

The initial step in the process is to identify / clarify the requirements for Good Agricultural Practice (G.A.P) in the key export markets for Australian fresh produce, including a number of Asian markets and the Middle East; considering required scope/s – food safety, quality, environmental, biosecurity, worker welfare, etc.

Industry consultation has already commenced and any businesses interested in making input at this preliminary stage, should contact Clare Hamilton-Bate – [clare@freshcare.com.au](mailto:clare@freshcare.com.au) or 0407 930 586.

Once the scope of the benchmark is confirmed, a gap analysis of the Freshcare Food Safety & Quality Standard (FSQ4) will be conducted against the requirements of GLOBALG.A.P. Certification (v5.0)

A Freshcare 'Bolt on' based on outcomes of Step 1 and Step 2 will then be developed to submit to as part of the formal benchmark submission to GLOBALG.A.P. in early 2017.

Regular project updates will be provided through both the Freshcare website and industry communications, with the project is due for completion by mid / late 2017.

# Avocado industry hopeful exports to Thailand and Japan will begin by end of year

*ABC WA Country Hour*

By Joanna Prendergast

The Australian avocado industry says it is the closest it has ever been to securing new export agreements for lucrative avocado markets in Thailand and Japan.

Avocados Australia chief executive John Tyas is hopeful exports from Western Australia will begin for the coming harvest in September.

Mr Tyas said the main concern for both countries was Australia's fruit flies, but negotiations over an export protocol for the flies had taken significant steps forward.

"Later this month I understand there will be some audits undertaken by the Japanese Government of pack houses in WA, so that's a really good sign that things are progressing," he said.

"Our government is in negotiations with the Japanese Government around a suitable protocol based on what we call conditional non-host status for hard green avocados.

"What that means is when the avocados are in their hard condition picked from the tree they're actually not susceptible to fruit fly. It's only once they start to soften that fruit fly can infest them.

"The protocol that we're working on for Thailand has been presented to Thailand and there's been feedback on that."

## Paving the way for other states

So far discussions have centred around how to manage WA's Mediterranean fruit fly, but Mr Tyas said the industry was hoping a successful WA export industry would pave the way for fruit from states with Queensland fruit fly.

"At the moment we've seen a real opportunity for WA in particular because Mediterranean fruit fly is a concern in a number of countries," he said.

"Acceptance that hard green avocados are not a host of fruit fly is well accepted around the world and there is a lot of scientific data to support that. So we should be able to get that over the line fairly soon."

Mr Tyas said in terms of Queensland fruit fly, there had been research done in Australia in the past that had demonstrated Hass avocados were not a host of Queensland fruit fly in their hard green condition.

"However, we've found that the level of trials that was done, or the number of insects that were tested, wasn't sufficient to meet international protocols," Mr Tyas said.

"So there is work underway at the moment that'll hopefully be finished at the end of this year that will prove with an adequate level of rigour for international trade."



*PHOTO: New markets are essential for the Australian avocado industry, John Tyas says. (ABC Rural: Bridget Fitzgerald)*



*PHOTO: Discussions are underway about an export protocol dealing with fruit flies. (Supplied: Jamie Nicolaou)*

## Quality and supply vital

Mr Tyas said both countries presented good market opportunities for WA growers, but produce needed to be marketed as clean and green.

He said quality and reliable supply was paramount.

With the West Australian avocado industry expected to increase production significantly, Mr Tyas said new markets were essential for the industry.

"It is a concern and there are new plantings going in all the time, so it's essential that we open new markets," he said.

"There are other markets that we are trying to open. China is another one that we'd love to have access to, and there are other markets throughout Asia in particular that don't have protocols."

"Most of our export fruit goes to Singapore and Malaysia at the moment and those markets don't require protocols."

"We need to keep pushing every avenue that we can to get new markets for this increased supply."

Mr Tyas said he would like to see Australia's avocado exports grow from 4 per cent to about 10 per cent in coming years

# Study predicts more rain for Australia as temperatures rise

According to new findings out of the ARC Centre of Excellence for Climate System Science, farmers can expect a wetter future for parts of the continent while predicting drought for others as air temperatures continue to rise. The study revealed that a two-degree rise in average global temperatures would lead to a 10-30 per cent increase in extreme downpours.

Steve Sherwood, a professor at the Climate Change Research Centre at the University of NSW, who contributed to the research, said global warming would have a clear impact on rainfall.

"With two degrees of global warming, Australia is stuck with either more aridity, much heavier extreme rains, or some combination of the two."

The scientists examined the heaviest rainstorms across Australia, focusing on the different climates of Sydney, Melbourne and Darwin. They found greater average humidity led to an increase in heavy downpours. Even in areas where humidity and rainfall were lower, a two degree increase in global temperature led to an 11 per cent increase in total rainfall.

The study's lead author Jiawei Bao said most parts of Australia would be affected by an increase in global temperatures.

"Extreme precipitation is projected to increase almost everywhere in Australia from tropical regions in the north to mid-latitudes in the south and from dry deserts in the centre to wet places along the coast," he said.

*Source: Fresh Plaza, 18 Jan2017*



# Member Profile

# Eric Carney



**How long have you been in the avocado industry? What industry (if any) were you in before this?**

I have been managing, growing, packing and marketing avocados for more than 13 years in Queensland.

Prior to this I was managing a wholesale air division in a travel and tour company that sold discounted international airfares and tours from negotiated contracts.

**What prompted you to become an avocado farmer? What do you enjoy most about being an avocado farmer?**

I grew up on an avocado farm and enjoyed the farming experience, the open space, the ability and challenge of growing a tree along with the crop and later reaping the benefits when harvesting.

**What varieties of avocado do you grow? What variety do you prefer to grow and why?**

I grow roughly 85% Hass or Hass-like varieties with the remainder being Shepard.

**Are there any growing practices you use that are different to standard growing practices (that you would like to share)?**

I don't believe we use any practices that are unique but we do spend considerable amount of effort in selecting good rootstocks, significant soil preparation and a good amount of attention to the biology of the soil.

**What are the biggest issues affecting avocado growers in your region?**

In our region and I assume most, one of the biggest issues is minimizing Phytophthora root rot. Without an optimal tree, production and quality will not meet their full potential.

**What's the best advice you would give to someone who has just started/entered growing avocados as a business?**

Don't be afraid to reach out and ask for help. We have all made mistakes, there is no reason to repeat the mistakes of others.

**Do you have a favourite avocado recipe? What is it?**

My preferred use of an avocado is usually with Mexican-inspired food.

Simply mash an avocado or two, add a dash of garlic salt, sometimes a squeeze of lime... done. Use the spread on soft tacos, burritos, tostadas, rolled tacos or even just dipping corn chips.

**Complete the following sentence:**

*I am a member of Avocados Australia because.....*

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# The Amazon grocery service posing a new threat to supermarkets

**The Amazon grocery service posing a new threat to supermarkets has been hiring in Australia for a year**

By Tony Yoo, Paul Colgan, Business Insider



*AmazonFresh trucks sit parked at a warehouse on June 27, 2013 in Inglewood, California. (Photo by Kevork Djansezian/Getty Images)*

US online retail giant Amazon is recruiting highly skilled workers in Australia for fresh food delivery operations, in an apparent confirmation of its ambitious plans for the local retail market.

The company's website currently has more than 100 job vacancies listed for Australia. While Amazon's cloud computing business Amazon Web Services has had a local presence for several years, there is a range of software development roles in Brisbane for AmazonFresh — further evidence that the company's much-speculated entry into the Australian grocery scene is imminent.

"As a member of a team focused on innovation, you will be responsible for building a system to support a new and confidential AmazonFresh initiative that will help revolutionise the grocery shopping experience," said one job ad for a software development engineer.

While the internet giant has never officially confirmed or denied speculation that it would open up operations in Australia, there have been leaked reports that it aims to "destroy" local retailers by undercutting their prices by as much as 30%.

Profit margins at the major Australian supermarkets have been under pressure for years as German low-cost entrant Aldi has expanded its market share in Australia, while the fashion sector has also been squeezed by the arrival of global giants like H&M, Uniqlo and Zara.

Richard Goyder, group managing director of Wesfarmers, which owns Coles supermarkets, warned retailers last year that Amazon had the capacity to "eat all our breakfasts, lunches and dinners" unless the sector proved itself more competitive and innovative.

Amazon has not responded to Business Insider's request for comment.

The first Australian job ad that specifically mentioned AmazonFresh — for a software development engineer — seems to be from February last year, while the rest were posted from September to October. All Australian AmazonFresh positions are located in Brisbane.

And as a strong hint applicants will actually be working on a new Australian product, several positions call for "experience taking a project from inception through launch".

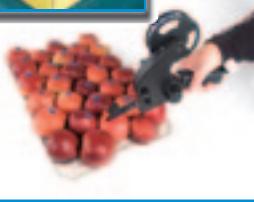
AmazonFresh gradually rolled out from 2007 in the US, where it costs \$US14.99 per month of unlimited delivery for those with Prime membership, which costs \$US99 per year. The service last year launched in its first location outside the US — in London — for £6.99 per month for Prime members.

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*Amazon founder Jeff Bezos, who famously says 'your margin is my opportunity'. Photo: Spencer Platt / Getty Images.*

There is no Australian version of Amazon Prime membership, although Australians may subscribe to Prime Video, which is just the streaming entertainment service. Prime Video had a surprise launch in Australia in November, yet another indication that Amazon is intent on rolling out its full suite of services here.

The two major Australian supermarket chains, Woolworths and Coles, both run online grocery shopping sites, as well as smaller players like Harris Farm and internet-only retailers like Kogan.

The best guess for the launch of AmazonFresh in Australia is late this year. A June report in The New Daily reported an inside source as saying "no later than 2017 to early 2018", while a November AFR report stated that the general retail launch was postponed from March to September this year so that it could wait until the grocery operations were ready.

Amazon already runs an "Australian" website with the .com.au domain, but it has been a virtual store that has its orders fulfilled overseas. Aside from Australia, the company currently runs 13 international websites: USA, Canada, Mexico, UK, Germany, France, Italy, Netherlands, Spain, Japan, China, India and Brazil.

When the Australian website turns into a genuine local operation, it will reportedly use the same brands as other regions — Prime, Prime Now and PrimeFresh. The AFR has previously reported that distribution centres would be set up in every state, and even some physical retail stores for rural centres.

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# Nature & More replaces labels with laser mark

By Nina Pullman, Fresh Produce Journal

Organic avocados and sweet potatoes with 'Natural Branding' are being trialled with Swedish retailer ICA

Dutch organic supplier Nature & More has partnered with Swedish retailer ICA in a large-scale trial of laser-branded fresh produce.

Dubbed 'Natural Branding', the technique uses laser marking to replace sticky labels and reduce plastic packaging. It has been developed by Spanish firm Laser Food, which has been trialling it on a small-scale across Europe for several years.



ICA and Nature & More are branding organic produce using a laser mark

The ICA-Nature & More trial has begun by branding sweet potatoes and avocados, products with skin that poses difficulties for sticky labels.

On organic avocados alone, ICA and Nature & More will save around 725,000 packaging units in the coming year, equating to around 220km of plastic. Organic produce is usually packed in plastic to differentiate it from conventional, but this disappoints organic consumers who shop with both environmental and health concerns in mind, Nature & More said.

The laser marking process removes some pigment from the outer layer of the skin of the product but does not affect quality or shelf life. The method was approved by EU Organic certifier SKAL to ensure no additional substances are used. The energy needed for a marking is less than one per cent of the energy needed for a sticker.

Paul Hendriks, packaging expert at Nature & More, said: "The most sustainable way to pack is not to pack. I have been saying that for years, but it has been difficult to bring about in the supermarket."

"With Natural Branding it becomes a logical option. We are very glad that ICA, as a front-runner, is taking this sustainable road with us. We think green consumers will be delighted, because research shows again and again that they disapprove of plastic packaging."

A large advertisement for SIDEWINDER TREE INJECTORS. The top half features a stylized white graphic of a tree trunk and branches. Below this, the word "SIDEWINDER" is written in a large, bold, black font. To the right, the words "TREE INJECTORS" are written in a smaller, bold, black font. A blue power drill with a white probe attached is shown on the right side. The bottom left contains contact information: "Have moved again", "Same phone 07 5447 1621", "New address 19 Carramar Street Tewantin Qld 4565", "Email geoff@treeinjectors.com", and "www.treeinjectors.com".

# Hort Innovation Marketing Update

By Claire Tindale-Penning, Marketing Manager, Hort Innovation

November and December saw a focus on digital communications via Facebook and Instagram.

A combination of fun facts, unusual food combinations and delicious dishes saw some lively discussions and good sentiment shown toward action and usage.

Incorporating video content over November and December assisted in achieving cost efficiencies and brought some great engagement.

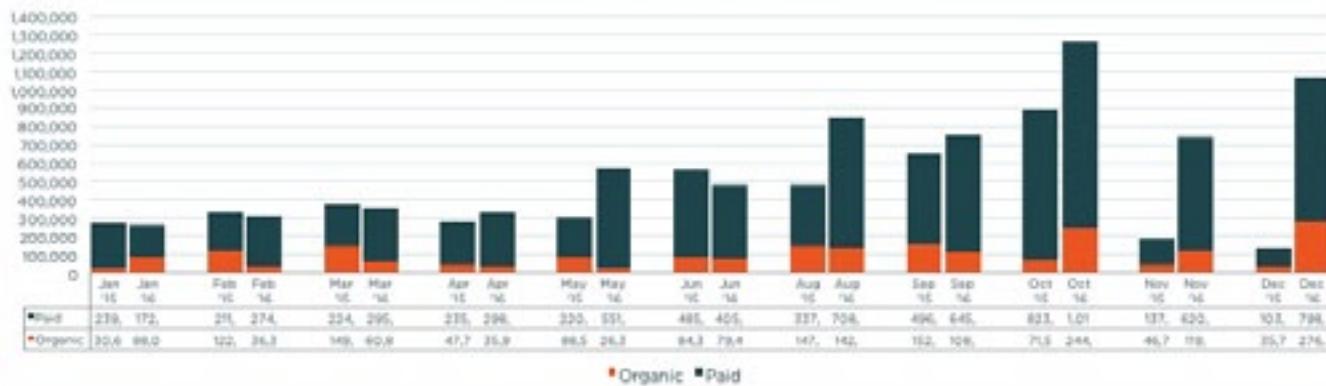
Delivered reach for the month of December was up month on month, with December delivering the highest reach\*

for the 16/17 financial year (\*October figures include the #makebrunchnotwar campaign as well as the "always on" Facebook approach).

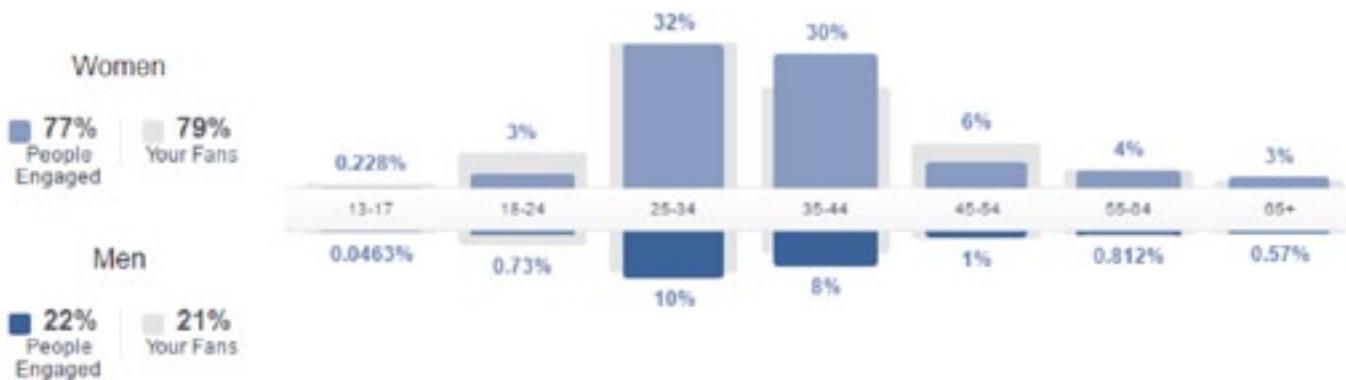
During November and December, the engagement across the demographic profile of the Facebook page stayed relatively stable with a slight decline in men aged between 25-34. This can be attributed to the time of year with Christmas taking up more of peoples' focus.

*NOTE: The demographic engagement is represented by people who have liked, commented on, or shared your posts or engaged with your Facebook Page in the past 28 days. Instagram does not provide the information as yet.*

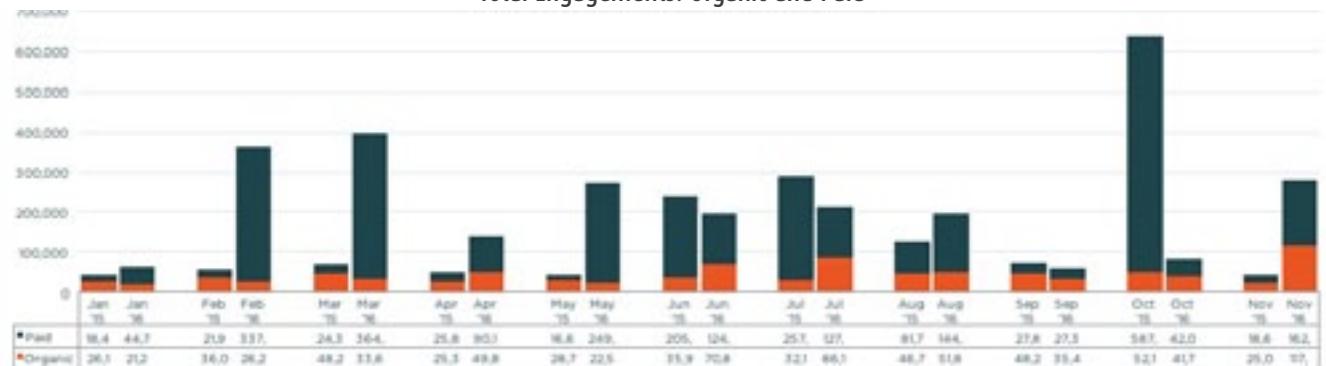
Delivered Reach: Organic and Paid (YOY)



Australian Advocados Facebook Page's Demographic



Total Engagements: Organic and Paid



## Hort Innovation Marketing Update continued

General Engagement across December was down on November, but up significantly year on year. The use of seven videos and one static image this December compared to last year (which was solely photographic content) has resulted in such high year on year results.

### Facebook

The Top Performing piece of content for November was the 'Salmon and Avocado Nori Rolls' video, which delivered an Engagement Rate of 40.94 per cent. This post saw a high amount of users showing high intention to try the recipe even with the video being six minutes long.

The second best Top Performing content with regard to Engagement Rate was 'Kids. You both know you have seeds

inside you...', the imagery was cute and fun, plus the copy was informative and blew some minds!

In third place was 'Refreshing, healthy and delicious' which was a simple suggestion of adding avocado to fruit salad. Although a fruit, many Australian Avocados fans only use avocados in savoury dishes so they were interested in the suggested addition and shared an intention to try –adding a little gourmet to their everyday!

In December, the top performing content was the 'Avocado and soft shell crab rice paper rolls' video, which delivered an Engagement Rate of 29.5 per cent. This post saw a large amount of users showing high intention to try the recipe.

## TOP PERFORMERS



## TOP PERFORMERS



The second best Top Performing content with regard to Engagement Rate was '*Refresh yourself with an Avocado Bubble Tea...*', the unusual recipe and imagery was inspiring with a huge amount of fans starting threads about where they could buy it and then get really excited to make it themselves.

In third place, was '*Berry your face into this delicious Christmas coloured salad*' which was a perfectly timed post in regards to being only days away from Christmas Day. We saw a lot of comments from fans planning to have it on their tables for their lunchtime celebration.

## Facebook Sentiment

**In November**, Australian Avocado fans saw the sweeter side of avocados with new recipes pairing avocados with fruit salads and rock melon in pasta dishes. The reactions were all very positive with many fans sharing their intention to try as soon as the next day.

The month saw a horse-racing post having to be removed

and an apology was posted in replacement. Whilst there was some disappointment from fans, majority were grateful for our decision to remove the post and happy about the apology.

Even with a less than positive reaction to that post, the Australian Avocados Page continues to build a community and fans are seen to be regularly interacting with each other and the brand.

**For December**, Australian Avocados brought the cooler side, wind on your peel, berry tasty, bubble delights and more.

We saw a massive intent to try the new recipes, with many of them "pushing the box" on new and different ways to use avocados.

Fans were excited to try avocados with ingredients they would not normally have thought of.

The 'Bubble Tea' was exceptionally popular as was the 'Berry Salad', which; according to discussion feeds, was being made for many Christmas lunches.

-  **Gregory Linde** Do you know what's going to happen next week? I'll tell you what's going to happen. I'm going to make an avocado, vintage cheddar sandwich on multigrain grain, accompanied by a muesli bar and perhaps a banana. That's what's going to happen and it will be good.  
Unlike · Reply · Message · 0 3 November at 15:47
-  **Sarah Kathleen Brown** I love avocados! Eat them plain, just cut in half and eat with a spoon but never thought of mixing them with fruit! I'm so going to try this!  
Unlike · Reply · Message · 0 30 November at 20:46
-  **Tara Howlett** Marcus Allan I bought nori sheets that's the sea weed today. You could make these easy how fun!  
Unlike · Reply · Message · 0 2 - 16 November at 22:31
-  **Rachelle Jessica Conley** WHAT? how could your light hearted avocado posts offend anyone?  
Australian Avocados I love your posts. Please don't hold back being awesome  
Unlike · Reply · Message · 0 4 - 10 November at 14:11
-  **Corina Eaton** Mark Ellis you really really need to make this for me!!!!!!!  
Unlike · Reply · Message · 0 1 - 15 November at 23:21
-  **Nicolle Harvey** Avocado is a fruit something I can eat without worrying about my health.  
Unlike · Reply · Message · 0 4 - 17 November at 11:05
-  **Tracy Wykes** YUM!! Never thought to put avocado with fruit!! 😊  
Unlike · Reply · Message · 0 1 - 19 November at 23:05
-  **Jamal Safetly** Delicious thank you I try it tomorrow  
Unlike · Reply · Message · 0 1 - 14 November at 19:06
-  **Jo Catnip Harvey** Nyssa Carrier what do you think? I'd be down with this, om nom nom  
Unlike · Reply · Message · 0 1 - 26 November at 13:23
-  **Tammy Goodrich** Weres mine looks Devine to make and eat!  
Unlike · Reply · Message · 0 1 - 27 November at 20:56
-  **Australian Avocados** Follow the link in the post Tammy! You'll be eating it in no time 😊  
Like · Reply · 28 November at 09:51
-  **Jennifer Dagher** Australia has the best avocados !!! ❤️❤️❤️❤️  
Unlike · Reply · Message · 0 1 - 29 November at 11:49
-  **Australian Avocados** Yes we do Jennifer 😊  
Like · Reply · 0 1 - 29 November at 17:13

-  **Deaun Hallam** I might do that plenty at home at the moment 😊  
Unlike · Reply · Message · 0 1 - 20 November at 19:07
-  **Kim Mamic** Kasey here is another yummy avo recipe to make!!  
Unlike · Reply · Message · 0 2 - 26 November at 15:34
-  **Callum Frederick Rudolphy** Ebony click the link an scroll around 😊  
Unlike · Reply · Message · 0 1 - 28 November at 18:26
-  **Ebony Matson** Avocados are the best!!  
Unlike · Reply · Message · 0 2 - 28 November at 19:40
-  **Jiji** Chuby Burger and Avocado sauce xxxx:  

-  **Unlike · Reply · Message · 0 3 - 28 November at 07:36**
-  **Bonnie Rose** Katie Walters  
Like · Reply · Message · 28 November at 19:40
-  **Katie Walters** Omg I'm making this tmrw  
Unlike · Reply · Message · 0 2 - 28 November at 19:48
-  **Australian Avocados** For dinner or lunch Katie?  
Like · Reply · 29 November at 09:40
-  **Katie Walters** Haha dinner probably! Bonnie Rose the avocado ppl are speaking to me!!  
Unlike · Reply · Message · 0 1 - 29 November at 09:50
-  **Bonnie Rose** Hahahahaha  
Unlike · Reply · Message · 0 1 - 29 November at 09:54
-  **Australian Avocados** OMG Avos can talk!!! ARGH! Enjoy your dinner 😊  
Like · Reply · 29 November at 17:13
-  **Bonnie Rose** Avo cray crayyyy  
Unlike · Reply · Message · 0 1 - 29 November at 17:22

## Hort Innovation Marketing Update continued

 David Fleming Losing points for presentation I know, but this is easy and great



Unlike · Reply · Message · 2 · 29 December 2016 at 21:20

 Australian Avocados Fantastic David! So glad you enjoyed it 😊

Like · Reply · 1 · 30 December 2016 at 19:18

 Josephine Velardo Is this tuna? I've never thought to add fruit into fish!! I am so intrigued!!

Unlike · Reply · Message · 1 · 27 December 2016 at 16:58

 Australian Avocados Yes it is Josephine, they pair really well together. Check the recipe out via the link in the post 😊

Like · Reply · 30 December 2016 at 19:19

 Josephine Velardo Yummm!! I will give it a try !! Thanks !!

Unlike · Reply · Message · 1 · 30 December 2016 at 19:21

 Coffee Etiquette Darren James McGrath Michael Quigley can i make thus Christmas day???

pretty please!!!

Unlike · Reply · Message · 1 · 19 December 2016 at 17:48

 Australian Avocados Absolutely Coffee Etiquette 😊

Like · Reply · 20 December 2016 at 10:00

 Rebecca Freiverts Looks like that's our salad choice for Sunday Grace Freiverts. What do you think?

Unlike · Reply · Message · 1 · 21 December 2016 at 06:30

 Grace Freiverts Sounds good! Rebecca Freiverts

Unlike · Reply · Message · 1 · 21 December 2016 at 11:27

 Australian Avocados A great Christmas salad 😊

Like · Reply · 21 December 2016 at 18:20

 Amatt Amataitl Richmond I'm glad I don't hav allergies with anything that Yu throw at me yum yum 🍋

Unlike · Reply · Message · 4 · 27 December 2016 at 10:20

 Australian Avocados Recipe link is in the post Amatt! Enjoy 😊

Like · Reply · 27 December 2016 at 10:44

 Amatt Amataitl Richmond thx!! will look it up nd enjoy it!!

Unlike · Reply · Message · 1 · 27 December 2016 at 10:56

 Joshielle T Reyes Need this in my life

Unlike · Reply · Message · 1 · 6 December 2016 at 22:30

 Australian Avocados Done! So easy to make Joshielle, follow the link in the post 😊

Like · Reply · 7 December 2016 at 09:55

 Sally Stewart I'm so trying this!!!

Unlike · Reply · Message · 1 · 6 December 2016 at 14:59

 Australian Avocados Hope you like it as much as we do Sally 😊

Like · Reply · 1 · 6 December 2016 at 17:03

 Sally Stewart Australian Avocados can't imagine not-it's got all the right ingredients!!

Unlike · Reply · Message · 1 · 6 December 2016 at 17:12

 Peggy Leung Want to try it. Yummy—

Unlike · Reply · Message · 1 · 14 December 2016 at 19:12

 Australian Avocados The recipe link is in the post Peggy! Enjoy 😊

Like · Reply · 1 · 15 December 2016 at 09:25

 Emily Brightside Adam that's my kind of avocado

Unlike · Reply · Message · 1 · 12 December 2016 at 14:10

 Kylie Malatait Julie Collins you will like this page lol

Unlike · Reply · Message · 2 · 11 December 2016 at 21:26

View 1 more reply

 Australian Avocados Yay Julie!

Like · Reply · 1 · 12 December 2016 at 09:48

 Georgie Georgiou I love Avocados. I eat them almost everyday ... yum!!

Unlike · Reply · Message · 1 · 12 December 2016 at 07:58

 Australian Avocados That's so great Georgie! 😊

Like · Reply · 12 December 2016 at 09:48

## Top Performing creative

### Avocado & Prawn Recipes

Add An Avo Every Day For A Quick Fix! Try Our Avo & Prawn Recipes

[www.Avocado.org.au/Avocado-&-Prawn](http://www.Avocado.org.au/Avocado-&-Prawn)

The *Avocado and Prawn Recipes* ad was the top performing ad for the account in December which makes sense given the festive season and the type of dishes people are preparing for the time of year, recording 394 clicks for December.

### Australian Avocados

Avocados Are The Healthy Superfood Grown Right Here In Australia

[www.Avocado.org.au](http://www.Avocado.org.au)

The *Australian avocados* ad dropped to second place with 302 clicks.

### Recipes

Choose From A Variety Of Mouth - Watering Avocado Inspired Recipes.

### How To Store Your Avocado

Sprinkling With Lemon Or Lime Juice Will Slow Oxidation. Learn More.

### How To Select Avocados

Test For Ripeness By Gently Pressing The Top Of Your Avocado.

The top 3 sitelinks remain the same for both November and December: 328 clicks, 308, 244 clicks respectively:

## Top Performing key words

The keyword "Avocado" continues to be the top performing keyword driving a total of 615 clicks with an average click through rate (CTR) of 6.87 per cent.

Interestingly, "Prawn recipes" is the second biggest keyword with 386 clicks but with only an average CTR of 1.65 per cent. Guacamole is the fourth performing keyword with 228 clicks and a massive average CTR of 15.89 per cent



## Top referral channels

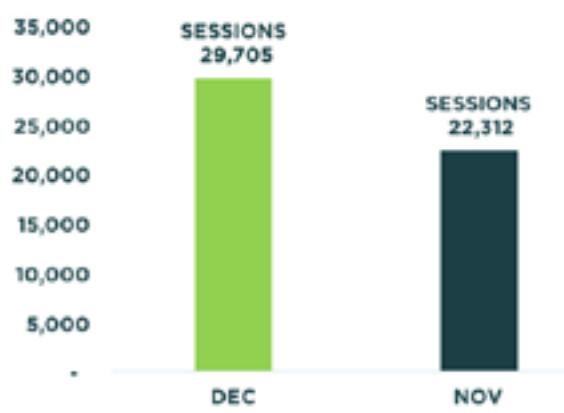
Organic Search was again the top referral source for the Australian Avocados website providing 35 per cent of the total traffic. This a great result considering there are not too many new activities happening at the moment.

The second most important was Social with 34 per cent of total traffic which supports the "always on" approach that has been employed within the Communications program.



## Website Traffic

### CONSUMER SECTION



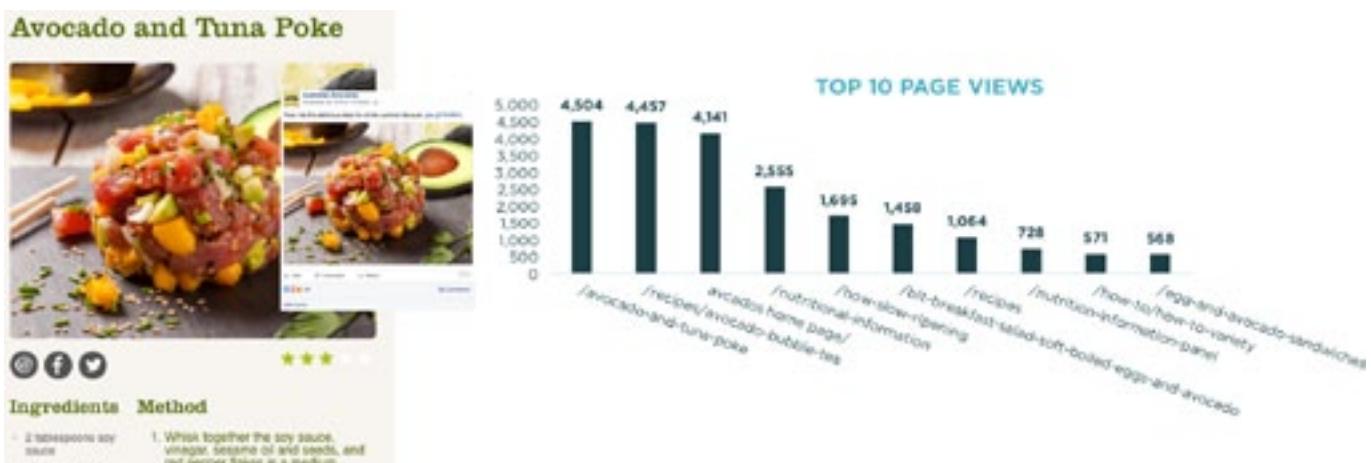
**33%**

**INCREASE IN TRAFFIC**

Source: Google Analytics

## Hort Innovation Marketing Update continued

### Top Performing pages



The “Avocado and Tuna Poke” recipe page was the most visited page during the month of December with 20 per cent of total traffic. “Poke bowls” are very on trend right now. A Poke (pron. Poke – ay) is a Hawaiian dish which is based on raw fish being used with a variety of fresh ingredients. It’s simple, healthy, versatile and extremely tasty. This concept has been taken up by a few Australian foodservice venues and tweaked a bit so

now you see Poke bowls featuring other proteins besides raw fish as well as an array of fresh vegetables and starches like noodles and rice. It is the perfect dish to showcase avocados and highlight the flavour and textural benefits it offers while at the same time ticking the box of *wholefoods* and *health* which are top of mind with so many consumers.

### Glossary of social media measurement terms

Metric	Definition
<b>IMPRESSIONS</b>	The number of times your ad was served
<b>MoM</b>	Month on Month – a comparison of the previous month and the increases/decreases observed
<b>YoY</b>	Year on Year – a comparison of the previous year and the increases/decreases observed
<b>eCPM</b>	The average cost you've paid to have 1,000 impressions on your ad
<b>FREQUENCY</b>	The average number of times your ad was served to each person
<b>UNIQUE PAID REACH</b>	The number of people your ad was served to
<b>POST ENGAGEMENTS</b>	The number of actions related to your Page's posts as a result of your ad
<b>CP/POST ENGAGEMENT ('CP / PE')</b>	The average cost you've paid for to have 1 Post Engagement on your ad
<b>POST ENGAGEMENT RATE ('PE RATE')</b>	Post Engagements / Impressions
<b>VIDEO VIEWS (75%)</b>	The number of video views equalling or exceeding 75% of the video as a result of your ad
<b>CP/75% VIDEO VIEW</b>	The average cost you've paid for to have 75% video view on your ad
<b>75% VIDEO VIEW RATE</b>	Video Views (75%) / Impressions
<b>LINK CLICKS</b>	Number of clicks to an offsite link on your ad
<b>CP/LINK CLICK</b>	The average cost you've paid for to have 1 Link Click on your ad
<b>LINK CLICK THROUGH RATE (CTR)</b>	Link Clicks/Impressions



# New avocado videos for ripeners, wholesalers and retailers

Avocados Australia recently worked with DAF Queensland and a number of commercial players, including Freshmax, LaManna and Indooroopilly Fruit, to develop two new educational videos.

Both videos are short, five-minute introductions to best practice handling and are aimed at improving avocado quality in the supply chain.

The first video, **"Ripening: Avocado ripening and storage - A video guide for wholesalers"**, is aimed at wholesaling and ripening staff and looks at ripening and storage of avocados. It highlights the complexity of the avocado ripening and considers the many variables that can have an effect on fruit quality. Providing an overview of best practice handling processes, it details how these different variables, such fruit maturity, time since picking and the temperature at which fruit has been held, should be addressed. In addition it also looks at the how to handle the fruit before and after ripening as this is just as critical to ensure the final quality of the fruit.

The second video

**"Retail handling: Avocado ripening and handling - A video guide for retailers"** is designed to help retailing staff improve their handling and management practices to deliver the best quality avocados to consumers. This video was filmed at Indooroopilly Fruit, one of Brisbane's leading independent fruit retailers.

Drawing on industry research and insights, the video provides simple tips on handling and presentation that can make significant differences to the quality of the fruit. Ultimately this impacts the profitability of the category for retailers. The video also outlines the different resources that are available from Avocados Australia to support retailers with their staff training.



*Patti Cooper-Harrison, Quality Manager – De Luca Banana Marketing/Freshmax demonstrating quality assessment procedures in the video*



*Joseph Guardala, owner – Indooroopilly Fruit, assists with filming of the retail handling video.*

The videos will be available on the online Best Practice Resource (via the new Avocados Australia website).

Retailers, wholesalers and ripeners that are looking for access to staff education materials are encouraged to contact Avocados Australia to discuss the wide array of resources that are available.

The videos have been provided to the avocado category managers at Coles, Woolworths and Aldi and have been or will be made available to relevant staff within these chains.

---

*The wholesaling and retailing videos were developed in collaboration with Queensland DAF as part of project AV15004 which is funded by Hort Innovation using the avocado research and development levy and funds from the Australian Government.*

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# 2016 Qualicado workshops hailed a success

Around 700 people attended Avocados Australia's 13 Qualicado workshops in 2016.

These workshops covered a range of topics to facilitate productivity, supply chain management and quality improvement across the sector.

Workshops were held in each of the main production regions.



*Colin Foyster discusses his orchard work  
at the North Queensland Qualicado*

The North Queensland workshop held at Aussie Orchards Growers & Packers (Foyster's) and the Western Australian workshop at Bendotti's both had more than 100 people in attendance.

Workshops were also held in each of the major Central Markets across Australia. A total of 73 people predominantly from the wholesaling sector attended one of the five metropolitan workshops.

Feedback from the regional workshops indicated a significant majority of participants had gained value from attending the workshop and would use the information they received at the workshops to improve or change some of their practices.

At the metropolitan workshops, feedback also indicated most participants found the information they received at the workshop was useful and as a result it was likely they would change practices within their business – particularly in relation to technical fruit management issues.

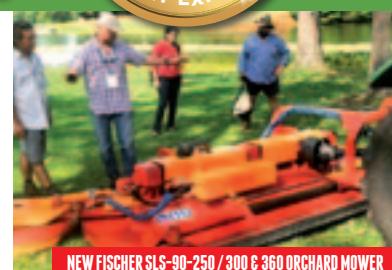
The results revealed that there was room for improvement in usage of the Best Practice Resource (BPR) by those in the wholesaling and ripening sector.

Avocados Australia is currently working with HIA on future plans for industry engagement and will report on these as details are developed.

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A large agricultural machine with orange and yellow components, labeled 'FISCHER GL6K/90 470-550'. It appears to be a self-propelled or tractor-pulled unit with a large cutting head and a central tank.

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# Record supply weeks mark the end of 2016

Infocado data collected during October and November 2016 revealed the industry experienced record supply weeks from 22 October through to 11 November (weeks 44 - 46).

Dispatch figures collected from Australian packers and consolidators and the New Zealand exporters indicated that in each of these weeks more than 385,000 trays were dispatched to the market.

This is an all-time record for the Australian avocado market and comes on the back of an 'on-year' and record imports from New Zealand. Over the 2016/2017 season the New Zealand industry is expected to send over 4.4 million trays into the Australian market.

Week/ Date	Week 44: w/b 22 Oct 16	Week 45: w/b 29 Oct 16	Week 46: w/b 5 Nov 16
Trays dispatched	<b>391, 019</b>	<b>391,196</b>	<b>386, 349</b>

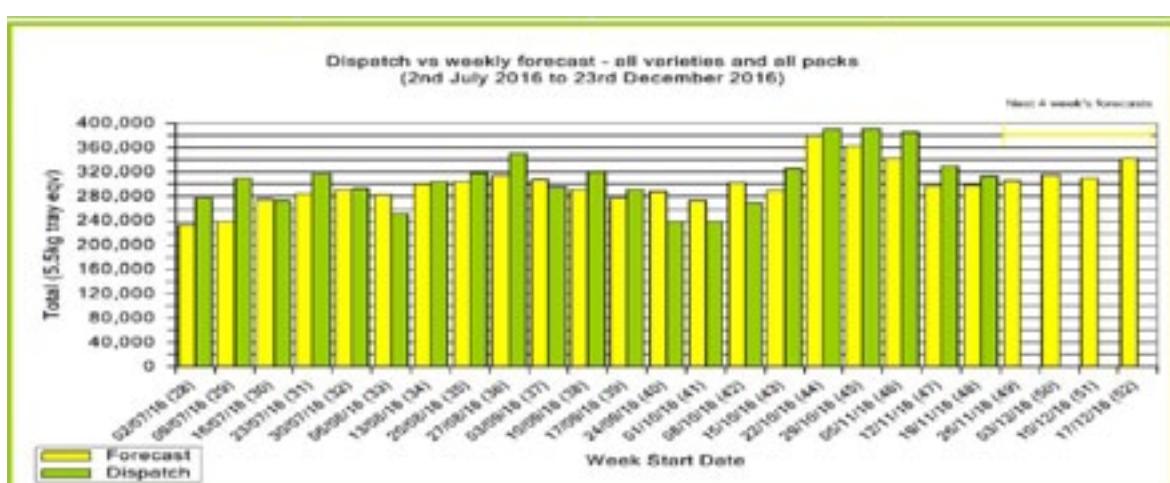
Table 1: Reported dispatches – Week 44 to 46 – October – November 2016.

Over the six week period from 5 November 2016 (weeks 44 - 49), retail prices with the two major supermarkets remained stable across key metropolitan markets. Online shopping prices for single fruit purchases showed that Coles maintained retail prices at \$2.00 per piece and Woolworths at \$2.50 - \$3.00 per piece over the period.

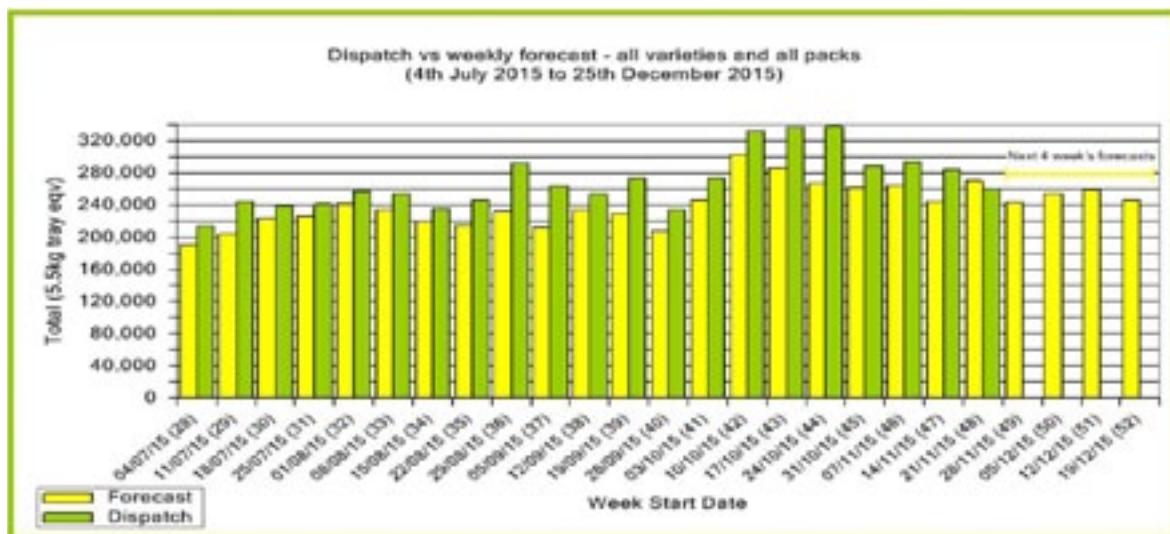
A quick look back to the same period last year shows the market was receiving 260,000 - 300,000 trays per week with the highest supply a bit earlier from 10 October to 24 October 2015

Avocados Australia's CEO John Tyas said this result was a credit to all those involved in the supply and marketing of avocados in Australia.

"There are many factors that have contributed to this successful result, not the least of which include good planning, good information, good communication, good marketing and promotion – strong indicators of a united industry," he said.



Graph 1: 2016 dispatches and forecast supply over weeks 28 (w/b 2/07/2016) to week 52 (w/b 17 Dec 2016) showing record supply weeks 44-46 (w/b 22 Oct - 5 Nov 2016)



Graph 2: 2015 dispatches and forecast supply over weeks 28 (w/b 4 July 2015) to week 52 (w/b 19 Dec 2015)

# Snapshots - International Avocado Research Update

These snapshots are compiled from abstracts of published scientific papers collated in the CAB Direct database and from research presentations delivered at the 2015 World Avocado Conference (Peru). Dates provided reflect the date research was published or presented.

If you would like a copy of the abstract related to these snapshots please contact Jenny Margetts, P2P Business Solutions, at jmargetts@bigpond.com or 0418215276.

## Production

### Comparison of post-harvest behaviour of Carmen Hass and Hass avocado

Mexico (2016): In Mexico, fruit from 'off-season' flowering of 'Carmen Hass' is harvested in June and July, when market supplies are lowest. Although 'Carmen Hass' is phenotypically similar to 'Hass'; the postharvest behavior is still unknown. The aim of this study was to determine differences in the quality and shelf life of avocado cultivars Carmen Hass and Hass, based on the production of ethylene and some of the changes associated with ripening. The results showed 'Carmen Hass' produced less ethylene, showed more rapid changes in external colour and had significantly lower sugar content and total phenols; which manifested itself in a less intense fruit and shorter shelf life of flavour.

### LiDAR and thermal images fusion for ground-based 3D characterisation of fruit trees.

Chile (2016): A portable ground-based system was designed and evaluated for a manual thermal and geometrical characterisation of an orchard, merging thermal images with LiDAR-based range readings in order to obtain a 3D thermal reconstruction of the crop. This was to overcome limitations of systems (drone and satellite) that only measure canopy characteristics from above the crop.

### Very high density plantings of Hass avocados achieved over 40 t/ha in the first year of production

Chile (2015): Avocado growing areas in Chile are mostly located on hillsides. Traditional planting densities at 6 meters are difficult to prune and harvest. In the past 10 years there has been an effort to reduce planting distances. Currently there are thousands of hectares of commercial orchards planted at 3x3 m and 2.5x2.5 m. In order to amortize the capital invested in new developments, trials at higher densities are being carried out at distances such as 2.5x1.25 m and 1.25x1.25m. Nitrogen fertilization was tried in Orchards planted at 2.5x1.25 m and 1.25x1.25 m in spring and summer. Three different doses were tried in spring and three in spring + summer applications, plus the control without nitrogen. During the second year harvest, fruit size, flowering and the third year production were analyzed. The results showed that the spring application of Nitrogen is the one that determines primarily the amount of harvest and the resulting flowering for the next year. Summer application is mostly related with final fruit size. Economic result shows that it is possible to payback all the initial investment and indirect and production costs with the first crop.

### Effect of the number of Edranol pollinators over Hass productivity

Chile (2015): The need for pollinizers to obtain higher crops on Hass avocados has been proved in different countries. In order to evaluate the effect of different percentage of pollinizers, a net was placed over groups of trees to isolate them from the rest of the orchard. The trial was carried in a Hass Avocado orchard with 5.5% of Edranol as Pollinizer, planted at 3x3 m. Statistical design was completely randomized Blocks. Treatments were: T0: No nets, 5.5% pollinizer under nets the following treatments: T1: 12 Hass and 0 Edranol; T2: 11 Hass and 1 Edranol and T3: 10 Hass and 2 Edranol. Flowering, tree crop and fruit size were evaluated. Flowering, crop and fruit sizes differed year to year, but results clearly show that the treatment without pollinizer is the one that obtains the lowest crop yield. Additionally the treatments with pollinizer, despite having higher crops showed better fruit size.

## Pests & Diseases

### First report of *Neofusicoccum australe* in Chile causing avocado stem-end rot

Chile (2016): In May 2015, a new disease was found infecting avocado fruit from different orchards in Chile. The causal agent was identified as *N. australe*. Several species of Botryosphaeria have been reported on avocado, including *N. parvum*, *Fusicoccum aesculi* and *F. luteum*. This is thought to be the first report of *N. australe* causing fruit rot of avocado in Chile. Previously, *N. australe* has been reported on avocado trees, causing branch dieback in several countries, including Chile, and avocado stem end rot in California, USA.

### First report of *Neofusicoccum nonquae situm* causing branch canker and dieback of avocado in California.

USA (2016): In 2014, a Hass avocado tree and a Reed avocado tree in California exhibited branch dieback, including dry brittle bark and a powdery exudate on affected branches. Removal of the bark revealed large cankers. A single fungus was isolated and identified as *N. nonquae situm*. This is thought to be the first report of *N. nonquae situm* as a wood canker pathogen of avocado.

### Antagonistic yeasts with potential to control anthracnose

Mexico (2016): Avocado is severely affected by anthracnose disease due to the infection with *Colletotrichum gloeosporioides* and *C. acutatum* on the fruits. In this study, avocado fruits with anthracnose symptoms were collected in Morelos, Mexico. Two phytopathogenic fungi were isolated from these fruits as well as a further eleven yeasts from avocado were isolated. Three of these yeasts showed *in vitro* antagonistic activity against *C. gloeosporioides* and *C. acutatum*. Analysis of the isolated yeasts revealed that one of the yeast strains reduced disease incidence caused only by *C. gloeosporioides*. Another strain caused a significant reduction in the incidence and severity of disease caused by both *Colletotrichum spp* and is a potential natural

alternative for controlling anthracnose infection and associated loss in avocado crops.

## Use of by-products

### Chemical and technological properties of avocado

U.K. (2016): The fibrous residues of processed avocado seed was shown to have relatively high proportions of soluble dietary fibre, neutral detergent fibre and hemicellulose which allowed the product to retain four times its weight in water and six times its weight in oil. These properties therefore make processed avocado seed a promising ingredients in industrial food systems.

## Health

### Tools for the determination of phenolic and other polar compounds in avocados

Spain (2016): An assessment of compounds in the peel and seed of overripe avocado fruit, the main bi-product of processing, showed the presence of A-type procyanidins. This holds interest for developing functional foods, nutraceuticals and cosmetics.

### Potential use of avocado compounds in treatment of avocados

Mexico (2016): Antimicrobial peptides (AMPs) are cytotoxic to cancer cells. In this work, cytotoxicity of PaDef defensin from

avocado on the MCF-7 cancer cell line (a breast cancer cell line) and evaluated its mechanism of action. This is the first report of an avocado defensin inducing intrinsic cancer cell death, which suggests that it could be a potential therapeutic molecule in the treatment of cancer.

## And for all the cake lovers out there...

### Physical properties and microstructure of butter cake added with avocado puree

Malaysia (2016): The effect of addition of avocado puree on the physical and microstructure of butter cake was studied. Butter cakes were made by replacing butter with 10, 30 and 50% of avocado puree. Physical properties including batter specific gravity, volume, colour and image analysis of cellular structure of the crumb were analysed. Texture profile analysis was determined using texture analyser. The results showed that with the increased amount of avocado puree, the batter specific gravity increased while volume of the cakes reduced. The texture profile analysis showed that the cakes became harder as the amount of avocado puree increased, while cohesiveness was not affected. The cellular structure of the crumb exhibited a decrease in the number of air cells while the average cell size increased with addition of avocado puree. The colour analysis showed that the cake crumb became darker as the avocado puree was increased.



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# News from Around the World

**News from Around the World contains reproduced articles that have been published by various international news sources.**

## Monsanto shareholders approve Bayer deal

Shareholders of Monsanto Company (NYSE: MON) have given the green light to a US\$66 billion takeover from a German multinational Bayer AG.

If regulatory approvals go ahead, the merger would combine two of the world's largest companies involved in crop protection, crop science and seeds.

Around 99 per cent of all votes cast were in favour of a merger with a wholly owned subsidiary of Bayer Aktiengesellschaft, through a transaction that would see Monsanto shareholders receiving US\$128 per share in cash once the merger is closed.

"We are pleased we received such strong support from our shareowners," said Monsanto CEO Hugh Grant.

"This is an important milestone as we work to combine our two complementary companies and deliver on our shared vision for the future of agriculture.

"By bringing together our expertise and our resources to drive this shared vision, we can do even more together to benefit growers around the world and to help address broad global challenges like climate change and food scarcity."

Bayer AG CEO Werner Baumann said the acquisition was driven by our strong belief that this combination could help address the growing challenges facing farmers and the agricultural industry.

"Together, Bayer and Monsanto will be able to offer the new, innovative solutions that our customers need. We look forward to completing the transaction and working closely with Monsanto to ensure a successful integration," Baumann said.

The transaction is subject to customary closing conditions, including the receipt of required regulatory approvals. Bayer, with the support of Monsanto, has now submitted a number of filings, including the U.S. Hart-Scott-Rodino Act filing.

Closing is expected by the end of 2017.

[www.freshfruitportal.com](http://www.freshfruitportal.com)

## Mexico: Bioactive coating prolongs the life of Hass avocados

Scientists at the Department of Food Research (DIA) at the Faculty of Chemistry (FCQ) of the Autonomous University of Coahuila (UAdeC), have developed a natural bioactive coating to prolong the shelf life of Hass avocados.

The project, which was coordinated by Dr. Cristobal Noe Aguirre Gonzalez, a research professor at the DIA and level III member of the National Research System (SNI), aimed to assess the effect of a bioactive coating, that was based on Candelilla wax and the leaf extract of *Larrea tridentata*, on the shelf life and

quality of the Hass avocado (*Persea americana* Mill).

"The goal of this project was to develop a natural coating that would extend the shelf life of avocados, i.e. that would preserve its quality, characteristics and optimum consumption state for a longer period at its point of origin, or that would allow it to arrive at distant markets, mainly Japan, maintaining its quality," stated Jorge Alejandro Aguirre Joya, who conducted this research in his doctoral thesis in science and technology in food at the Faculty of Chemical Sciences of the UAdeC and collaborated in the project.

The researcher said the coating also inhibited the growth of phytopathogenic fungi that cause deterioration and loss of quality in the fruit.

"We managed to develop a coating that, when compared to the commercial coatings, increases the shelf life for a longer period and that allows us to inhibit the development of these plant pathogens," said the scientist.

Currently there are different techniques to extend the commercial life of avocados, such as vacuum packaging, cold storage, and modified atmosphere; however, they only preserve the product.

"There are some commercial options to extend the shelf life of avocados. However, none of them focuses on inhibiting the growth of microorganisms or the damage they cause. There are pests, such as the *Colletotrichum gloeosporioides* and the *Alternaria alternata*, that can cause up to 46 percent of crop losses," Dr. Aguirre Joya said.

According to the specialist, the project is an alternative to solve the problems faced by avocado in its post-harvest, such as decreased quality and the damage caused to the fruit by the *Colletotrichum gloeosporioides* and the *Alternaria alternata* pests .

"The avocado is one of Mexico's main crops. We know that Mexico is the number one producer and exporter of this product and that it currently has big post-harvest problems because of these microorganisms and because of quality loss, which is reflected in economic losses, once the product reaches markets, such as Asia or Europe."

## More applications

Dr. Aguirre Joya said that this coating was especially designed for the Hass avocado, according to its characteristics and needs. However, researchers can generate similar coatings that are adapted to the characteristics of other fruits.

"It can be extrapolated to other fruits, adapting it to the surface characteristics of those fruits. It depends on every situation and what is required. We have some fruits, like the tomato, that has a lot of losses in post-harvest; the apples are a very important product in the region, while the melons are important in the Laguna region, among other fruits."

This development is aimed at producers, packers, and exporters of avocado. It was mainly thought of for the national market,

but it can be applied anywhere that produces, stores, or transports avocados.

"We are waiting to finalize this project, transfer it and make it a reality that can be a competitive advantage for the country. We already are the number one producer and exporter of avocado, but we can still raise our level of competitiveness and product quality," said Dr. Aguirre Joya.

Source: conacytprensa.mx

## Oxitec's 'self-limiting' GM Medfly ready for open field trials

After a series of successful contained environment studies across various countries, U.K.-based Oxitec is now ready to move to open field trials for its 'self-limiting' Mediterranean fruit fly (Medfly).

The studies demonstrated the GM Medfly's ability to successfully mate with others in the wild and subsequently suppress the pest population. The efficacy of the Oxitec Medfly and existing control methods were also examined.

"Over the past few years, the performance of our Medfly solution in testing across different countries has confirmed our belief that this product may deliver superior efficacy and an improved environmental profile as compared to many products on the market today," the company's chief scientific officer Simon Warner said.

"We are now planning to advance our environmentally-friendly Medfly product into field trials in different countries to demonstrate its potential in open environments."

The company said that Medfly, one of the world's most destructive agricultural pests, was difficult to manage by conventional methods because of its ability to infest many types of crops year-round, and that growers needed alternative technologies for control.

Oxitec's approach uses genetically engineered Medfly males that are released to mate with wild females. Their female offspring do not survive to adulthood and repeated releases result in a reduction of the pest population.

In the latest study, the Western Australia Department of Agriculture and Food (DAFWA) compared the mating performance of Oxitec's Medfly with that of sterile insects treated with radiation – another technique used to control the pest population.

As reported by DAFWA the mating performance of Oxitec's Medfly "was comparable with that of sterile males irradiated at low levels, and exceeded that of sterile males treated with a higher dose of radiation which is used to provide a better guarantee of sterility."

In 2010, Oxitec conducted the first study to demonstrate the efficacy of the self-limiting Medfly in collaboration with the University of Crete, Greece. In the trial, the Medfly pest



## Grower Member Application Form

### Avocados Australia Limited

ACN 105 853 807

The Australian avocado industry is a growing, successful and progressive industry. As the Australian avocado industry's peak industry body we work closely with all of the stakeholders that can have a direct impact on the marketplace. If you are looking to gain the maximum benefit from being a part of the Australian avocado industry we recommend that you become a member of Avocados Australia.

Avocados Australia provides online and offline information, programs, materials and events to advance the industry. On top of this there are other services we can provide that are only made possible through the support of our members. Join today. All membership enquiries can be directed to [admin@avocado.org.au](mailto:admin@avocado.org.au) or call toll free 1300 303 971.

For Associate and Affiliate membership application forms please go to: [www.avocado.org.au](http://www.avocado.org.au) or call **07 3846 6566**

### Member Details

Business name  
and/or trading name:

ABN:

Key contacts:

Preferred address  
(postal):

Address of property  
(if different):

### Contact Details

Business phone:

Home phone:

Fax:

Mobile:

Email:

## Grower Member Application Form continued

### Corporate Structure

How would you describe the nature of your operations (please tick)?

- |   |                                      |                                      |
|---|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> Individual                   | <input type="checkbox"/> Partnership | <input type="checkbox"/> Company     |
| <input type="checkbox"/> Trust                        | <input type="checkbox"/> Lessee      | <input type="checkbox"/> Cooperative |
| <input type="checkbox"/> Other (please specify) _____ |                                      |                                      |

Please indicate the area of property that you crop for avocados (please tick)

- |                                     |                                     |                                     |
|-------------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> 0.5 - 5 ha | <input type="checkbox"/> 6-19 ha    | <input type="checkbox"/> 20-49 ha   |
| <input type="checkbox"/> 50-99 ha   | <input type="checkbox"/> 100-149 ha | <input type="checkbox"/> 150-199 ha |
| <input type="checkbox"/> 200-499 ha | <input type="checkbox"/> 500 ha+    |                                     |

### Payment Options

Grower Membership of Avocados Australia is **\$250 pa (+ GST)**.

You can pay your membership by cheque or credit card. To pay your membership fee, please choose one of the following options:

**Cheque**

Please find enclosed a cheque for \$275.00 made payable to Avocados Australia Ltd.

**Credit Card**

Please charge \$250 (+GST) to my credit card.

Details are listed below.

Credit card type (please circle):      Mastercard      Visa

Credit card number: \_\_\_\_\_

Name on credit card: \_\_\_\_\_

Expiry date: \_\_\_\_\_

Signature: \_\_\_\_\_

Once you have completed this form please place it in an envelope addressed to:

**Avocados Australia  
Reply Paid 8005  
Woolloongabba Qld 4102**

(no stamp required within Australia)

Or email [admin@avocado.org.au](mailto:admin@avocado.org.au)

For more information or assistance please go to [www.avocado.org.au](http://www.avocado.org.au) or call on **07 3846 6566**

## News from Around the World continued

population was eliminated in glasshouses in 12 weeks, according to the company.

These results were then confirmed in netted trials in Morocco in collaboration with the leading agricultural group in the country, SAOAS. Oxitec's Medfly showed equivalent mating performance with the wild Moroccan Medfly and again successfully suppressed the wild population.

Trials in Morocco also compared the protection of fruit crops provided by Oxitec's Medfly with that of a leading insecticide used to combat the pest globally.

Sustained releases of Oxitec males resulted in a superior marketable yield of fruit compared to treatment with the leading insecticide.

A representative of U.S.-based Intrexon Corporation (NYSE: XON), which recently acquired the British company for around US\$160 million, said advancing to open field trials was an 'important milestone' for the 'pipeline of self-limiting insect products'.

"Studies indicate that annual losses of crops due to these pests, including Mediterranean fruit fly, can reach billions of dollars," Intrexon Crop Protection president Sekhar Boddupalli said.

"Additionally, these difficult to control insects can cause devastating impacts to agricultural economies dependent on high-value produce export." *Source: Produce Business UK*

### Trump presidency leaves fruit growers wary for 2017

2017 is looking to be a difficult year to predict with recent events including the election of Donald Trump in the general election in the United States.

With the United States being the top global agricultural exporter, industry groups that lobby on behalf of fruit growers will be focusing on the Trump administration's stance and plans to deal with various trade deals he campaigned against on the trail.

He showed a firm stance against trade deals such as NAFTA and TPP which President Barack Obama had negotiated with 11 Pacific Rim partners, who together with the U.S. represent 40 percent of the global economy.

Under the deal, tariffs on U.S. apples, pears and cherries would have been gradually phased out in Japan, Malaysia and Vietnam; tariffs in the eight other countries are already at zero. TPP effectively died in Congress last November, following Donald Trump's election as president.

Trump has also announced support for renegotiating the terms of the North American Free Trade Agreement, or NAFTA.

Canada and Mexico are the largest export markets for U.S. apples and pears — 46 percent of U.S. apple exports and 70 percent of U.S. pear exports go to those two countries — and Canada remains the largest export market for U.S. cherries as well.

China has proposed setting up its own, rival version of the TPP, and if the U.S. fails to move forward on a trade agreement with those Pacific Rim nations, U.S. influence would be greatly weakened in Asia, said Des O'Rourke, world market analyst and director of Belrose Inc. in Pullman, Washington, publisher of the monthly World Apple Report. *Source: Fresh Plaza*

## Glyphosate herbicides linked to fatty liver disease

New research published in prestigious science journal links herbicides such as Roundup to non-alcoholic fatty liver disease

New research linking low levels of glyphosate-based herbicides with non-alcoholic fatty liver disease has been published in prestigious science journal Nature.

The research found that exposure to chronic ultra-low doses of glyphosate, such as Monsanto's Roundup, has "substantial overlap" with liver dysfunction.

Policy director at the Soil Association, Peter Melchett, said: "This research is the first evidence of a clear causative link between consumption of Roundup at levels that are found in the real world and a serious disease."

"Weedkillers like Roundup (active ingredient is glyphosate) cause non-alcoholic fatty liver disease at very low doses, many times below levels permitted by regulators worldwide."

But Monsanto rejected the results of the study, calling it "bad science".

"This new study relies on the same samples from a 2012 Seralini study that was determined to be scientifically flawed by multiple regulatory authorities around the world," a statement said. *By Nina Pullman at Fruitnet.com*



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