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# Talking Avocados

**DRIVING EXPORT  
SUCCESS**

**SIMON NEWETT  
RETIRES**

**AVO CONNECTIONS —  
INDUSTRY COMES TOGETHER**

# Talking Avocados

is published by:

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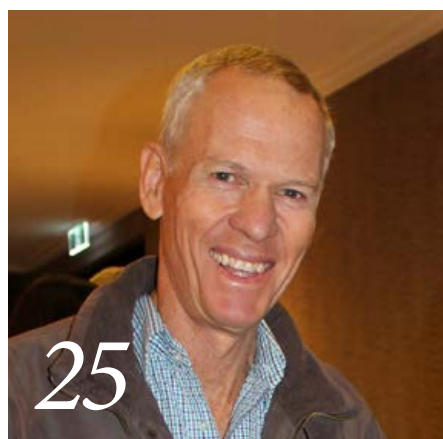
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**COVER:** This year Simon Newett retires. Simon's contribution to supporting extension and best practice in avocado production over the years is significant and we pay tribute to his efforts. Photo by Bridie Carr.

# CHAIR'S PERSPECTIVE

*Brad Rodgers, Avocados Australia Limited*



Welcome to the Winter issue of Talking Avocados magazine.

It has been a very eventful few months since the last issue. On Monday 5 June Avocados Australia held Avo Connections at the Adelaide Convention Centre attracting over 150 members of the industry. This event provided great insights and overviews on the challenges and opportunities facing our industry. Avo Connections gave industry members a chance to hear more about what is being done to increase avocado consumption (with updates on domestic and international marketing) and increasing exports (latest trade development update and market access update).

I also had the good fortune to attend Hort Connections that ran over three days from 5 to 7 June in the same venue. This was the biggest one yet with over 3,000 attendees present. The exhibition hall was extensive and delegates could see products and services from over 200 exhibitors. The focus was on innovation and automation and I know many growers gained a lot by attendance.

The overall value of exports has increased when compared with the previous financial year according to the latest Monthly Export report. This is welcome news. Avocados Australia has made it a priority to increase export volumes to at least 20,000 tonnes by 2026. I know the Avocados Australia team are dedicated to this effort working closely with government and other key stakeholders. As of 18 June our market intelligence is showing that, for the 2022/23 financial year to date, Australian avocado exports were 10,450 tonnes. If we are to achieve our goal more growers/exporters need to export and those who are already exporting need to export more.

Western Australian growers can now export to Thailand as well as Japan. I would encourage all Western Australian growers to discuss the export planned volume of this season's fruit with your packhouses. This will be critically important to get through the strong expected Western Australian crop and handover the market in good shape to North Queensland for the start of their 2024 season.

As you know, India market access is close and at the time of writing this article all ten trial shipments were successfully received. I'd like to thank the participants who have been involved in these shipments. Avocados Australia will be working closely with growers to support them through the auditing and accreditation process.

Avocados Australia attended an International Trade delegation led by the Federal Minister for Agriculture, Fisheries and Forestry, the Hon Murray Watt in early July.

We used this opportunity to cover critical areas that are important to our members both on the export and domestic fronts.

International marketing continues to highlight the virtues of Australian avocados in overseas markets. Recent campaigns have successfully engaged with consumers in Singapore, Malaysia and Hong Kong. Further campaigns are planned for India and the Middle East. I am particularly pleased with the decision to make former cricketer, Brett Lee, an ambassador for Australian avocados. Brett will feature in our Indian marketing campaigns and in campaigns targeting the Middle East.

I was pleased to hear that the World Avocado Organisation (WAO) has launched a consumer education campaign in India to promote avocado's nutritional and health benefits. We know there are great opportunities for Australian avocados in India so the WAO's campaign can only establish a good foundation that we can build on with our own marketing efforts.

Exporting and market access are important areas we need to address however we can't take our eyes off the ball. I ask all growers to stay focussed on your orchards and tree health. We need healthy trees producing quality avocados to maintain our well-respected reputation for producing high quality fruit. Refer to the Best Practice Resource (BPR) for guidance (<https://avocado.org.au/best-practice-resource/>) it contains a comprehensive growing section full of useful resources, tips, and advice. If you are an avocado levy payer growing avocados commercially in Australia, you should have access to the BPR. You can contact Avocados Australia for assistance by emailing [admin2@avocado.org.au](mailto:admin2@avocado.org.au) or calling 1300 303 971.

Sadly, this year Simon Newett retires from his position as Principal Extension Horticulturist at the Queensland Department of Agriculture and Fisheries (QDAF). I know many of you benefited from Simon's advice and practical tips over the years. Simon has worked for 36 years in the areas of extension and production of field crops and horticulture. Over the years Simon has made a tremendous contribution to advancing the Australian avocado industry in terms of extension and best practice. Simon played a key role in the development of the BPR. On behalf of the Board, I want to thank Simon for the contribution he has made to our industry. I wish Simon a happy retirement.

That's all from me. As always, I'd just like to say be great farmers, have pride in what you produce and what you are happy to take to market.



# CEO'S REPORT

*John Tyas, Avocados Australia Limited*



Welcome to another issue of Talking Avocados magazine.

I am very proud of the recent market access to India for Australian Hass avocados from all regions of Australia. I started working on this in 2018 when I first submitted a market access proposal for consideration by the Department of Agriculture Fisheries and Forestry (DAFF). It was important to try and get access for all of Australia (including areas with Queensland Fruit Fly (Qfly)). It is pleasing that DAFF was also committed to this goal, so here we are! The 10 trial shipments have been successfully completed and we are working closely with DAFF to accredit growers and packers around the country to the new protocol as soon as possible.

I am also very proud of the recent market access to Thailand for Australian Hass avocados from areas free of Qfly. This one has taken much longer, and we haven't yet been able to get Thailand to accept the conditional non-host status of Hass for QFly. I started working on this one in 2013 when Thailand first introduced technical market access protocols. We expect that Australia will be able to regain market share quickly and we are continuing to work on access for all regions of Australia.

With our new Chief of Export – Market Access position in place (Richard Magney) we will be continuing to drive new market access outcomes even harder and faster.

It was great to see so many of you at the Adelaide Convention Centre for our annual forum event, Avo Connections, on 5 June. The event covered important topics of interest to the industry and preceded Hort Connections. Avo Connections included a great update on what Avocados Australia is doing to support growers in managing the strong supply expected now and in the coming years. If you were unable to attend this event, you will find all of the presentations in the Best Practice Resource (BPR) Library.

Between now and the end of the year we have a number of key export-related events taking place. The Central Queensland Export Regional Forum is happening on 18 August in Bundaberg. This will be followed by a South Queensland Export Regional Forum happening on 24 October at Highfields. Australian Avocados launch in India and a market visit is being planned for early October. An Australian Avocados launch in Thailand is also scheduled to take place in late September. Another important event on our calendar is Asia Fruit Logistica (6-8 September). All of these initiatives are aimed at increasing exports and supporting growers/exporters in that process.

Every year in the Winter issue of Talking Avocados, we provide a summary of all the avocado R&D investments underway. As you will see, it is a large and diverse program and we need to ensure it continues to deliver great outcomes for growers. To this end, I very recently appointed an RD&E Coordinator who will work closely with Hort Innovation, AAL staff, growers and other industry stakeholders to support the RD&E program. Mary Burton is our inaugural RD&E Coordinator and I will provide more information about Mary and this new role in the next issue.

In my opinion the refreshed levy investment advisory mechanism for the avocado industry is working very well so far. Hort Innovation worked very collaboratively with me in designing a very fit-for-purpose mechanism that I am confident will deliver great outcomes for avocado growers. To hear more about this, I recommend that you read the article in this issue that shares Hort Innovation's perspective.

Simon Newett's contribution to the Australian avocado industry is significant and we will miss his expert input on matters affecting avocado production. I have worked closely with Simon for many years, and I whole heartedly wish him well in his retirement.

There is a lot going on. You can stay up to date on AAL's activities by subscribing to our email notices and newsletter. To subscribe call AAL on 07 3846 6566 or email our admin staff at [admin2@avocado.org.au](mailto:admin2@avocado.org.au).



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# AROUND AUSTRALIA



## TRISTATE

*By Kym Thiel*

It's a very quiet time for avocado growers that don't have other crops in the Tri-state, but it certainly feels like the calm before the storm. With the onset of another heavy crop in the district, the uncertainty around

market conditions, and the large crop nationally, it may well be challenging times ahead. One of the very successful things about our industry is the amount of information that we own in regard to volumes both in the market now and expected into the future. This enables us to plan and therefore growers should have no surprises come harvest.

There are some bright prospects on the horizon especially in the export sector where the recent announcement of Indian access for the whole country and Thailand, for Fruit Fly free areas, highlights the important work that Avocados Australia has been doing in the background, in recognition of the massive increase in volumes about to hit our market. The continuation of Fruit Fly outbreaks in the Riverland are not timely and they unfortunately mean we can't take advantage of the Thailand market nor of course Japan.

Hopefully growers that attended Avo Connections in Adelaide recently found it a worthwhile event. This is another example of industry sharing information and communicating with all sectors of the supply chain and it was great to see a wide variety of members across the supply chain there.

As we approach harvest, I encourage all growers/packers to ensure their fruit meets the minimum maturity standard of 23% before beginning harvest. Everybody must remember that we are a unique national industry that can supply a quality product nearly 12 months of the year when fruit comes from 7-8 very different geographically growing regions. Early immature season fruit from our area should not be required when volumes are ample from Central and South Queensland. Some other crops in the region have been late this season including wine grapes and citrus so it follows that avocados may be the same.

As we move out of a La Nina weather pattern into a potential El Nino pattern our Murray-Darling Basin Commission (MDBC) storages are at good levels meaning water prices should not escalate too much in the short term. This is good news for the region as a whole with commodity prices for citrus and wine grapes continuing to suffer.

Finally, the next few years promise to be very challenging for the industry as a whole, but I strongly believe our region has a great opportunity to deliver a quality consistent product year in year out. I don't believe we suffer from weather events that lead to high incidences of disease and poor fruit quality half as much as other growing districts. The export market must be front of mind for all growers and packers in the region and I believe we are well positioned to take advantage of that.



## CENTRAL NEW SOUTH WALES

*By Ian Tolson*

A very dry autumn leading into the colder months of winter has not produced any significant rainfall.

Considering recent years of flooding, probably the drier conditions are easier to manage and not quite as devastating.

Weather conditions are always challenging growers resolve. No matter if it's wet, dry, hot or cold it complicates the growing process and is not controllable. However, following best practice and adjusting spray, fertilising and irrigation programmes are growing tools that are within every grower's control. Producing 'robust' fruit for both the domestic and international markets seems to be gaining momentum and what all growers should strive to produce. With fruit despatches reaching over 500,000 on two occasions this year and keeping in mind this could become a normal occurrence, consumers still deserve a quality product to remain repeat purchasers.

Orchard restoration and replanting is still an ongoing process for quite a few growers, which shows a great faith for the industry.

It's a shame the change over from Shepard to Hass and vice versa isn't handled in a way so as not to create 'a messy' situation in the supply chain. Thankfully market conditions have eased, which has growers preparing to commence harvesting. The areas crop will be down on last year, recovering orchards, smaller fruit size and irregular bearing being the main reasons.

Two major industry events happened within three months of each other. The Avocado World Congress in Auckland was very well attended. Thirty-three countries were represented. Weather was beautiful, great line up of presenters, with a large focus on sustainability and the nutritional value of avocados. An interesting presentation, which could be best described

as an holistic view, was health professionals moving towards prescribing a certain food to heal patients. If this eventuates, hopefully avocados get prescribed.

Hort Connections in Adelaide was another very well attended event. This event is growing in popularity and provides a wonderful networking opportunity as well as keeping you up to date with the latest advancements for industry. Many industry sessions took place over the course of the three days, one of which was Avo Connections, the content and speakers attracting growers, marketers and exporters to the sold-out event. Congratulations to Avocados Australia management and staff for organising such a wonderful event.



## TAMBORINE AND NORTHERN RIVERS

By Tom Silver

Harvest is well underway in the northern New South Wales Tambourine growing region. This comes after a late start due to a delayed maturing

crop, low prices and for many growers, below average size. I hope that by the time this article goes to print, the market has firmed and returns have improved. Quality seems quite good, with the biggest down grade being sun burnt fruit from exposed branches, no doubt a hangover from last year's weather conditions. In contrast to 2022, this year has been quite dry and cool which has made avocado farming a lot easier! I expect it will be an early spring if the dry conditions continue with temperatures warming in August.

After much contemplation, I have made the decision to not restand for the Avocados Australia Board in the 2023 elections. Both business and home life has become a lot busier, however my main reason for leaving is I believe 16 years on the board is long enough, and it is important to bring in someone new with fresh ideas and enthusiasm. Though our region is small in production, relatively we still have some of the highest membership and grower numbers, not to mention the large geographic area the region covers, therefore our ongoing representation is important.

Wishing all growers a good harvest.



## WESTERN AUSTRALIA

By Brad Rodgers

It has been a cold, wet start to the winter season after a dry autumn with young orchards feeling the effects of frosts. I encourage Western Australian growers to refer to the Best Practice Resource (BPR) to source information on how best to manage these conditions.

Fruit quality is looking good in time for the harvest season that will start in July-August. We expect a strong crop, so this requires good planning with packhouses on export volume. Thailand and India should be in the mix for export this season, so I expect packhouses are planning ahead for this. Talk to your packhouse about this and find out what they have planned.

It is important for everyone to stay focused on maintaining tree health. Avocados Australia sends out monthly "Avo Alerts" emails to growers with a list of suggested orchard tasks, by region, for the current and coming month. These are prepared by Queensland Department of Agriculture and Fisheries and link to the extensive BPR resources. If you have registered for the BPR, you can find the latest Avo Alerts in the Australian Agronomy section of the BPR Library. For June-July, for Western Australian Hass, the Avo Alerts encourage growers to monitor root phosphonate, treat for Phytophthora root rot, maintain optimum soil moisture, apply nitrogen and boron, apply copper fungicide sprays to manage anthracnose (and other fruit rots) as well as monitor and spray for leafrollers. I believe that the monthly Avo Alerts emails are a useful resource for growers/orchard managers.

It is important to note that University of Queensland researchers have found that strobilurin fungicides such as Amistar are no longer effective against anthracnose. As soon as researchers made this information available Avocados Australia sent out the details in an Industry Notice including a detailed article prepared by the researchers involved. Researchers say this suggests that Colletotrichum sp., the fungus causing anthracnose, had possibly mutated to become resistant to the QoI strobilurin group of fungicides. I recommend that growers review their spraying programs to take this into account. This research was conducted as part of the "Improving avocado orchard productivity through disease management" (AV16007) project. Read the article about this in this issue. If you would like to find out more contact Dr Elizabeth Dann, email [e.dann@uq.edu.au](mailto:e.dann@uq.edu.au) or call 07 3443 2455.

On 1 July the new Aboriginal Cultural Heritage Act 2021 comes into effect in Western Australia. These laws are aimed at protecting Aboriginal cultural heritage. According to the Western Australian Government website "everything that land users are already doing now will be permitted under the new Act." The new process is said to make it "simpler and fairer" and they will be introducing "practical exemptions." This includes exemptions for activities that are the same "in area, height and depth as an existing land use." I will be interested to see how the Act is rolled out across the state. You can find out more about the Aboriginal Cultural Heritage Act 2021 by visiting the WA Government website – use the QR code provided.







## SOUTH QUEENSLAND

*By Daryl Boardman*

Well, it's been a busy period with the World Avocado Congress, Hort Connections in Adelaide, India Market Access, and trial shipments started.

For those of you that were able to attend the World Avocado Congress I'm sure you would agree that it was well worth it. I think the quality of speakers and the field trips were very well run and I commend Jen and her team for a job well done.

The recent Hort connections in Adelaide was also a very well-run event and it had a large attendance and a very good trade event with a very good line-up of exhibitors. This is a great event to attend if you have not attended before and I would recommend anyone to visit as you will get a lot out of it. Next year it will be in Melbourne so keep it in mind.

It's been fantastic to be involved with the India access and the trial shipments. I'm sure India will be a fantastic market for Australian Avocados and a market that will love and embrace our wonderful product.

The assistance from the Department of Agriculture, and the way in which Industry has all worked so well together to make

this all happen, is a testament to what makes a great industry. I am proud to be a part of this industry and I have been fortunate enough to be involved in this historic market access opportunity that has been granted.

With the success of the trial shipments will come full access which will mean exciting times ahead and this will potentially give us up to 10 Australia's in population to target in the future. Even if this is just one Australia population that we target this will be an enormous help to be able to tap into such a large population of consumers.

Harvest has just begun in the region and at this stage yields are looking quite good. Fruit size I believe is mixed and some signs of sunburn from not enough leaf cover on heavy loaded trees.

I believe that we may have some property sales taking place in the region and for those that are leaving our industry I wish you all the best.

For the new buyers coming in, I wish you all the best on your new purchases and I'm sure with the new export markets, and the great product avocados are, that good times are ahead and won't be far away.

As for me I have just sat through my last Avocados Australia Board meeting in Adelaide while at Hort Connections. Over my time as your local South Queensland director, I have



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enjoyed representing the region and I hope I have done this to the best of my ability.

The Annual General Meeting will be held in Highfields in late October and the region will need a new director, so I urge someone to please think about putting your hand up for this position.

All the best for a great harvest.



## CENTRAL QUEENSLAND/ SUNSHINE COAST

*By Lucy Philip*

Well we are in the midst of our picking season now, over halfway at the time of writing this article, mostly everyone is busy, busy, busy. There are some big fruit getting picked this season, which tells me that some young trees have come into production, backpackers are in abundance again which is quite different to last season, which is good to see. They not only help our fruit and vege picking industry but are very important to our tourism industry as well.

India's trial shipments were successful. A big thank you to those involved, it is such a great move forward for our industry.

In my last article I mentioned I was part of the Paradise Dam Reference Group, since my last article Sunwater have confirmed that they have no current plans to sell any new permanent water from the Burnett River sub-scheme. This is good news as we are now approaching a new water year soon and medium priority allocations from Paradise Dam have been forecasted at 76% to 88%. The 2023-24 announced allocation notifications will be sent in the next couple of weeks, in early July. Although this may be tough on some this prediction accounts for the operational level of 0.75 metres below the crest in order for outlet works to be conducted. It's going to take time but at least it's moving in the right direction, with major works on the rebuild to start next year, it was only this time two years ago we were facing the announcement of 22%.

Another reference group I am now involved in, is Hort Innovation's Avocado Market Development Advisory Panel. I must admit coming out of the first meeting I was very happy with the calibre of Hort Innovation people involved as well as the people on the panel that are representing our industry. It's early days but I think we are in good hands going forward and with Brett Lee as our brand ambassador for India, it's only going up from here.

Finally, I would like to wish everyone a great rest of the season and I hope to see you all at our next Central Queensland forum in August. Please make the effort to come along, as levy payers we pay for these forums, here is your chance to come and evaluate and have your say.

Otherwise, please don't hesitate to reach out with any queries or concerns either at the forum or you can phone (mobile number is 0499 798 039) or email me at [l.philip@avocado.org.au](mailto:l.philip@avocado.org.au).



## NORTH QUEENSLAND

*By Matt Kleyn*

Hi all, I hope your season has been going well. It has been a busy time since I last wrote to you. We have had the World Avocado Congress in New Zealand, Avo Connections and Hort Connections in Adelaide. It was the first time I attended Hort connections which I must say was a great thing to attend. I have raised the possibility of rotating the time this is on each year by a few months to give those of us in North Queensland an opportunity to attend out of our season if possible. I can only try.

As many of you predicted the North Queensland and Central Queensland crops were lower than normal. I think we have a lot of lessons to learn from this season. We all went way too fast and pushed the price down to ridiculous levels and now mid-June we are all running out and the price is going up. The best way to control this is to determine what your crop is to the best of your ability and spread the picking evenly from when you start to at least mid-July. If your marketers tell you to pick as much as you can, then think carefully as picking more than there is order for will only make the price fall.

The only explanation for the price falling so much from the end of the Shepard season which went very well, is that people were picking more than they could sell. As usual we have no idea who it was, but it must have been someone. If you need to pick more than domestic orders permit, then you need to find export orders for the excess. If these options are not possible then don't pick. We have the advantage in avocados that the fruit will hold on to the tree for a while, so we need to remember that. None of us will be growing avocados if we can't learn this lesson.

I wish you all the best for the off season and a hard-earned rest.





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# NEWS

— Extension News —

## Wrapping up the ‘Avocado Industry and Development and Extension’ Project

*By Simon Newett, Bride Carr and Renata Grunennvaldt, Queensland Department of Agriculture and Fisheries*

The collaborative efforts of the Department of Agriculture and Fisheries (DAF) and Avocados Australia (AAL) culminated in the successful completion of the 4-year Avocado Industry Development and Extension Project (AV17005). This project built upon the successes of previous work and had the primary objective of promoting the adoption of improved practices throughout the industry. Aligned with the Avocado Strategic Investment Plan (2017-2022), the extension project focused on promoting the adoption of best practices by growers, nurseries, consultants, advisors, and resellers, as well as expanding national and international networks.

AV17005 provided a wide range of events and resources designed to disseminate information, stimulate ideas, and facilitate industry-wide engagement and networking. The overall aim was to promote practice change that would build capacity in the industry in order to improve productivity and fruit quality.

The main events organised were the Regional Forums, ‘Avo Grow’ webinars (commenced during COVID-19 lockdowns), ‘Avo Skills’ workshops, Advanced Management Workshops (reviews), a tour of the Californian avocado industry, and Wholesaler Workshops. These events served as platforms to share best practices, exchange ideas, and foster collaboration amongst industry stakeholders. Total attendance at these main industry events was 2,455 people.

The main resources developed included educational videos, posters, an updated BPR, and the 2nd Edition of ‘The Avocado Problem Solver Field Guide’ (in production) in addition to the reports, minutes, recordings and presentations from all the events described above. These resources provide comprehensive and accessible information to growers and industry professionals.

The project received high praise for its wide range of learning formats and resources, with 90% of industry stakeholders expressing satisfaction. Additionally, the project’s initiatives effectively engaged a wide range of stakeholders, including

growers, resellers, consultants and researchers. The project’s success was confirmed by the high level of stakeholder engagement and the feedback received. Notably, more than 65% of industry participants credited the project for improvements in productivity, quality, and profitability within their businesses. More than 91% of industry participants agreed that the project had effectively addressed industry requirements. The project team actively incorporated stakeholder feedback, resulting in the continuation of the highly valued ‘Avo Grow’ webinars post-lockdowns. These efforts demonstrated the project’s commitment to meeting industry needs, providing suitable learning formats, and generating ongoing efficiencies based on stakeholder input.

The project team substantially expanded and strengthened their domestic and international networks through organising and recruiting speakers for Regional Forums, AvoGrow webinars, Advanced Management Workshops and AvoSkills events, attending the World Avocado Congress in Colombia and New Zealand, conducting the tour of the Californian avocado industry and in the process of developing project resources (e.g. posters, videos and the BPR updates).

The project’s in-depth discussions and the formulation of recommendations for future avocado extension and research, which were developed during the creation of the ‘Australian Avocado Industry Extension Strategy,’ will ensure that future initiatives build upon the project’s success. Although the new National Avocado Extension Project will take a few months to start, be certain that we are diligently working behind the scenes to align the new plan with industry expectations.

The full final report for the project is available from the Hort Innovation website, and in the BPR in the ‘Library’ under ‘R&D Reports’.

### Acknowledgments

The AV17005 project team would like to gratefully acknowledge the very valuable support offered by the many



## Main events and resources developed during the project:

Outputs and Activities	Details	Comments
19 Regional Forums across 9 regions*	24 were scheduled, 5 of them were replaced by webinars during Covid lockdowns	1,545 attendees, with 627 individual growers and 365 non-growers attending at least one Forum
8 'Avo Grow' webinars*	<p>Undertaken to replace the 5 Regional Forums cancelled due to Covid, a total of 8 were organised due to their popularity:</p> <ul style="list-style-type: none"> <li>Fruitspotting bugs – Ruth Huwer &amp; Craig Maddox, NSW DPI</li> <li>Where have all the flowers gone? – Dr Iñaki Hormaza, Spain</li> <li>Irrigation, nutrition &amp; PGRs – Dr Francisco Mena, Chile</li> <li>Avocado nutrition under Californian conditions – Dr Ben Faber, Uni California</li> <li>Exploring soil microbiology in avocado production – Dr Neil Wilson, Qld</li> <li>Shaping healthy soils – Dr David Crowley, Uni California</li> <li>Avocado irrigation in Israel – Udi Gafni, Israel</li> <li>Research updates – various presenters</li> </ul>	<p>549 'attendees' at the live presentations. Members of the Australian industry were able to watch live presentations from leading international experts without leaving home.</p> <p>All webinars were recorded and uploaded to the BPR, enabling a larger audience to watch them even after the live events had ended.</p>
5 'Avo Skills' (Foundation Workshops) two-day workshops held across Australia*	The fundamentals of best practice for avocado production were delivered via fun mornings in the 'classroom' and practical field visits in the afternoons. Training resources and an online forum for new growers and resellers were developed.	186 'students' attended, made up of growers and resellers.
3 Advanced Management Workshops (reviews)*	<ul style="list-style-type: none"> <li>Irrigation – keynote speakers Udi Gafni, Israel; Dr Michael Foster, Qld</li> <li>Canopy Management – keynote speakers Dr Francisco Mena, Chile; Bram Snijder, South Africa; Colin Partridge, NZ</li> <li>Soil Health – keynote speakers David Crowley, USA; Tony Pattison, DAF Qld; Denis Roe, Qld; Graeme Thomas, NSW.</li> </ul>	<p>49 delegates in total.</p> <p>Each of the 3 reviews included a comprehensive literature review, a survey of current practices by domestic producers, a survey of international practices and trends, and a two summit of experts including international keynote speakers. All this material including a final report for each review is available on the BPR. Outcomes were used to update best practice articles on the BPR.</p>
7 face-to-face Wholesaler Workshops and 1 online	These sessions were held twice over the course of the project in the capital city fresh produce markets of Brisbane, Sydney, Melbourne, Adelaide and Perth. During Covid, some were delivered via webinar.	<p>88 attendees.</p> <p>Bringing wholesalers up to speed with postharvest best practices</p>
51 sets of monthly 'Avo Alerts'*	Each set consisted of 8 versions of reminders to cover 9 regions and two varieties	Monthly reminders for tasks due that month in the orchard.
3 YouTube educational videos*	<ol style="list-style-type: none"> <li>'Protecting your avocado trees from Phytophthora root rot: effective application of phosphorous acid'</li> <li>'Principles of avocado canopy management'</li> <li>'Options for avocado canopy management'</li> </ol>	<p>Released Oct 2020 (13,000 views by May)</p> <p>Released Oct 2021 (72,000 views by May)</p> <p>Released Jan 2023 (12,000 views by May)</p>
2 Educational posters*	<ol style="list-style-type: none"> <li>'Managing spotting bugs in avocado'</li> <li>'Managing six spotted mite in avocado'</li> </ol> <p>(In addition, a 3<sup>rd</sup> edition of the popular 'Manage Phytophthora root rot' poster was developed and printed).</p>	<p>Developed for east coast growers.</p> <p>Developed for WA growers.</p> <p>Hard copies can be ordered from DAF Nambour or Mareeba, and DPIRD WA respectively.</p>
Updates to the Best Practice Resource*	Information on over 30 topics has been updated and presented in a new easy-to-read format.	Key information is presented on the first page with more detail on subsequent pages.

Outputs and Activities	Details	Comments
2 <sup>nd</sup> Edition of 'The Avocado Problem Solver Field Guide'	Ten new pests, diseases and disorders were added. Other information was updated and new photos were included.	Can be ordered through Avocados Australia Ltd
Organisation and reporting of the Californian avocado industry study tour 2019*	A three-day tour was organised with the assistance of the California Avocado Commission that visited 8 different avocado sites in that US state. A comprehensive report of the tour was produced.	The tour took place in September 2019, the week before the World Avocado Congress was held in Colombia. It was attended by 38 people.
Attendance and reporting on two World Avocado Congresses, namely Colombia in 2019 and NZ in 2023*	<ul style="list-style-type: none"> <li>'Report on 2019 World Avocado Congress Colombia'. Plus separate reports on field trips to Rio Negro and Sonson avocado regions.</li> <li>'Report on 2023 World Avocado Congress New Zealand'</li> </ul>	Some project team members attended the World Avocado Congresses to network, learn and bring new information back for the Australian industry.
6 Project Reference Group meetings	With annual workplans developed and delivered	
Summary of relevant international scientific and technical articles	Shared with the industry every quarter in 'Talking Avocados' magazine	Refer to 'International Avocado Research Update' in 'Talking Avocados' magazine
1 new phenological crop calendar*	Developed for the Maluma® variety in North Queensland	Search on 'Maluma crop calendar' in BPR
Australian Avocado Industry Extension Strategy 2023-2027*	Thorough review of current extension in the avocado industry and intensive consultation of industry to develop a way forward for future extension covering the whole supply chain from the nursery right through to exporting. 77-page report titled 'A plan for the transition to 2027 – Australian avocado industry extension strategy'.	
New Project Co-design	Co-design development for the new five-year 'Australian Avocado Industry Development & Extension' project making use of the Extension Strategy to direct its formulation.	

\* NB. All the above resources, reports, presentations, webinar recordings and minutes (marked with an asterisk) can be accessed 24/7 on the BPR.

levy payers who helped ensure that the project was a success. They included those that opened their orchards to host the farm walks associated with Regional Forums and Avo Skills (without them these valuable aspects of the project would not have been possible), the many Australian and international experts who presented at the Regional Forums, Avo Grow webinars, Avo Skills workshops and Advanced Management Workshops, and those who openly shared their knowledge and insights at the Advanced Management Workshops. We also acknowledge the Project Reference Group for their input and advice on work plans, and feedback and direction on various project activities.

The project team consisted of Simon Newett and Renata Grunennvaldt (DAF Nambour), Bridie Carr and Noel

Ainsworth (DAF Brisbane), Helen Hofman (DAF Bundaberg), Geoff Dickinson, Ebony Faichney and Tamaya Peressini (DAF Mareeba), Ingrid Jenkins (DAF South Johnstone – video editing), John Tyas, Liz Singh, Lisa Yorkston, Amanda Madden, Anne Larard and Anna Petrou (AAL). Support was also provided by Declan McCauley (DPIRD in WA).

This project was a strategic levy investment under the Hort Innovation Avocado Fund. The project was delivered by the Queensland Department of Agriculture and Fisheries and Avocados Australia Ltd and funded by Hort Innovation using the avocado industry research and development levy, with co-investment from the Queensland Department of Agriculture and Fisheries, and contributions from the Australian Government.





# Global Avocado Market Intelligence

By Daniel Martins, Avocados Australia Data Analyst

A global trade data analysis framework was developed in the second quarter of 2018 specifically targeting current and potential exporters. This framework provided the foundation for a series of reports that have been developed and provided to exporters and the broader industry to assist with developing export markets and understanding global competitors.

The reports are made available to current exporters, as well as growers, and packers that are able and would like to export. All the reports are uploaded to the Best Practice Resource on our website, and we email out the monthly report to those subscribed to our export news list.

To access the Global Avocado Market Intelligence reports please visit our Best Practice Resource at <https://avocado.org.au/best-practice-resource/export/export-reports/>, or use the QR code provided using your mobile phone.

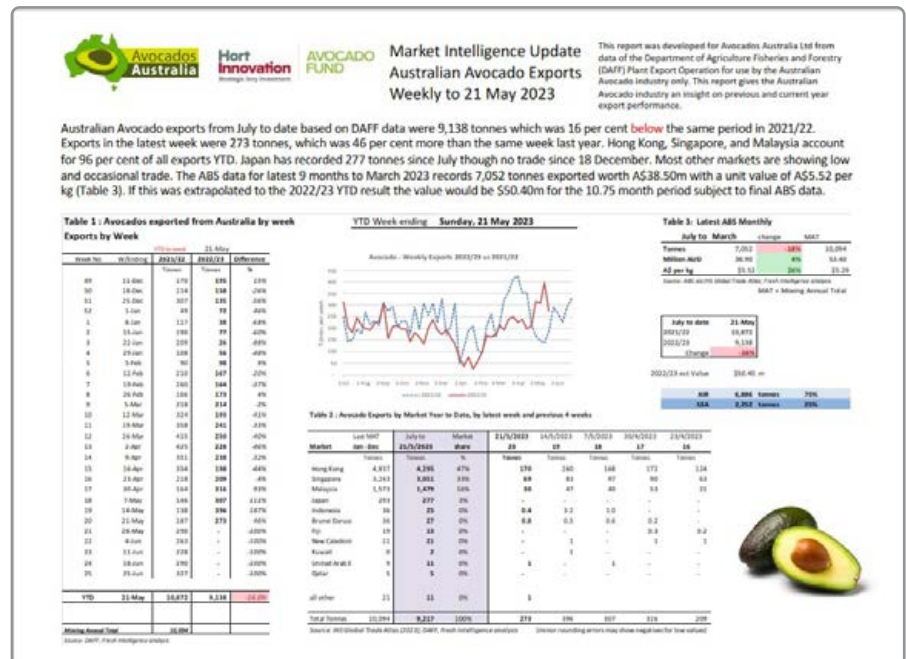
The current suite of global trade reports is comprised of:

## Weekly export updates:

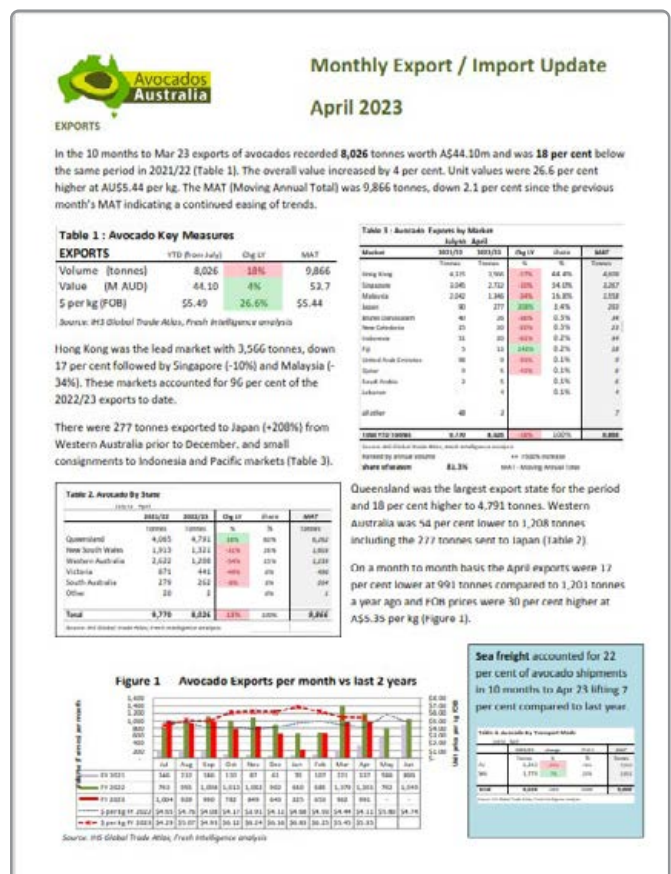
1-page weekly dashboard report based on DAFF data showing latest week and year to date exports compared with the previous year. The report includes relevant commentary to provide further insight into the current state of Australian avocado exports.

## Monthly export update:

Latest month and year to date Australian exports compared with the previous year and Moving Annual Total (MAT) by volume, value, and unit value. Latest months' import update and market shares and CIF price points by competitor for 5 key markets of interest (Singapore, Hong Kong, Malaysia, Japan, and India). Latest Australian imports from New Zealand and Chile by month and season to date. Similarly, this report includes relevant commentary to provide further insight into the current state of our exports, as well as fruit imported into Australia from New Zealand and Chile.



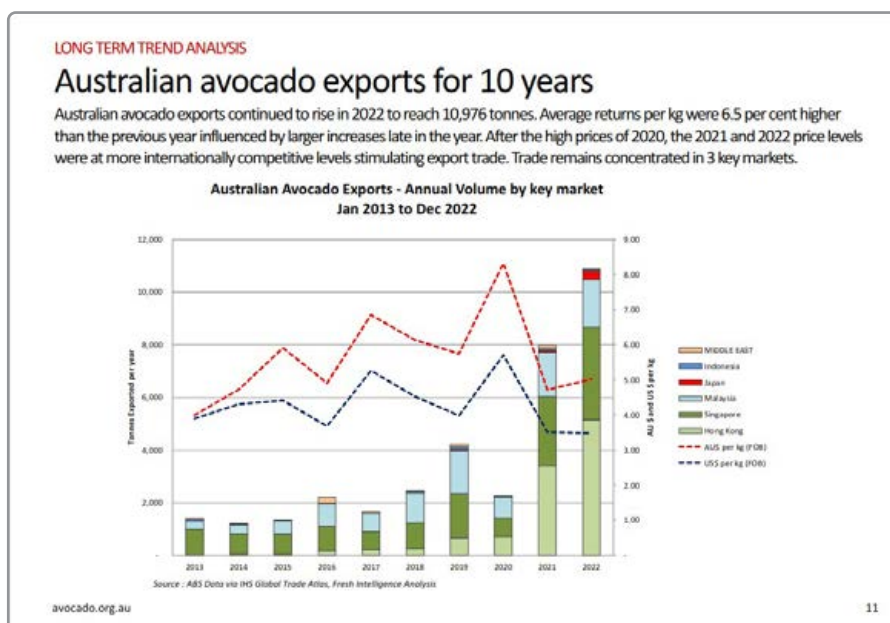
The Weekly Export Update.



Monthly Export Update.

## Exports and imports (twice yearly):

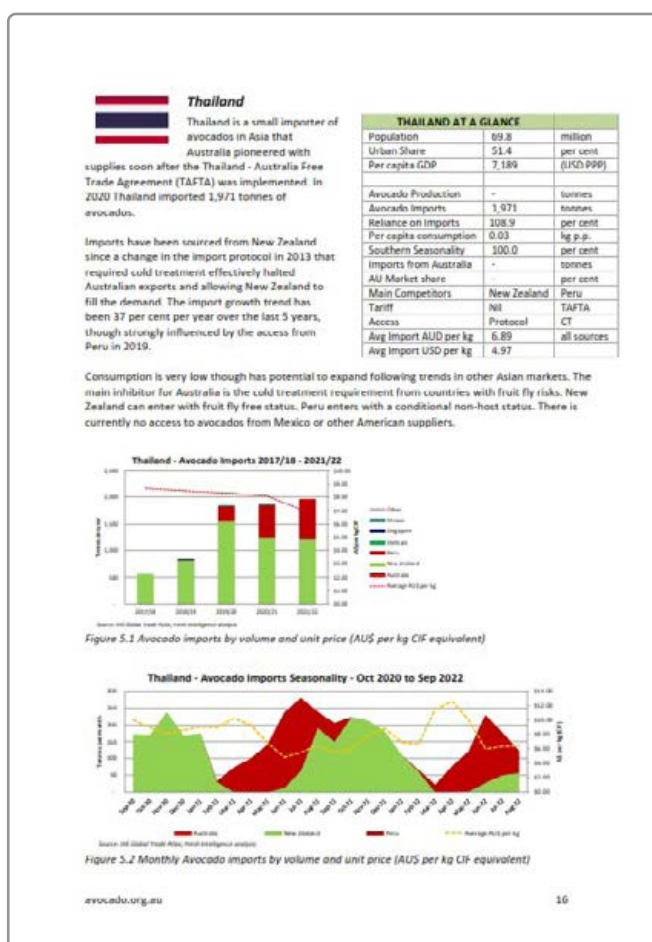
Twice yearly reports including data tables, analytics, graphs covering exports by market and states, 10-year trends, volume, value and unit value, key export market competitive trade and commentary highlighting the most important trade facts and observation for the most recent period. The Report is published in August reporting trade activity for the past financial year and in February for the calendar year.



Twice Yearly Report.

## Global export markets and trade (yearly):

A yearly report on market profiles for each of the global top 5 importing countries and 10 markets of interest in Asia and Middle East, showing 5-year import / export trade by volume, price, and consumption (to latest CY) with analytics and commentary – published by 30 September each year.



Global export markets and trade yearly report.



## Producers/competitors (yearly):

Market profile reports assessing global trade flows focussed on each of the leading 10 producing countries production and export trade by volume, price, over 5 years (to latest CY), including key Latin American suppliers Mexico, Peru and Chile with analytics and commentary – published by 30 September each year.

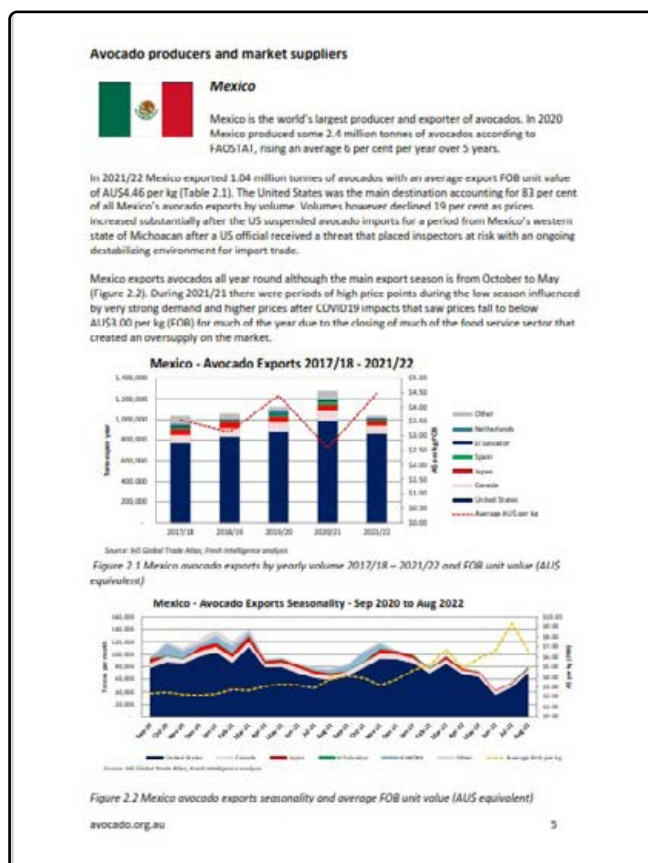
## Acknowledgement:

The *Avocado industry and market data capture and analysis* (AV20000) project is funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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# Export Market Analysis - Thailand

By Wayne Prowse, Fresh Intelligence Consulting

## Avocado Global

Global avocado supply exceeds 8 million tonnes and is likely to reach 10 million tonnes by 2026 based on current trends and global analysis of new avocado production areas, including in China, Vietnam, and India. Mexico remains the avocado powerhouse producing more than 25 per cent of the global supply. In 2022 some 3.1 million tonnes of avocados were traded globally according to UN Comtrade data with the major trade lanes being from Mexico to United States and from Peru to Europe.

## Australian Avocado Exports

Early data for Australia's avocado exports for the year ending 30 June 2023 reached 10,600 tonnes and around 9 per cent below 2021/22. With some respite the unit values increased bringing the overall value to A\$58m\*. This was helped by a falling exchange rate against the USD as seen in Figure 1. (\*Estimated and subject to final confirmation by ABS)

Hong Kong, Singapore, and Malaysia still accounted for 96 per cent of Australia's export volumes however 276 tonnes or 3 per cent were exported to Japan which lifted 161 per cent from 106 tonnes in the previous year. The remaining 1 per cent was shared across a dozen markets including Indonesia the Middle East and Pacific.

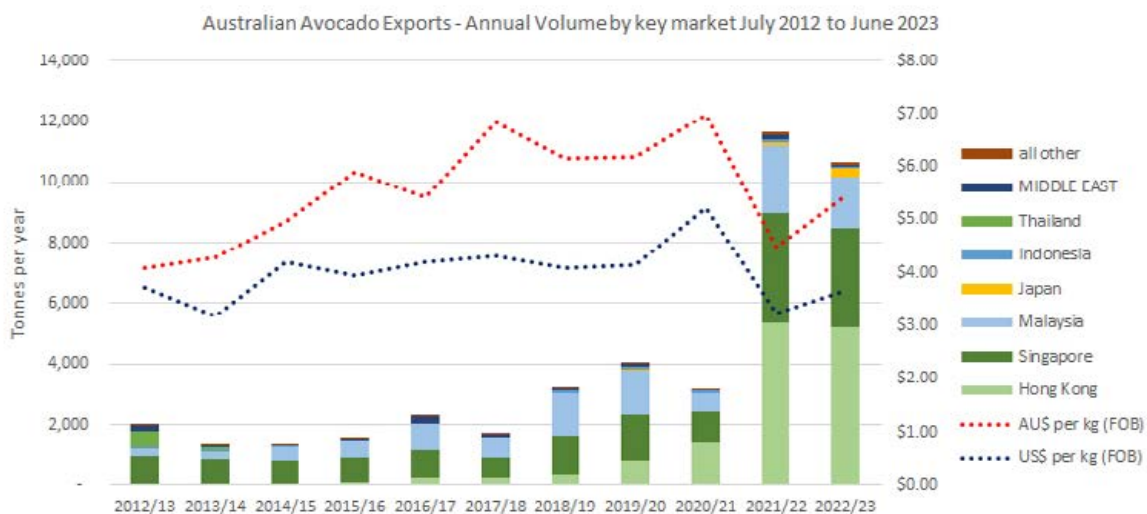
## Thailand



Avocados have been gaining popularity in Thailand in recent years. Although traditionally not a native fruit, avocados have found a growing market in the country due to their nutritional benefits and versatility in various cuisines.

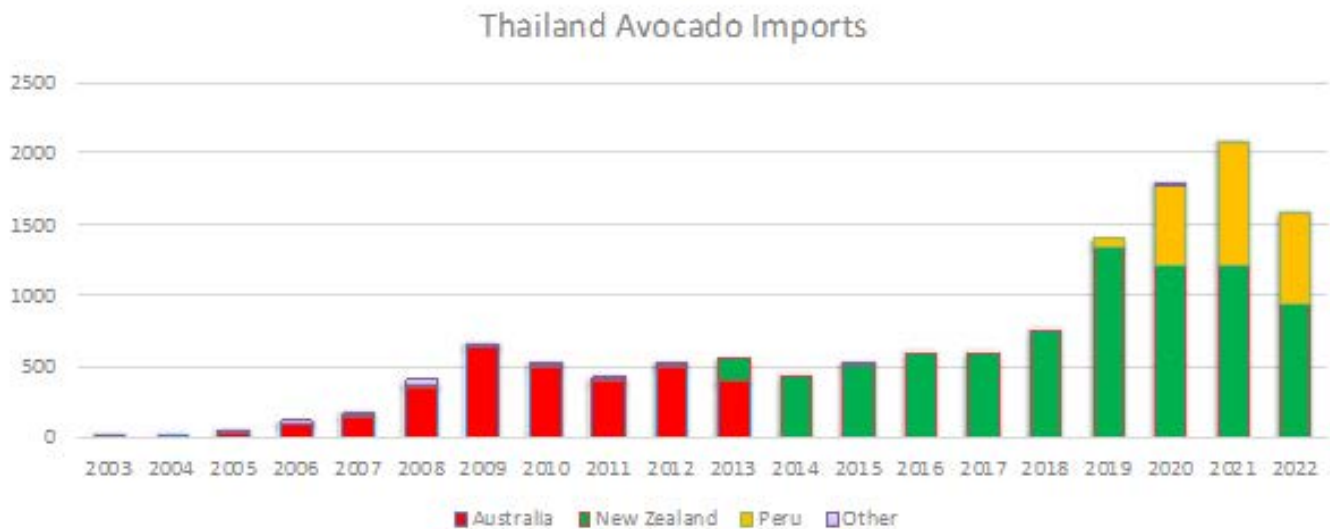
The demand for avocados has been driven by factors including the increasing awareness of health and wellness among Thai consumers that is leading to a greater emphasis on nutritious food choices particularly among younger affluent consumers. Additionally, the influence of Western cuisines and global food trends has played a role in the rise of avocados in Thailand.

Avocados have been marketed as a premium fruit with a perception of being trendy and fashionable in Thailand. This appeal has captured the interest of young “millennial” consumers who are willing to try new and unique food

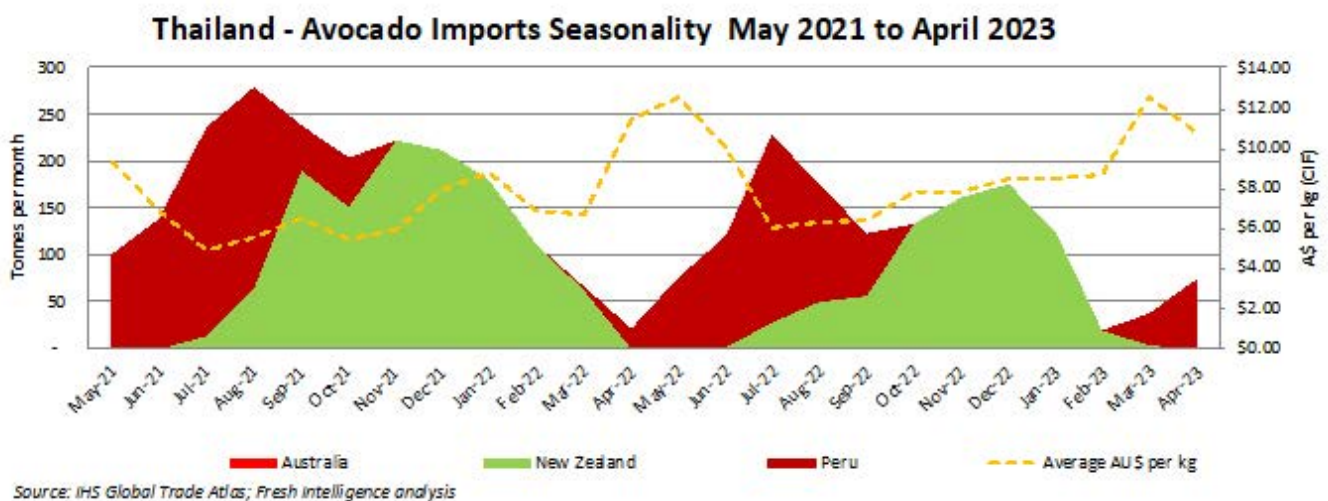


Source: IHS Global Trade Atlas; Fresh Intelligence analysis

Figure 1: 10-year growth of avocado exports.



**Figure 2:** 20-year growth of avocado imports by Thailand.



**Figure 3:** 24-month seasonal supply of avocado imports by Thailand.

experiences. Per capita consumption remains low at 0.03 kg per person per year underscoring the growth potential in the market of 70 million. In the 12 months to April 2023 Thailand imported 1,500 tonnes of avocados, all from New Zealand and Peru worth A\$11.7m.

At time of writing the Thailand government had just granted access to Australian avocados from Western Australia. Thailand does need to undertake verification activities, which should happen during the upcoming Western Australian 2023-24 avocado season.

Prior to 2013 Australia was supplying avocados from Queensland to Thailand and pioneered the early introduction of avocados to the market including assisting retailers and wholesalers with storage and handling training and introducing to consumers via instore promotions. The trade ended abruptly with a change in import conditions, and now after 10 years Australia has the opportunity to retake a

significant slice of this market and contribute further to its growth (Figure 2).

Looking at the import patterns Thailand now has an almost year-round supply with Peru also in the market. The gaps appear to be in March to June period which would have been perfect for Queensland, underpinning the importance of maintaining negotiations to secure access from eastern states. Western Australia will be in the market mainly during the New Zealand supply period though will have geographic and supply advantages.

Thailand is a powerhouse for tropical fruit production and consumption. In 2021 Thailand produced some 10.5 million tonnes of fresh tropical fruit and exported 1.8 million tonnes. Once more people get to know and like avocados the consumption levels could increase exponentially and will no doubt extend to local production that currently exists in infancy. Thai avocados are reported to be planted in



4 different provinces as growers see the increasing interest in avocados.

Australian fresh fruit has a strong quality reputation in Thailand which should help avocados to be accepted into the market. Australia is the second largest supplier of fresh fruit to Thailand, after China, supplying 26,000 tonnes of mostly grapes and citrus plus smaller volumes of stone fruits, apples, and pears. Australia is the leading supplier of avocados to nearby Malaysia and Singapore.

Overall, while avocados are not as commonly consumed as traditional Thai fruits, their popularity has been steadily growing in recent years. With their health benefits, culinary versatility, and trendy appeal, avocados have found a place in the Thai market, and Australia as a leading trusted supplier of fresh fruit to Thailand is well positioned to contribute to this growth.

### Acknowledgement:

The *Avocado industry and market data capture and analysis* (AV20000) project has been funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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# Driving Export Success

*Flora Zhang, Avocados Australia Export Development Manager*

Expanding your business through exports is an exciting endeavor, and one effective way to achieve this is by investing in strong business relationships. Hosting an international buyers' mission provides a unique opportunity to connect with potential buyers and cultivate valuable connections. Last month Avocados Australia had the opportunity of working with Trade and Investment Queensland (TIQ) on inviting 14 international delegates to Far North Queensland as part of the Taste of Tropical Queensland program. The Taste of Tropical Queensland was held by TIQ and connected both international and domestic buyers with Queensland exhibitors. The 14 delegates for the avocado program included retailers and importers from Malaysia, Singapore, Hong Kong, and the Middle East.

In this article, I will share my learnings with you to help you explore how to leverage these relationships and understand your export opportunities while driving your avocado export growth.

## 1. Building Authentic Relationships:

To establish a solid foundation, it is crucial to invest in building genuine business relationships. Take the time to connect with individuals on a personal level, fostering trust and mutual understanding. This can be accomplished by organizing farm visits, where international buyers can experience first-hand the land and trees where avocados are grown. Sharing your passion for avocado cultivation and providing informative updates, such as season reports harvesting/packing updates and farm updates, will demonstrate your commitment to quality. If the exporters are new to the export space, it might take a while to experience and select like-minded business partners.

## 2. Understanding Buyers' Objectives:

To effectively cater to the needs of your potential buyers, it is important to understand their business objectives. Spend the time necessary to establish your vision and business plan for the next 2-3 years as it is important in helping both parties to instill a growth mindset. Engage in regular communication to gain insights into what matters most to them and what challenges they are facing. Are they focused on capturing a larger market share for avocados, or are they looking to build their brand and reputation on selected channels? By aligning your efforts with their goals, you can identify mutual benefits and tailor your export strategy accordingly. It is also a great opportunity to demonstrate your commitment to building export markets and to nurturing the business relationship.

## 3. Adding Value through Expertise:

Position yourself as a trusted grower/exporter by showcasing your expertise in avocado production and the supply chain. Share your knowledge and insights with the overseas buyers, help them to understand the quality standards, critical factors in growing export ready avocados, and market trends related to avocados. By positioning yourself as a quality expert, you not only instill confidence in your product but also provide added value to your customers.

## 4. Regular Communication and Follow-up:

Maintaining regular contact with your buyers is essential for nurturing long-term relationships. Stay informed about their business updates and objectives and demonstrate your commitment to their success. Share relevant industry news, provide market insights, and discuss potential areas of collaboration. By staying connected, you can adapt your export strategy to evolving market conditions and address any concerns promptly. Regular communication can be via WhatsApp, LinkedIn, or text messages and share photos of your avocados.

## 5. Identifying Opportunities to Add Value:

Identify how your business can add value to your customers through avocado exports. This could include offering seasonal updates, providing tailored packaging solutions, or developing joint marketing campaigns. Collaborating with buyers to understand their specific needs and preferences allows you to differentiate your product in the market and strengthen your competitive advantage.

Investing in business relationships is a key driver for export success. Hosting an international buyers' mission serves as a platform to build authentic connections and gain valuable insights into your potential buyers' objectives. By investing time in understanding their needs, sharing expertise, and maintaining regular communication, you can drive export growth and create mutually beneficial partnerships. Leveraging these strategies in the context of avocado exports will position your business for sustainable success in the global market.

## Contact Information:

For more information contact Flora Zhang, AAL's Export Development Manager, email [export@avocado.org.au](mailto:export@avocado.org.au) or call 0499 600 613.



## Acknowledgement:

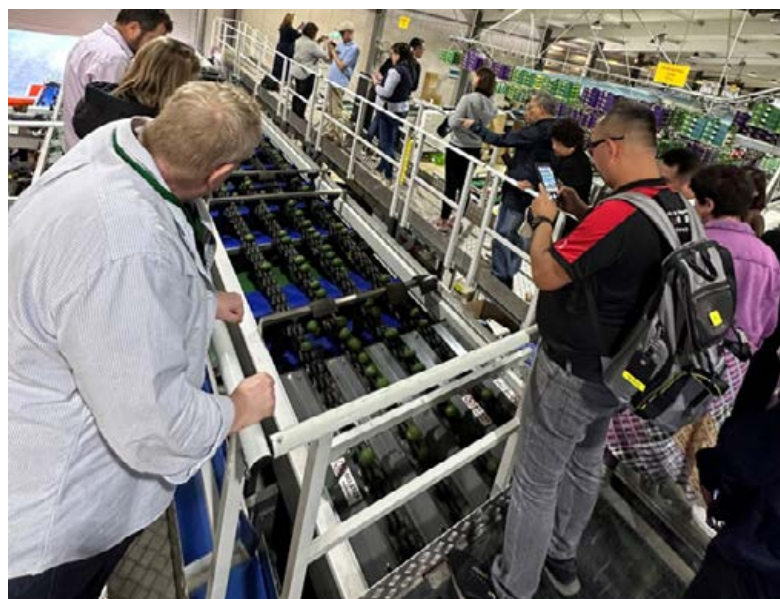
This *Avocado market access and trade development* (AV20004) project has been funded by Hort Innovation, using the Avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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Participants of the TIQ organized international buyers' mission.



Participants could see sorting and packing in action.



International buyers' mission participants hear from a grower.



Participants could see picking in action.



# Market Access Update

*By Richard Magney, Avocados Australia Chief of Export – Market Access*

Market Access continues to see a variety of opportunities and developments across the space. Since my last article, we have completed the ten trial shipments to India, received approval by Japan Ministry of Agriculture, Forestry and Fisheries (MAFF) for our accredited property list to begin exports from WA, completed Thailand accreditation for Western Australia growers and packers, discussed progress with Department of Agriculture, Fisheries and Forestry (DAFF) for New Zealand market access improvement specifically avocado sunblotch viroid (ASBVd), begun building some frameworks around market access improvement for Japan, taken important steps toward progressing market access to Vietnam and China, and collaborated with project authorities to make critical and positive strides toward the launch of the forthcoming \$100M Fruit Fly R&D investment project, AM22000.

## India

The India trial shipment taskforce made up of members from DAFF, Austrade, Avocados Australia (AAL), and industry, successfully orchestrated the execution of shipments to Delhi and Mumbai under the Indian draft protocol. The tenth and final trial shipment arrived in India on 5 July, and we are excited to announce the successful completion of the trial shipment process. Again, a big thank you to all the growers and packers that submitted an EOI to participate in the trial shipments, and to trial partners; Costa, Simpson Farms, Don Fort Packing, The Avolution Group, and Sunny Spot Farms, for their diligence, patience, and investment, to achieving a great outcome for industry.

AAL and DAFF are working toward an indicative timeline to try and have industry registered and accredited late August-early September, to continue the supply chain into India. All involved are working feverishly to ensure there is as little disruption to the supply chain into India, particularly given the trial shipment avocados are already being successfully sold through retail to Indian consumers.

The Minister for DAFF, the Hon. Murray Watt, invited AAL CEO, John Tyas, to attend a department outbound trade delegation visit to India in early July where John had the opportunity over several days to network with Minister Watt to progress the launch plans of Australian avocados into India, but also spend time discussing with Minister Watt other important key steps the avocado industry needs to take to drive access into emerging negotiable markets (within the IMAAP pool) such as Vietnam and China, and market improvement pathways for Japan and New Zealand.

## Japan

April through June, the WA industry underwent their annual Japan registration and audit/accreditation process. All applicants passed with flying colors, and subsequently the accredited list has been approved by MAFF. We witnessed the growth of the applicant pool with 7 new growers and 1 new packer bringing the total accredited pool to 22 growers and 5 packers. Exports began early July with demand looking greater than in previous seasons.

Gaining market access improvement to Japan for the broader Australian avocado industry is a key performance indicator for AAL and aligns with the market improvement plan of DAFF. MAFF have provided technical feedback to DAFF on the barriers we need to address and overcome to ensure our fruit is pest free. AAL are working with researchers, namely research partners of the Fruit Fly investment project, AM22000, to curate a research plan, and data package, sufficient to meet technical barriers.

## Thailand

The Industry Advice Notice (IAN) for registrations for Thailand opened at the same time as Japan. WA growers and packers were able to register in sync with Japan registrations. Late June, Thailand Department of Agriculture (DOA) rubber stamped the official gazetted protocol and sent it through to DAFF. DAFF will undertake Thailand audits and accreditation in preparation for an accreditation visit by the Thailand DOA late August. Thailand DOA have made a verification shipment request, and for industry to complete one shipment which meets the requirements of the protocol. This shipment can be shipped immediately after Thailand's verification visit, and it could be expected that WA could have access to export early October, and as early as mid-September if an air freight shipment is allowed for the verification. We do not have confirmation of the shipment mode at the time of drafting this article.

## New Zealand

ASBVd is a quarantine pest for New Zealand. New Zealand currently requires Australian avocados to be sourced from orchards that have been planted using approved stock known to be free from ASBVd. Under these conditions a grower must provide documentary evidence for registration with an official tree certification scheme such as ANVAS, with reference to indexed and non-indexed blocks. While this approval of orchards based on ASBVd-free planting material is an effective means of demonstrating freedom from ASBVd, these conditions mean that if records such as the identification

numbers for the planting material are not available, the orchard may not be approved for export.

A new statistical survey protocol has recently been developed for demonstrating freedom from ASBVd at the production site level. The protocol has been published in a peer-reviewed journal (Bonnéry et al. 2023) and implemented in a software app that allows users to optimise sampling strategies for testing to demonstrate freedom from ASBVd.

Australia is proposing to include orchard surveys based on this protocol as an alternative option to demonstrate freedom from ASBVd to the import conditions for fresh Australian avocado fruit to New Zealand. This option would enable avocado orchards to be retrospectively certified as pest free places of production based on surveying, which would allow pest freedom certification where historical records of the ASBVd-free planting material are not available.

DAFF made this submission to the New Zealand Ministry for Primary Industries on 25 May and are awaiting feedback.

### Vietnam

DAFF are currently at the tail end of negotiating access for blueberries and plums to Vietnam. It is forecasted these negotiations will be finalised in 2024. Avocados are sitting within the Industry Market Access Assessment Panel (IMAAP) negotiation pool, alongside several other commodities, as next in line for potential negotiation. Work is ongoing to best prepare avocados in the event we are chosen as the next commodity within the pool. I will make a visit to Hanoi, Vietnam, week 7 August, to meet with Vietnam Ag Counsellor, and Commissioner for Trade and Investment. Meetings with importers, the Fruit and Vegetable Association and retailers will also take place. Intelligence gathering will assist in the ongoing development and execution of the Vietnam Market Access Strategy.

### China

There has been much discussion broadly through Commonwealth Ministers, including our Prime Minister, the Hon. Anthony Albanese, on the thawing and rebuilding of bilateral trade relations between China and Australia. We have witnessed the export re-ignition of horticultural and agricultural commodities into China, and healthy rhetoric from senior Chinese diplomats. China, as we know, remains a burgeoning market for all goods and services from all corners of the globe, and in particular, Australian products. Financial prosperity remains trending upwards across their middle class and data indicating the appetite for avocado reflects increasing demand.

Similarly, to Vietnam, DAFF continue to push the negotiations with General Admission of Customs China (GACC) for apples and blueberries. Avocados sit alongside other commodities in the IMAAP pool for an opportunity to be next in line for negotiation. I will embark on an exploratory visit to Beijing and Shanghai immediately following Vietnam, to meet with Chinese avocado importers, our China Agriculture Counsellor and Trade

Commissioner, and Chinese customs and quarantine authorities to begin understanding the biosecurity barriers we may face in any likelihood of future technical market access negotiations. It is planned for a more broader industry trade delegation visit to China in September/October to drive our market access agenda, and to broaden our networks across the Chinese avocado industry, importers, Australian-China Chamber of Commerce, retailers, and other key influential constituents that help raise the awareness of Aussie Avocados in China which can help drive market access prioritisation and opportunities.

### AM22000

AM22000 is the new market access fruit fly R&D investment project. One of the fundamental goals of this investment is to derive robust data packages to assist in the negotiations for market access and/or market improvement. The project has an 8-year tenure and will afford circa \$100M of investment to drive substantial and tangible R&D outcomes. AAL has been working closely with Hort Innovation and the Queensland Department of Agriculture and Fisheries project management team to best prepare broader department and industry consultation. It is expected the project will begin in the third quarter of 2023.

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# Simon Newett retires this year

This year Simon Newett retires from his position as Principal Extension Horticulturist at the Queensland Department of Agriculture and Fisheries (QDAF) and as the Project Leader for the Avocado industry development & extension (AV17005) project. Simon has had a long and distinguished career and is known and well liked within the Australian avocado industry and beyond. He has been working for 36 years in the extension and production of field crops (cotton, corn, soybeans and sugar cane) and horticulture (avocado, cashew, macadamia, passion fruit and pineapple).

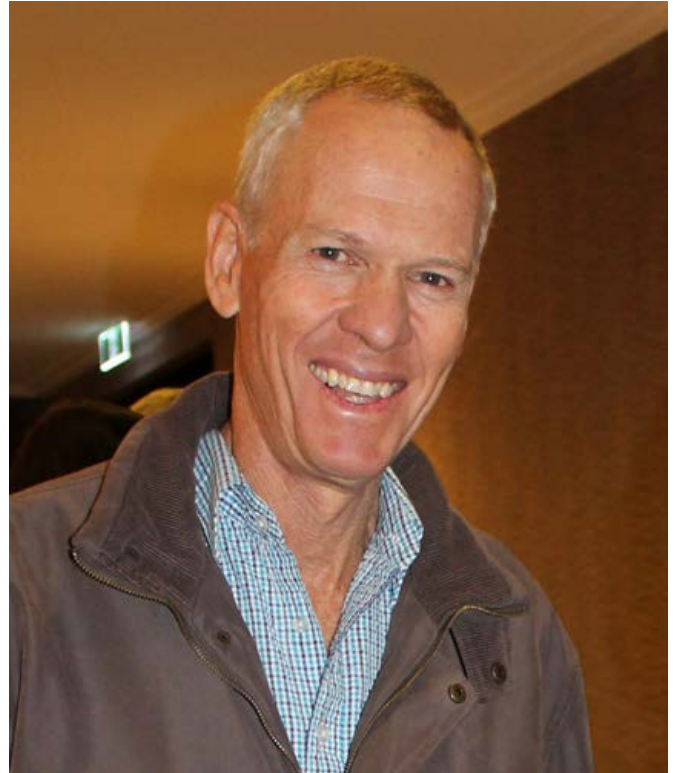
Zimbabwean born, Simon commenced his career in agriculture after graduating from a Bachelor of Science in Agriculture (with honours) at the University of Natal in 1978 (in the South African province now known as KwaZulu-Natal). In the early eighties Simon was involved with the Ord River ethanol from sugar cane project, the Wildman River cashew project, CSR Limited Sugar Division and New Business Development Group. He started as a horticulturist with CSR Limited with their macadamia activity then moved up to be Orchard Manager and Nursery Manager. In the early nineties Simon was horticulturist and Deputy General Manager (Orchards) with Macfarms (formerly CSR Limited). He commenced work as horticultural extension officer with the then Department of Primary Industries in 1992 and then continued to work for the Department of Primary Industries and Fisheries (DPI&F), then Department of Employment, Economic Development and Innovation (DEEDI), Department of Agriculture, Fisheries and Forestry (DAFF) and then QDAF.

Simon has attracted many honours and awards during his career. In 2013 he received an “Outstanding Industry Contribution Award” from Australian Pineapples, two years later he received the highest honour Avocados Australia could bestow in the form of an “Order of Merit” award for making a valuable and significant contribution to the Australian Avocado industry. In 2017 Simon received the 25-year meritorious service award from QDAF.

Simon made his role seem easy. He has a natural ability for communicating complex science into easy-to-understand practical approaches. His career has taken him around the world (this includes attendance at numerous conferences/symposia and study tours) and he has provided assistance to many farming systems in need.

Simon is generous with his time and is willing and able to respond to any grower's questions wherever they may be. He is a talented horticulturist and will be missed by many in the industry.

John Tyas, CEO of Avocados Australia, wanted to thank Simon for his contribution to the industry.



Lachlan Donovan and John Tyas present Simon Newett with AAL's “Order of Merit” award.

“It has been a pleasure working alongside Simon Newett and his contribution to the Australian avocado industry has been extensive,” said John Tyas, CEO of Avocados Australia.

“I wish Simon and his family the best for the future.”

Avocados Australia is aware that Simon made a positive impact on many members of the Australian avocado industry. We would like to share with you some of their words of thanks:



### **Tony Whiley:**

*"In 1992 Simon was appointed as an Extension Officer at the Department of Primary Industries, Maroochy Horticultural Research Station at Nambour and was tasked at providing support and technical information to Queensland's thriving pineapple industry. This was about the time desk-top computers were gaining traction for use in the home office and small businesses. The Australian avocado industry through its spokesman Don Lavers, saw an opportunity to use this technology as an in-house, farm management tool providing customised programs for use in their orchards. To capture this concept, the AVOMAN project was designed and subsequently funded by industry in the early 1990's. For its time this was very forward thinking by an industry body, and it drove substantial innovation over the following years. Initially the project was led by Alex Banks (Extension) and supported by Shane Mulo (Computer Science) with inputs from research personnel across production disciplines. About one year into the project, Alex was transferred to Applethorpe and a new project leader was required. It was identified at the time that Simon had both the work ethics and personality to take on this demanding role and he was duly appointed. Hence by a twist of fate, a boy from Zimbabwe became captured by the Australian avocado industry, for which he has tirelessly served for the past 30 years, acquiring extensive knowledge on all aspects of avocado production, and supported by a network of peers drawn from both national and international locations. He has also made a substantial contribution to avocado literature being the senior author for the Cultivar chapter in the international reference book, *The Avocado: Botany, Production and Uses* 1st Ed., and the Avocado and Pineapple chapters in the AgriLink Crop series along with numerous other technical papers and notes. We wish him well in a well-earned retirement."*

### **Simon Grabbe, Simpson Farms:**

*"I have been privileged to know Simon for quite a long time. I have had the pleasure of working with Simon on avocado industry projects either directly or as members of advice panels. Simon and I have been part of the SIAP since its inception in 2015. Through all of the industry work I have been involved in with Simon, his knowledgeable, respectful and insightful approach has been a pillar of the success of these programs. Simon's genuine decency and effort is something that cannot be overstated and will be missed by those who worked with him and by the industry as a whole. Outside of the industry work, Simon has always been available to answer questions, provide information or make connections with other experts to help with any problem that has arisen in the orchard or supply chain."*

*"Simon's work on the Best Practice Resources, Problem Solver Field Guide, Training Videos and his overall involvement in extension and communications programs have given the avocado industry solid foundations. Simon's ability to make a practical connection to the science that has been undertaken and deliver the outcomes in a way that can be readily understood and implemented by growers gives Australian growers every chance to be successful. Simon and his team's latest innovation with the best practice workshops for irrigation, canopy management and soil health have lifted the bar for industry consultation and delivering best practice outcomes."*

*"Simon has delivered for the avocado industry over many years and is a respected horticulturist and advisor both nationally and internationally. I wish Simon all the best for the future, he can retire knowing he has given an extraordinary amount to the development of a dynamic, challenging and growing Australian avocado industry."*

### **Christopher Searle:**

*"Simon Newett, a person that never said 'No' when it came to helping a grower. I have known Simon for close to thirty years and in all that time I've never heard him say 'No' to helping a grower. It didn't matter what sort of pressure he was under from the Department or Hort Innovation; growers always came first. Always answering the phone or replying to an email, digging out the information needed, before returning to his prior task. Anyone who has had dealings with Simon knows he delivers good solid practical advice that is backed up by the literature and grounded in common sense. This can be seen all throughout the BPR where Simons input is everywhere. On the many field days and workshops that Simon has run they seemingly run effortlessly, which is a testament to all the hard work that has gone on in the background, to make them informative and relevant."*

*"Now that Simon is retiring, he's going to have more time for swimming which he is very good at mainly because of his very large feet. The shoes that contained those feet are going to be very hard to fill and his helpfulness and authoritative demeanour is going to be sorely missed."*

### Alan Blight:

*"I have had the good fortune to know Simon for over 20 years. He has always been super professional in his work with avocado extension. Simon has a relaxed personality with farmers that makes them feel comfortable and interested in what he has to say. His work ethic though is anything but relaxed and he has worked tirelessly to improve the avocado industry. There are always challenges in getting growers to uptake R&D recommendations. Simon is the most effective person I have ever seen trying to get farmers to adopt new ideas."*

*"More importantly, Simon is a great bloke. I had the good fortune to go to the World Avocados Congress in Mexico with Simon in 1999. In between our avocado commitments we adventured in the Mexican countryside. Getting lost in Mexican forest and being rescued by a local family who didn't speak English is something I won't forget. If Simon was worried, he didn't show it. Just his usual calm, resourceful self. In the years since I have always looked forward to catching up with Simon. Supposedly to discuss avocados, but usually getting sidetracked by more important things."*

*"I really wish Simon the best in his retirement. I'm sure he will have plenty to keep him busy but hopefully at a more subdued pace."*




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# Avo Connections – Industry comes together in Adelaide



On Monday 5 June over 150 industry representatives came together to hear the latest avocado developments related to the domestic market, export markets, food service and international marketing of Australian avocados. “Avo Connections”, Avocados Australia’s annual forum, brought together key players in the Australian avocado industry and it was an excellent opportunity for networking. Representatives from Avocados Australia, Hort Innovation, Applied Horticulture Research, Queensland Department of Agriculture and Fisheries, Freshlogic, Department of Agriculture, Fisheries and Forestry, NSW Department of Primary Industries and Austrade spoke at Avo Connections and provided insights into aspects of how the industry is performing, the challenges and opportunities.

First up, John Tyas’s Industry Update provided an overview of the industry’s current position. John outlined the supply dynamics at play, current production overall and by growing region, shared the forecast production to 2025/26 and what

Avocados Australia is doing to address supply dynamics. He also outlined the factors playing a part in demand dynamics and what Avocados Australia is doing in the area of market demand building activities. Both domestic and export market demand was covered.

With sustainability being top of mind for consumers around the world it was good to hear from Dr Anthony Kachenko (Hort Innovation) about the Horticulture Sustainability Framework. His presentation outlined that a sustainable horticulture sector is one that is vibrant and prosperous, produces food to nourish and plants to nurture people and communities worldwide, provides fulfilling employment and protects our environment now and for future generations. Anthony said that the current sustainability conversation is focused on environment, social and governance issues. He said that 57% of members of the Horticulture sector when surveyed said they were either “Somewhat prepared” or “Very prepared” to meet Agricultural Sustainability Targets such



as those set by the European Union<sup>1</sup>. Anthony talked about the results of the “Community Trust in Australia’s Rural Industries” Year Three National Survey (2022) where 85% of Australians believe that rural industries play a key role in making fresh produce affordable to Australian communities. 65% of those surveyed agreed that farmers play an important role in addressing climate change. Importantly, the value of having an industry sustainability framework was outlined: 1) drives Market Access, 2) meets community expectations, 3) addresses customer demands, 4) builds enduring trust, 5) assists with accessing Capital Market, and 6) minimises and anticipates regulation.

Adam Goldwater (Applied Horticultural Research), Noel Ainsworth (Queensland Department of Agriculture and Fisheries (QDAF)) and Anne Larard (Avocados Australia) talked about Domestic Supply Chain Quality Monitoring. With Anne providing an overview of the new “Monitoring avocado supply chain quality” project (AV22011).

Other highlights from the event were the presentations that elaborated on Avocados Australia’s priorities such as increasing consumption of avocados and increasing exports to overseas markets. These were the presentations from Martin Kneebone (Freshlogic) about Food Service, Gillian Reilly and Emma Day (Hort Innovation) on Australian Avocados Domestic Marketing, and Troy Agosti’s presentation on Australian Avocados Export Marketing.

Noel Ainsworth and Yiru Chen (QDAF) spoke about the importance of delivering consistent quality to support export growth and how the fruit robustness project (AV21005) will support growers in improving fruit quality.

An update on Market Access was delivered by Peter Creaser (Department of Agriculture, Fisheries and Forestry). He outlined the current market access for avocado with respect to non-protocol Markets (Hong Kong, Singapore, Malaysia, Indonesia, Middle east), protocol markets (Japan (WA only)), and those awaiting access (India (2023), Thailand (2023 WA only), China, Japan (Eastern States), Taiwan, Vietnam, and New Zealand). Peter outlined the challenges in that negotiations and processes are technically complex, that trade is a two-way street, and that there is a high demand for market access outcomes.

With market access to India very close it was good to hear Emily Wood (Austrade) providing a “Country Brief” about India. She talked about the current market trends, channels to market, how to succeed as an industry and tips for doing business in India. India has a strong economic outlook, its population of 1.4 billion has an expanding middle class that are expected to contribute to a 300% increase in consumer spending by 2030. Apparently, Australia is well regarded by Indian consumers. Educating Indian consumers about avocados is important. Also, gaining a greater foothold in the Indian market requires the industry to ‘be there’ so relationships are key, a local presence, patience and collaboration with key retailers is beneficial. Austrade’s

“Go Global Toolkit” was discussed which helps to identify, understand and prioritise markets (see Austrade’s website here: <https://export.business.gov.au>).

Two panel sessions were held during the day providing opportunities for two-way discussion with audience members.

Overall, the forum was a great success and Avocados Australia was encouraged to see so many members of the industry turning out for the event.

Industry members who missed the event can access copies of all of the presentations on the Best Practice Resource in the Library under “Event Proceedings”.

### Source:

<sup>1</sup> Australian-grown Horticulture Sustainability Framework Discussion Paper, 2022.





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# Hort Connections – Knowledge for Growth theme hits its mark



Members of Australia's various horticulture industries descended on the Adelaide Convention Centre from 5 to 7 June for "Hort Connections", the annual conference delivered by the International Fresh Produce Association Australia-New Zealand and AUSVEG. This year's event was the biggest so far with over 3,000 delegates in attendance. The exhibition hall featured displays from over 200 exhibitors. The theme of the conference was "Knowledge for Growth" and those wanting to hear the latest updates and news on innovations weren't disappointed.

Over three days delegates networked and came together to hear the latest developments and insights affecting

the horticulture sector. The buzz words were automation and sustainability. With many in the horticulture sector experiencing labour difficulties over the last few years the automation solutions on display were an attraction.

Day 2 started with a breakfast sponsored by Perfection Fresh where delegates heard from the South Australian Minister for Agriculture and other keynote speakers. Futurist Gus Ballbontin (former Executive Director and CTO of Lonely Planet) spoke about using information automation to grow knowledge and grow business. He encouraged those present to invest in innovations and to be open to change in order to stay competitive.



Packaging suppliers showcased the latest in pulp and paper packing as retailers are moving away from plastic packaging. Former Masterchef contestants manned the Coles trade display preparing dishes for delegates to try. Hort Innovation offered pumpkin and cauliflower ice cream to those in attendance in the exhibition hall.

Talks were held on site in the exhibition space in enclosed spaces along with a number of sessions and functions being held in the upper levels of the Adelaide Convention Centre.

A Smart Technology presentation from the Applied Horticultural Research team was a highlight whereby they outlined how they put the latest technologies to use to find new and innovative ways to deliver real-time field data into the hands of farmers, allowing them to make best decisions for their crops. This is the team that is working on Austchilli's Smart Avocado Farm.

The Gala Dinner on the evening of the final day of the conference was an excellent opportunity to see the people making advances in the industry. The winners of the Hort Connections 2023 National Awards for Excellence were:

- Pirrone Brothers, QLD – Syngenta Grower of the Year
- Robert Arvier, West Pine Ag, Tas – Corteva Agriscience Young Grower of the Year

- Angela Ruffo, Tripod Farmers Group, Vic – Boomaroo Nurseries Women in Horticulture Award
- Frank Frappa, Premier Fresh Australia, Vic – Hort Innovation Exporter of the Year
- Michael Rettke, SARDI, SA – Bayer Researcher of the Year
- Bruce Scott, Campbells Fertiliser, Vic – Visy Industry Impact Award
- Allan McGann, drumMASTER (Agsafe), NSW – E.E. Muir & Sons Community Stewardship Award
- Fresh Select, Vic – Butler Market Gardens Environment and Sustainability Award
- Kylie Hall, Hectre, NZ – UPL Tech Innovation Award

Two members of the avocado industry made it as finalists in two award categories (Lachlan & Annaleise Donovan – Grower of The Year and The Avolution - Exporter of the Year). It was also good to see Simon Newett (QDAF) making it as a finalist of the Bayer Researcher of the Year Award.

Overall, the event was well worth attendance and the Avocados Australia team gained value in connecting with fellow delegates. The Hort Connections organisers confirmed that next year's event will be held in Melbourne.

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# Bundaberg's AvoFresh achieves success exporting to Malaysia



Bundaberg-based AvoFresh's innovative avocado spreads and classic guacamole have been welcomed by avocado lovers across Malaysia. After launching in March 2023, AvoFresh is now available in most major retail chains across the country.

"The future for growth in Malaysia remains extremely optimistic," says Yale Morgan, Export Manager for AvoFresh. "We are looking forward to many years and relationships ahead."

"Our hope is AvoFresh becomes a known, quality brand for Malaysian consumers and they continue to enjoy the convenience and quality of AvoFresh."

AvoFresh was created in 2010 by father and son, David and

Trent De Paoli. They saw an opportunity to provide lovers of avocado with a convenient alternative to the traditional methods of preparing this nutritious fruit.

The innovative process involves peeling and pitting the avocados at the peak of their ripening. A unique cold-pressed, high-pressure technology delivers the product into convenient tubes and tubs. This ensures the highest levels of freshness and retains a natural taste and texture.

Made with a minimum of 95% cold-pressed avocado in every pack, AvoFresh has no artificial colours or flavours. The AvoFresh range is available in squeezable tubes, single serve and resealable tubs. It comes paired with two flavours, a "hint of lemon" or "lime & black pepper".



Only a few years ago, avocados were considered an “impulse buy” without broader acceptance across the Malaysian market. Today, Australian avocados are displayed prominently at the entrance to many supermarkets.

Sales are experiencing strong growth as Malaysian consumers seek healthy alternatives for snacks and lunch. Foodservice outlets are increasingly using avocado in their recipes, often with a local twist.

Malaysians’ increasing interest in healthy products meant it was a perfect time for AvoFresh to diversify beyond established export markets such as New Zealand and Singapore and launch into Malaysia.

Austrade’s Kuala Lumpur office provided advice, market insights and introductions to importers, distributors and retailers.

Advice on marketing strategies through traditional channels and social media was also an important consideration in building the AvoFresh brand and consumer acceptance.

AvoFresh’s Export Manager Yale Morgan says David De Paoli, Owner and Managing Director, and the AvoFresh team, are thrilled to have their AvoFresh “Ripe and Ready” products in most of the major retail chains in Malaysia.

The AvoFresh team has visited Malaysia regularly over the past 12 months. They have received a warm welcome from customers and have been encouraged by the level of interest in Australian-made, Australian-grown products such as AvoFresh.

Avocados Australia works closely with Austrade in order to develop export opportunities for Australian avocado growers and exporters. If you would like to know more about this contact Flora Zhang, Avocados Australia Export Development Manager by email to [export@avocado.org.au](mailto:export@avocado.org.au) or call 07 3846 6566.

### Acknowledgement:

We would like to thank Austrade for their assistance with this article and for supporting Australian avocado growers and exporters during market visits and other export-related initiatives. Through the engagement between Austrade Malaysia and Avocados Australia, we were able to organize an outbound mission last year, inbound mission and a number of business matching initiatives. Thank you for your dedication. Austrade’s efforts in fostering Australian avocados has played a vital role in our industry’s growth and success.



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# Preliminary testing shows strobilurin fungicides are no longer effective against anthracnose

By Liz Dann, Lara-Simone Pretorius, Imsu Nokdy, University of Queensland

Azoxystrobin was first registered for use in avocado by Syngenta in 2003 as Amistar®WG (wetable granule), with later registration as the soluble concentrate (SC) formulation in 2005. It was registered for control of a range of fungal diseases in many crops, including anthracnose, caused by *Colletotrichum* spp. and stem end rot in avocado and mango.

Group 11 (strobilurin or QoI) fungicides, including azoxystrobin and many others, kill fungi by targeting a specific gene involved in fungal respiration. This single-site mode of action classifies them as being “high risk”, for the fungus developing resistance to its action, through genetic mutation. The longer that these single-site chemicals are used, the higher the chance that target fungi could develop resistance. For this reason, the labels for Amistar and other strobilurin fungicides, have very strict instructions for their use, as part of an anti-resistance strategy, to reduce the risk of resistance and prolong the life of the fungicide. While these fungicides are best used preventatively, they are considered translaminar, and remain active within the leaf and cuticle of the peel for several weeks, and thus have a useful post-infection activity.

Our AV16007 project work during 2020 - 2022 showed that pre-harvest applications of Amistar 250SC, at label rates, did not result in reduced severity of anthracnose, compared with untreated or limited copper-only controls. This supported anecdotal evidence from several growers who felt that azoxystrobin sprays were not as effective as they once were. This suggested that *Colletotrichum* sp., the fungus causing anthracnose, had possibly mutated to become resistant to the QoI strobilurin group of fungicides.

Resistance to strobilurins is well known in *Colletotrichum* spp. causing diseases in other crops. From these previous studies we optimised a molecular test to detect the mutation, and thus screen for resistance in individual isolates of *Colletotrichum* from avocado. So far, we have screened only a small number of isolates, but confirm that a high proportion of isolates sourced from orchards which have a history of using azoxystrobin fungicides, were resistant. Three of these are from south east Queensland, and 2 from south west WA. This was confirmed in agar plate tests, where the resistant isolates grew very well on plates amended with high concentrations of azoxystrobin (Fig. 2). Only 1 isolate from an orchard in NSW with history

of azoxystrobin did not have the gene mutation for resistance. Isolates from pre-Amistar days (available from the QLD Dept. Agriculture and Fisheries fungal collection), and those from organic and minimally-sprayed orchards, are still sensitive to azoxystrobin, and do not have the mutation.

## What are our next steps?

We have a very large collection of *Colletotrichum* isolates from most of the growing regions, and will be screening more isolates in coming months to determine the range and extent of the resistance. Resistance will be confirmed using the molecular detection assay as well as the *in vitro* (agar plate) screening method. It is likely that resistance is widespread.

It is likely that there is resistance to the whole group of strobilurin fungicides, including trifloxystrobin, one of the actives in Luna Sensation. We will be checking growth on agar plates amended with Luna Sensation.

## What does this mean for growers?

- If the orchard has a history of using strobilurin fungicides for several years, there is a high chance the *Colletotrichum*, which is always present in orchards, has developed resistance
  - Your field sprays will no longer be effective
  - Graduate A+ in the packingshed will no longer be effective (except possibly for reducing stem end rot)
  - Do not be tempted to use ultra-high concentrations, or multiple applications, as this will only make the problem worse
- Canopy management is even more important to
  - a) reduce the source of *Colletotrichum* spores (dead twigs, branches and mummified fruit) and
  - b) to improve airflow in the canopy to hasten drying out after rain events, and improve spray coverage of fruit
- Field sprays with protectant fungicides throughout fruit development are important to prevent infection from occurring in the first place
- There is no evidence to suggest that the other fungicide groups registered in avocado are no longer effective

## How do you know if you have resistant isolates?

Our suggestion would be to select and tag a few trees or a row or two which have fruit at commercial maturity (i.e. over 23% dry matter for Hass). Spray the tagged trees with fungicide, (azoxystrobin formulations or Luna Sensation), wait a week. Harvest a few trays of fruit from both sprayed *and* unsprayed trees (label the trays), and keep them in a warm place to ripen. When fruit are fully ripe, or even a day or so over-ripe, cut them and peel to check for anthracnose lesions. It is difficult to determine the extent of the rot in Hass, which is why the recommendation is to peel the fruit to assess the damage (see Fig. 1). If there is a similar level of disease in strobilurin-sprayed compared with the unsprayed fruit, then it is likely the orchard has fungicide-resistant *Colletotrichum*, and there would be little point continuing with those sprays.

In most situations, if the crop has been well managed throughout fruit development, and given optimal picking, packing, storage and transport practices, there will be minimal problem with anthracnose disease, particularly in early season fruit. Breakdown problems may occur in late season fruit.

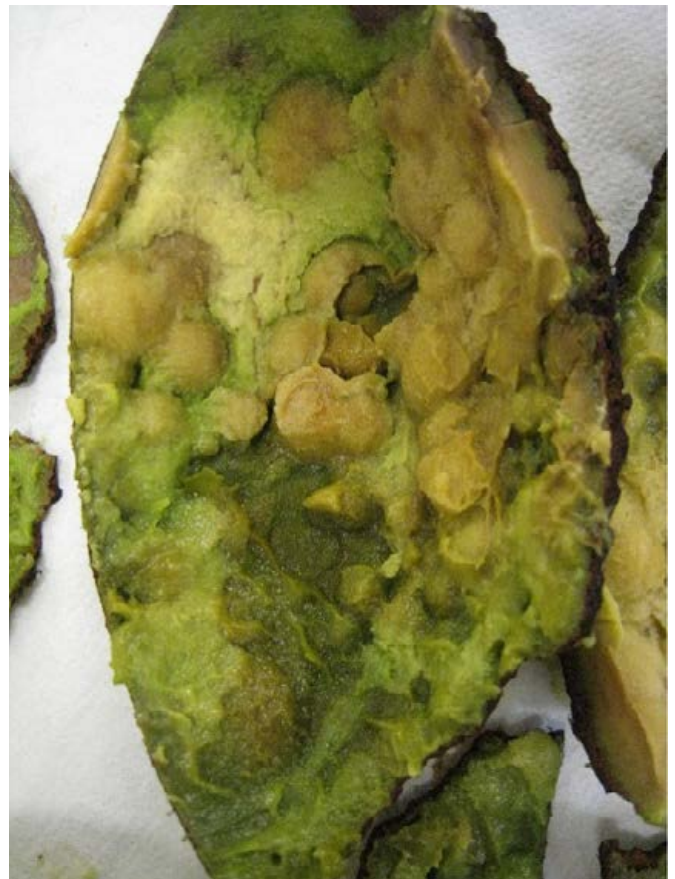
## What is industry doing about it?

Some alternative fungicides from other chemical groups, not currently registered in avocado, were identified in AV16007, which could be effective as pre-harvest sprays. Avocados Australia is working with Hort Innovation and agrichemical companies to progress potential label registrations or minor use permits for these other options.

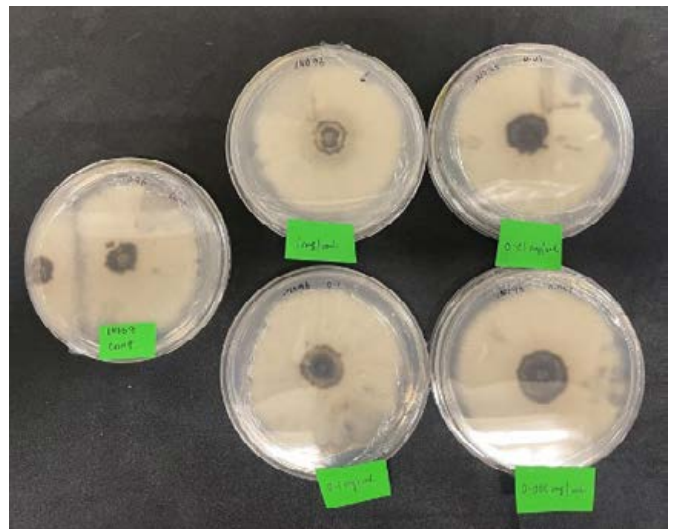
## Acknowledgements

Assoc Prof Liz Dann leads the avocado pathology and disease management projects, AV16007 and AV19005. Dr Lara-Simone Pretorius has optimised the assay for detection of the genetic mutation, and Ms Imsu Nokdy is a PhD student and has done the preliminary *in vitro* assays. She will be using both the molecular and *in vitro* tests to screen a much wider range of *Colletotrichum* isolates.

We thank the many growers and agronomists who have supported our research by collaborating on field trials, and allowing us to collect fruit. We thank Syngenta and Nufarm for providing product for testing, and for useful discussions throughout the project. AV16007 was funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower owned, not-for-profit research and development corporation for Australian horticulture. The project was jointly supported by the Department of Agriculture and Fisheries and the University of Queensland. AV16007 has recently been completed.



**Figure 1.** Anthracnose lesions observed on the inner peel of over-ripe Hass fruit. Each hemispherical lesion represents a single infection by a *Colletotrichum* sp. spore.



**Figure 2.** Growth of a Qol resistant *Colletotrichum* sp. isolate on agar plates amended with different concentrations of Amistar, (labelled as mg (azoxystrobin)/mL), compared with water control (left). For comparison, the label rate for field spray application is 80mL/100L, equivalent to 0.0002 mg azoxystrobin/mL.

# Continuing to spread the avocado nutrition awareness to health professionals

By Penny Eustace, Bite Communications

The program to “Educate health professionals on the nutrition and health benefits of avocados” (AV20003) has been busy over the last six months. Designed to improve the awareness, knowledge and attitude of health professionals regarding the nutrition and health benefits of avocado, the program is designed to encourage them to recommend avocado to their patients as part of a health and nutritious diet, and ultimately help increase Australian avocado consumption.

The AV20003 program is in its third year and continues to strengthen connections with health professionals. Below is an overview of activity over the last six months:

- A research study was conducted to gather evidence to support the health and nutritional benefits of avocados and encourage an increased recommended serving size from 50g to 75g. The study was conducted by CSIRO and published in the high impact Journal of the Academy of Nutrition and Dietetics. The findings were shared with key health media journalists and professionals via a range of communication channels, including the new Avocado digital hub, e-newsletters and research updates. A media release regarding this new research was distributed to 120 mainstream and specialist publications, media representatives, dietitians and healthcare experts. Many of them responded positively to the communication, and the media will be monitored to detect key messages from the report in ongoing coverage of avocado health and nutrition information.
- A mid-campaign benchmark survey was conducted in January 2023 with the target audience of health professionals - including dietitians, doctors and fitness professionals. The results indicate credible, evidence-based information and resources on Australian avocados are effectively reaching health professionals with 69% of respondents finding resources either useful or very useful, up 306% from the pre-survey result (17%). The program is delivering and providing resources that health professionals find most useful: a health professional website, research updates, patient resources and social media posts and infographics. Since the beginning of the program, we have seen a 38% increase of health professionals being quite familiar/having expert knowledge of the health benefits of avocados compared with pre-survey results (65% vs 47%). In terms of recommending avocados in a professional setting, health professionals are increasingly recommending consuming avocados daily (+69% from pre-survey results) or at least once a week (+113% from pre-survey results) to

their patients/clients/communities. When recommending avocado to patients or clients under their care, 6% of respondents recommend a whole avocado (+ 50% from pre-survey results) and 24% recommend a third (+118% from pre-survey results). The largest recommendation remains half an avocado (32%), which is the project serving size target. The research showed increasing the recommended serving size for avocado to 75g/day (half a medium avocado) would be widely accepted among health professionals. When asked whether they would agree to the Australian Dietary Guidelines specifying a serve of avocado as 75g (equivalent to a serve of vegetables), 72% of survey respondents either strongly agreed or agreed (compared to 62% in the pre-survey results). Ongoing education and amplification will continue across communication platforms for the duration of the program to increase knowledge of the nutritional properties of avocados and help overcome the price barrier when recommending them to clients and patients as a healthy inclusion in their everyday diets.

- A core activity of the program is participation in healthcare professional conferences. Australian Avocados had a trade exhibit at its third healthcare professional conference - the General Practice Conference and Exhibition (GPCE) held on 19-21 May 2023 in Sydney at the International Convention Centre. The new Avocado digital hub (<https://australianavocados.com.au/health-professional/>) was showcased and the raft of health professional and patient resources were promoted. The conference was well represented with over 800 general practitioners attending across three days. From the conference nearly 300 GPs signed up to the e-newsletter, with more than 3,000 hard copies of educational resources distributed and 250 fresh Hass avocados given away. The final conference will be 8-9 September at the Lifestyle Medicine conference in Melbourne.
- The second farm to plate avocado farm tour took place in Bundaberg, QLD, with a group of influential health professionals who were shown how modern farming delivers avocados fresh to our supermarkets. They learned how Avos are grown and discovered some creative and innovative ways to use avocados every day. An avocado farm tour video provided some inspiration and key insights (see it online here: <https://australianavocados.com.au/health-professional/news-and-events/farm-tours/>). Australian Avocados will run another two farm tours with key health professionals as part of the 2023 program to continue



building awareness and knowledge of the health and nutrition benefits of avocados and grow greater recognition of their culinary uses.

### Contact:

For more information on the program please visit <https://australianavocados.com.au/health-professional/> or contact Bite Communications Program Manager, Penny Eustace [penny@bitecom.com.au](mailto:penny@bitecom.com.au).

### Acknowledgement:

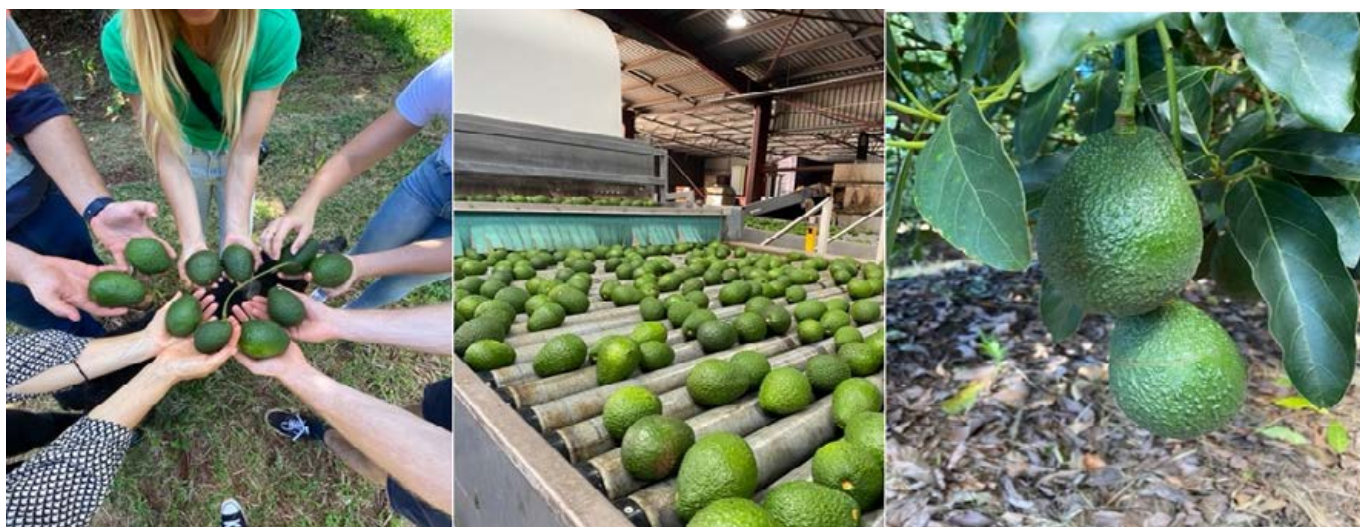
This project has been funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

**Hort  
Innovation**  
Strategic levy investment

**AVOCADO  
FUND**



Photos from the GPCE health professional conference.



Photos from the Avocado farm tour.

# Avocados can lower cholesterol without weight gain



Hort Innovation and Bite Communications recently reported and commented on new research that provides evidence that avocado can lower cholesterol without weight gain. Bite Communications are involved with the “Educating health professionals on the nutrition and health benefits of avocados” project (AV20003). Here are the details:

A new review of the scientific literature on avocados and cardiometabolic health has found daily consumption of avocados can reduce total and LDL cholesterol levels in people with high cholesterol, which could deliver positive benefits for heart health. High cholesterol currently affects more than 1.5 million Australians, including 21% of people aged 65 and over.

The systematic review, conducted by the CSIRO and published in the Journal of the Academy of Nutrition and Dietetics, also found eating as many as two

avocados a day did not cause weight gain or increased body fat.

Nicole Senior, an Accredited Practising Dietitian and nutrition consultant to the avocado industry, said these findings are positive news for the increasing number of Australians with high blood cholesterol.

“Raised blood cholesterol - especially LDL which is the bad type of cholesterol - is a common issue for many Australians, and this review shows avocado can help bring it down,” Ms Senior said.

## Weight gain no issue

The new review found that larger than usual daily intakes of avocado do not cause weight gain.

“The high daily amounts of avocado eaten in these research studies did not impact weight, which is good news for people who have been limiting how

much avocado they eat due to concerns around weight gain. It shows avocados can be included in kilojoule-controlled diets designed for weight loss or maintenance,” Ms Senior said.

## More avocado for maximum health benefit

Based on the most recent data, the average consumption of avocados is relatively low in Australia, estimated at around 3g per person per day across the population, and 16g per day in avocado consumers. This compares to the recommended daily serving, which is half a medium avocado or 75g.

The amount of avocado consumed in the studies included in CSIRO’s review was well above the current average and recommended intakes.

The CSIRO review found the amount of avocado that produced beneficial results on blood cholesterol levels ranged from 99g to 330g per day - the equivalent of



three quarters to just over two avocados (2.2) per day.

“So CSIRO’s analysis of the data shows there may be potential for health improvement in the Australian population from increasing avocado consumption above current daily intakes,” Ms Senior said.

“Increased intake could lead to an improvement in cardiometabolic health which may, in turn, help reduce the risk of cardiovascular disease in the Australian population, as part of an overall heart healthy diet,” she said.

Hort Innovation CEO Brett Fifield said the findings from the CSIRO study will be welcome news for both producers and consumers of Avocado.

“As a grower-owned research and development corporation, we invest in a range of projects that advance and promote Australia’s horticulture industry. It’s great to see our work with CSIRO will give health professionals

and consumers more information about including avocados in their diet,” Mr Fifield said.

### Wider health benefits

Avocados not only help reduce some risk factors associated with heart disease, they provide a wide range of additional health benefits. Avocado consumers are reported to have healthier diets overall, which may be in part due to avocado’s contribution to nutrient intake or the replacement of less healthy foods.

“Analysis of both Australian and US dietary intake data shows avocado consumers have higher intakes of dietary fibre, healthy fats (monounsaturated and polyunsaturated fats), vitamin E, magnesium and potassium, along with higher intakes of fruit and vegetables and lower intakes of less healthy ‘discretionary’ foods,” Ms Senior said.

“Avocado consumers also had lower body mass index (BMI) and waist

circumference than non-consumers,” she said.

### Further research

Ms Senior said while the number of published studies on avocados and health in the international literature is limited, with differing design and quality, the results of the CSIRO review are positive.

“Given the potential health benefits we could gain, there is a need for additional well-designed studies that can help us better understand how eating avocados can support cardiometabolic health, with an increased focus on different population groups who are at increased risk of developing non-communicable diseases,” Ms Senior said.

“This research gives us confidence when recommending a nutritious plant-based diet that includes plenty of vegetables and fruits, such as avocado, for a healthy heart,” she said.

Source: Hort Innovation

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# Fresh approach to levy investment advice

*By Gemma Burger, Industry Service & Delivery Manager, Hort Innovation*

The levy investment advisory mechanism for the avocado industry has undergone a recent change as part of a Hort Innovation initiative to 'reset and refresh' the investment prioritisation and feedback process across the entire horticulture sector.

All industries are being consulted and provided with an opportunity to select the investment advisory model that is best suited to their needs.

As a result of recent consultation and discussions, Hort Innovation has worked closely with AAL to develop an advice mechanism that aligns with the specific needs and structure of the avocado industry.

Previously, the two strategic investment advisory panels were responsible for providing advice for research and development (R&D) levy-funded investments or marketing levy-funded investments. The new Market Development Advisory Panel has been structured to have a post-farm gate and domestic and international marketing focus that includes marketing and R&D investments such as export development, quality in the supply chain, food service, retail engagement and marketing.

The Production Research Development and Extension (RD&E) Advisory Panel will provide advice on pre-farm gate R&D investments such as pests and disease, sustainability, irrigation, leadership development, irregular bearing and other production-based issues.

Under a collaborative arrangement, Hort Innovation and AAL in April selected the members for the new Production RD&E Advisory Panel (nine members) and the Market Development Advisory Panel (11 members).

There was a large number of high-quality applications and the selection process used an agreed skills matrix to ensure the necessary range of skills are represented across these advisory panels.

Panel members include growers and industry professionals who are tasked with providing expert industry advice to Hort Innovation to guide investment of both marketing and R&D levy funds (including government contributions where relevant).

The Market Development Advisory Panel met on April 26-27 for a collaborative marketing planning workshop with the Hort Innovation Marketing and R&D teams to advise and support the development of the marketing plan for domestic marketing as well as domestic and export market development activities.

This input and feedback was incorporated into investment recommendations which were presented to the Market Development Advisory Panel for formal advice and prioritisation on 15 May.

The Production RD&E Advisory Panel met on May 16 to consider a number of investment recommendations covering a range of projects across on-farm production topics.

Both panels will continue to meet quarterly in a combination of virtual and in-person meetings to monitor investments in line with the industry strategic investment plan developed in consultation with industry in 2022.

For further details, please contact Gemma Burger on 0458 650 876 or email [Gemma.Burger@horticulture.com.au](mailto:Gemma.Burger@horticulture.com.au).



The Market Development Advisory Panel met in April for a collaborative marketing planning workshop with the Hort Innovation Marketing and R&D teams to advise and support the development of the marketing plan for domestic marketing as well as domestic and export market development activities.



# Maximum residue limits – Use our MRL App

*By Anna Petrou, Avocados Australia communications manager*

All fruit that is exported must be compliant with the maximum residue limits for the target countries, and the residue levels in the fruit you are sourcing for export must be monitored to ensure compliance.

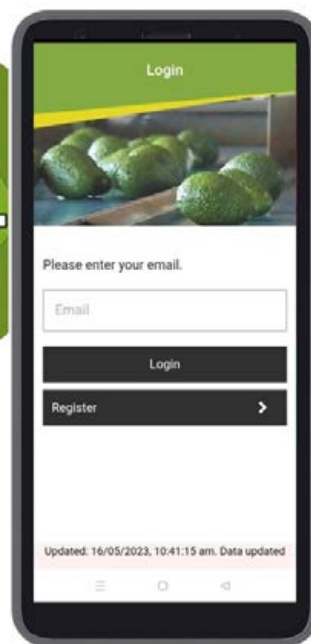
Avocados Australia has produced an Avocado Maximum Residue Limit (MRL) app. The app provides members of the industry with the means to search the Maximum Residue Limits (MRL) for avocados by active constituent and by export market. The app's layout is cleverly structured and designed for ease of use. The content contained in the MRL app is updated on a weekly basis.

Download the app on your mobile phone or device (search for “Avocados Australia MRL”), once installed open it and click on “Register”, fill in the online form. AAL will then process your registration and, once finalised, you will receive a confirmation by email.

On Android devices the app is available for download from the Play Store (you can use the QR code provided to access). On Apple devices the app can be downloaded from the App Store (use the QR code provided).

If you have any questions about the Avocados Australia MRL App please direct them to our Admin team, via [admin2@avocado.org.au](mailto:admin2@avocado.org.au) or call 07 3846 6566.

The Avocados Australia MRL App was designed and developed by the Australian Wine Research Institute, Avocados Australia and the Australian Table Grape Association, with funding via the Agriculture Victoria “Horticulture Innovation Fund”.



Access the “Avocados Australia MRLs” App.



Use this QR code to go to the Play Store for Android phones.



Use this QR code to go to the Apple App Store.

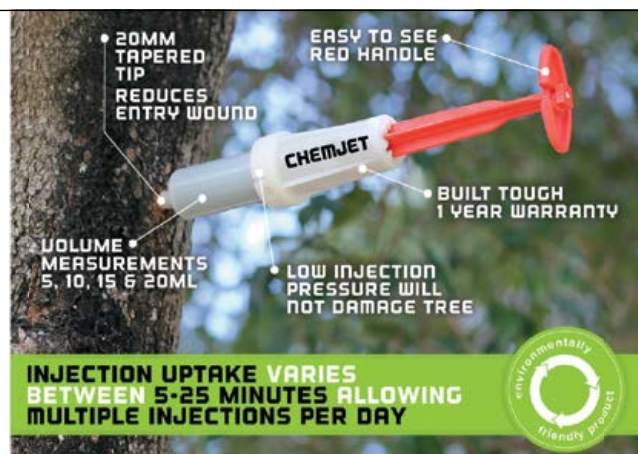


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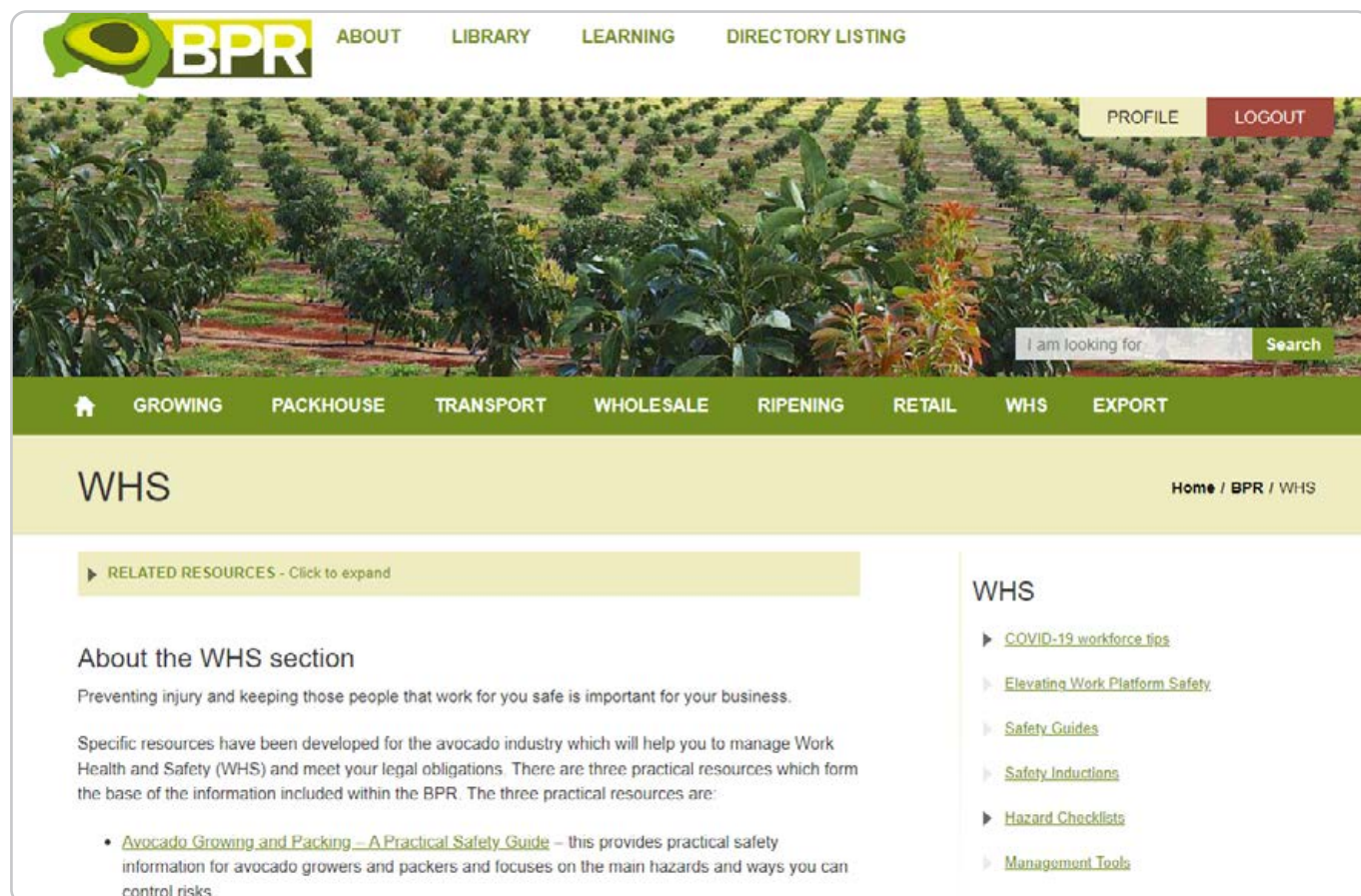
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# Safe Tractor Operation Guide on the BPR



People working with tractors on the farm are exposed to risk of injury and illness associated with a range of hazards. Tractors have been proven to be the deadliest piece of equipment on Australian farms so knowing how to safely operate a tractor is vital for ensuring the safety and wellbeing of not only your health, but the health of your workers.

Hazards associated with using tractors on Australian farms include:

- Tractor rollover
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- Hydraulics
- Ergonomics
- Noise
- Operator skills

On the Best Practice Resource online you will find a Practical Safety Guide dedicated to Safe Tractor Operation. This publication aims to provide practical guidelines for employers and workers to improve and ensure the safety of those who use tractors on farms, and those who are in the vicinity of areas where tractors are being used. This comprehensive guide details how to address the hazards associated with tractors, includes information on finding and fixing safety problems, outlines the steps for emergency preparedness, provides information about safe tractor access platforms and a hazard checklist. Importantly, the Practical Safety Guide outlines the legal obligations of employers.

To access the Safe Tractor Operation Practical Safety Guide login to the Best Practice Resource (BPR) at <https://avocado.org.au/best-practice-resource/whs/safety-guides/> (or use the QR code below). Log in to BPR and then you will be directed to the “Safety Guides” page. The guides are listed at the top of the page.





# Government's measures to strengthen Australia's Biosecurity System

*By Anna Petrou, Avocados Australia*



On 9 May the Federal Government in their 2023-2024 Budget introduced measures to secure “long term, sustainable funding to strengthen Australia’s biosecurity system”. This includes, among a range of initiatives, the introduction of a Biosecurity Protection Levy to apply to primary producers from 1 July 2024. This will allow time for the Department of Agriculture, Fisheries and Forestry to consult with impacted stakeholders (including small and large carriers) and allow industry time to adjust their systems (and pricing agreements). This levy will collect an amount “equivalent to 10 per cent of 2020-21 levy rates.” This is a completely new levy, and it will be separate to the existing R&D and marketing levies.

According to the budget the funding will be \$804.6 million, of this:

- Importers will pay approximately \$390 million (48%)
- Domestic producers will pay approximately \$47.5 million (6%)
- Australia Post will pay approximately \$15.4 million (2%)
- Taxpayer will pay approximately \$350.9 million (44%)

The Federal Government based their 2023-2024 Budget

biosecurity measures on feedback from previous industry consultation. The feedback on the development of a long-term sustainable funding model for biosecurity was that “a strong biosecurity system is of national significance and should be funded by risk creators as well as beneficiaries.”

Since the budget announcement, the National Farmers Federation (NFF) (with input from peak industry bodies, including Avocados Australia) pointed out that farmers already “bear the cost of managing historical pest and disease incursions and face the enormous threats posed by pests and diseases on our doorstep” but that farmers are not the risk creators who introduced the pests to Australia.

**Avocados Australia is taking part in the consultation process associated with the Biosecurity Protection Levy and will advocate strongly in the interests of growers on this issue.**

Information from the Australian Government suggests that the 10% is an indicative amount and that the levy rate for each industry will be determined through further consultation.

There are still many unanswered questions and it is not clear what legislation will be used to instigate the levy.

Clearly, the Government's Biosecurity Protection Levy will add further financial burdens on producers already having to bear the high costs associated with production. It is our hope that the Federal Government will take into account the concerns of growers. There are some positives that have come from the Federal Government's latest budget measures around biosecurity in that they will be introducing levies for importers. Also, a Passenger Movement Charge will also be introduced on international travellers whereby there will be an increase on the current charge from \$60 to \$70 per person from 1 July 2024. So, risk creators will also be bearing the cost of strengthening Australia's biosecurity system and the proposed 'container levy' will be further considered.


Avocados Australia believes there is a lack of understanding by the government of the current investment by industry in biosecurity through R&D projects, membership of Plant Health Australia, in-kind contributions by industry bodies to biosecurity management and industry co-investment in eradication programs.

Avocados Australia will be working on this issue and will report back on developments.

For more information about the Federal Government's Biosecurity Protection levy download their fact sheet using the QR code provided or enter this website address in your browser: <https://bit.ly/3NXQdbX>




## The Avocado Academy



### Irrigation & Nutrition Online Course with Lisa Fyffe

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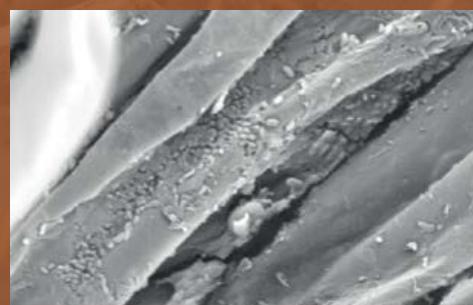
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# MARKETING UPDATE

## Full steam ahead for FY24 marketing plan

*By Victoria Zourkas, Brand Manager, Hort Innovation*

A new marketing program to stimulate increased domestic consumption of avocados and boost export volumes will be rolled out over the next 12 months as part of the industry-endorsed marketing plan for the 2024 financial year.

The FY24 marketing plan, developed by Hort Innovation's marketing team in conjunction with the new Market Development Advisory Panel, is built around three strategic pillars.

Those three pillars are: **1.** Cement the core proposition locally and globally; **2.** Education and food service; and

**3.** Own everyday meal occasions.

Pillar one activities include an evolved creative campaign including development of a suite of new assets, aimed at motivating more 'light buyers' in domestic and export markets to buy and consume Australian avocados.

A comprehensive creative development process will entail qualitative and quantitative research, informing a new campaign to be launched later this year to drive awareness and consideration of Australian avocados.

Pillar one paid media will be delivered as a two-phase campaign. The first phase will utilise the existing Our Green Gold campaign across media channels to drive top-of-mind awareness and consideration of Australian avocados. Phase two will then kick in with a new creative campaign that will include an emphasis on television as well as other mass reach media channels for high impact.

Public relations and social media will also be a focus of pillar one, inspiring light buyers to consume more avocados in everyday meal occasions.



Social media imagery for the new marketing campaign.



A contingency plan for crisis response has been built into pillar one, to allow for establishment of a project reference group to execute a plan should an issue or crisis arise requiring immediate action to support and protect the Australian avocado industry.

The second pillar – education and food service – will involve three elements. They are shopper-focused education, a retailer education program and a food service implementation program.

In terms of education and food service, a suite of instore point-of-sale, retail media and social media communications will be activated to educate avocado buyers, especially light users, on how to select, handle, ripen and store avocados, both in store and at home.

The retailer education program will help retailers by setting best-in-class merchandising and quality standards, providing staff training programs and collecting data to highlight knowledge gaps.

The goal of this program is to improve retail store staff knowledge of storage, handling and display to reduce damaged fruit and increase consumer satisfaction by providing an easy and improved in-store shopping experience.

The foodservice implementation program will be driven by the findings of the AV22005 Avocado Foodservice Research and Strategy program developed with Freshlogic delivery partner. The program goal will be to leverage growth opportunities with the fast-changing food service landscape, and may extend over two-three years, requiring one or more channel-specific programs. The aim is to drive avocado category growth in prioritised food service channels.

The third pillar – own everyday meal occasions – comprises three elements: path to purchase media; inspirational social content to buy and use; and the Australian Avocados website.

Path to purchase media entails driving communications in media channels that are in close proximity to stores, further motivating shoppers to purchase avocados. Research shows that promoting awareness at proximity to the purchase point is critical in positively influencing purchase outcomes.

Social media content will be developed under pillar three to inspire consumers (especially light buyers) to use avocados in everyday meal occasions. Communications will grow consumer confidence and know-how for quick and easy ways to use avocados for breakfast, lunch and dinner.

Inspirational images and recipe videos will be featured, and recipe developers and influencers will be engaged to create enticing new recipes.

Finally, the Australian Avocados website will be refreshed and updated with new campaign content, as well as new recipes and educational resources. Ensuring a positive brand experience for the audience will be the priority.



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# Hitting the mark on the international stage

*By Troy Agosti, International Marketing Manager, Hort Innovation*

## Brett Lee lining up for avos

One of the fastest bowlers in world cricket during his prime, Brett Lee is now going in to bat for Australian avocados.

The popular former cricketer, who has a high profile internationally as well as in Australia, has signed up as an avocado ambassador.

Now an international cricket commentator, businessman, author and philanthropist, Brett will soon be spruiking the attributes of avocados on various media platforms in India, the Middle East and Australia.

He needs no introduction to the Indian target audience – Brett is something of an icon on the subcontinent where, in addition to his cricketing exploits, he starred in a Bollywood movie, wrote and recorded a popular song and has appeared on numerous prime time television talk shows.

As the new avocado ambassador, Brett will be delivering positive messages about Australian avos, extolling their virtues in terms of taste, nutrition and versatility.

Light-hearted in its approach, the campaign will feature Brett in the orchard, in the kitchen and at home relaxing.

His genuine love of avocados will be at the heart of the campaign which will encourage consumption at all meal times.

Video content was filmed in July, and you can expect to see Brett at events, on social media and in myriad marketing materials.

## Activity galore globally

Much is happening on the Grown in Good Nature international marketing front, with activity continuing to abound in the key markets of Singapore, Malaysia and Hong Kong, in particular.

The Singapore campaign (April-July) involved a comprehensive retail, e-commerce and food services program including four retail partners, 20 stores nationwide, 128 push-selling sessions, distribution of thousands of leaflets and goodies, seven weeks of advertising placements and the engagement of numerous influencers.

Pivotal to the campaign in Singapore has been promotion of the benefits of Australian avocados: their fresh and excellent



Former cricketer Brett Lee to act as an avocado ambassador.

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quality; their health properties; and their attributes and versatility.

The unique attributes of both Hass and Shepard varieties are being highlighted.

Food services promotions in Singapore involve collaboration with local restaurants, cafes and juice bars as a means of introducing Australian avocados to their menus and recipes. This activity is also being leveraged by partnering with food bloggers and local media to further raise awareness.

In Malaysia, 'smashing good' has been the central theme to the campaign running from April to the end of July.

The retail program has enlisted 10 retail partners, 153 stores nationwide, 300-plus push-selling sessions, distribution of more than 200 sets of point-of-sale materials, distribution of 5600 goodies and social media activity.

Staff training was conducted under the retail program to educate local personnel about Australian avocados, their provenance, seasonality, the different varieties, the ripening process and selection method.

E-commerce engagement has featured three leading partners and four weeks of advertising, while food services promotions

have involved 50 outlets across seven participating food services to date, as well as three influencers as part of the amplification strategy.

Food and beverage establishments are doing their bit to promote Australian avocados by introducing creative and appealing offerings on their menus, such as avocado milkshakes, avocado pizza, avocado crabmeat benedict and avocado and chicken pesto burgers.

In Hong Kong, the scope of work has also stretched across retail, e-commerce and food services.

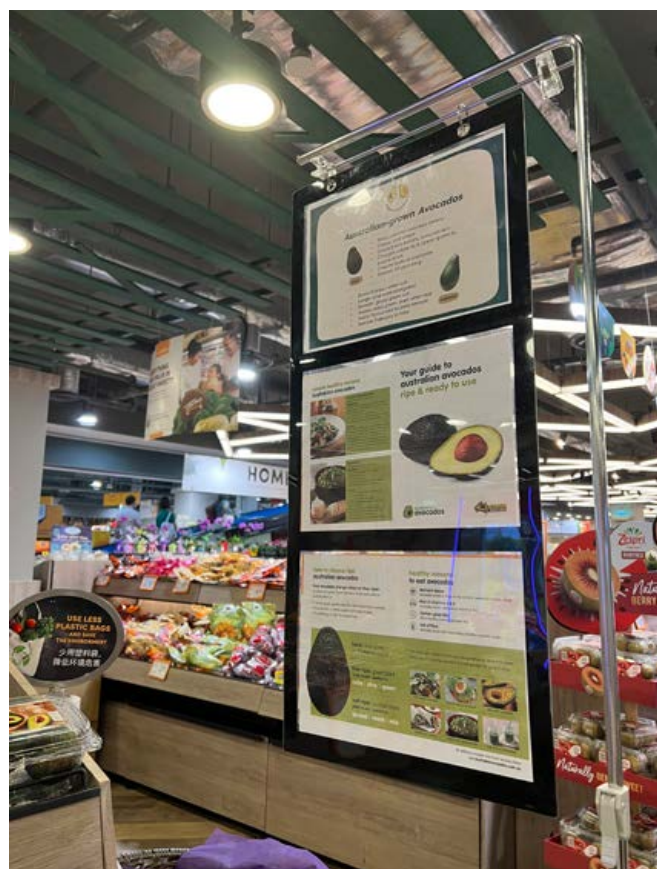
The retail program involves six retail partners, 47 participating stores, 100 push-selling sessions, 300 sets of point-of-sale materials, and distribution of 6500 leaflets and 2000 goodies.

Four online vendors are engaged in the e-commerce program which also includes a four-week advertising campaign.

The food services initiative has attracted five participating food services and six outlets which are promoting 24 menus starring Australian avocados. Six influencers are amplifying the messaging through their popular social platforms.



Comprehensive retail programs are continuing in the key markets of Hong Kong, Singapore and Malaysia. Images, Bastion Amplify.



Information about Australian avocados was on display in-store. Image, Bastion Amplify.





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"Daniel and Nathan would be a great asset to any business – specialising in all matters in finance" – Graham Anderson OAM for services to the Avocado industry



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Daniel Abbey from Scarlett Financial has been servicing Graham Anderson from Anderson Horticulture since 2016. Daniel services Anderson Horticulture, plus all of his family entities financial needs, from payroll, BAS, bookkeeping and tax. Anderson Horticulture is Australia's oldest specialty Avocado nursery (40 years) and orchard (65 years).



# RESEARCH AND DEVELOPMENT

## Avocado R&D investment overview

Funded by your grower levies and contributions from the Australian Government, the industry's research and development activities are extensive.

The industry has long invested in research and development programs to support the sustainable development of the industry.

Hort Innovation manages these funds, investing in projects addressing the industry's strategic priorities. The Australian Government also provides additional funding for avocado R&D through Hort Innovation.

The levy provides essential resources for ongoing avocado R&D and has helped to address various industry issues over many years.

Avocados Australia plays a key role in supporting Hort Innovation with its delivery of the avocado levy-funded R&D program, to ensure it continues to meet the needs of the industry. This includes identifying R&D priorities, providing strategic advice through advisory panels, assisting with project planning and project reviews. With its extensive networks across the industry and R&D community, Avocados Australia assists Hort Innovation to deliver the best possible R&D outcomes from the levy.

Avocados Australia also collaborates with relevant agencies to undertake some R&D activities for industry that align with our capabilities and priorities. This may be as a service provider to Hort Innovation, or through other funding sources such as government grants.


Currently, Australian avocado growers pay a levy of 2.9c/kg for research and development. You can find out more about your levies here:

[avocado.org.au/industry-programs/levy-information/](https://avocado.org.au/industry-programs/levy-information/).

Investments are aimed at addressing levy payer priorities as set out in the new Avocado Strategic Investment Plan 2022-2026. In the following pages, you will find summaries of projects undertaken in the last 12 months, funded through a variety of mechanisms, including funding secured by Hort Innovation through successful applications for Australian Government grants.

<b>AV</b>	Projects funded through avocado levies, with contributions from the Australian Government.
<b>MT</b>	Multi industry projects to which avocado levies may have contributed, along with those of other industries
<b>Hort Frontiers</b>	Hort Innovation's strategic partnership initiative, where projects use funding from a range of co-investors – which sometimes includes levies. These projects are typically focused on big-picture and longer-term issues critical to the future of Australian horticulture as a whole. This includes the Pollination Fund (PH), Advanced Production System Fund (AS), and Asian Markets Fund (AM)
<b>ST/AI</b>	Projects funded by Australian Government grants, or across industry funding

Not all the projects we've included in this report are funded via the Avocado Fund (or Hort Innovation), but all are of interest to the industry.

We have marked projects involving investments from the Hort Innovation Avocado Fund with this icon . This means these projects include funding from the avocado R&D levy.

The current projects are reported on under the strategic investment plan objectives. Please note some projects meet more than one objective.

The Avocado Strategic Investment Plan 2022-2026 addresses the industry's major opportunities and challenges under four key outcomes:

- Demand creation supports the Australian avocado industry to develop existing and future domestic and international markets.
- The Australian avocado industry has improved profitability, efficiency and sustainability through globally competitive production systems, orchard management, varieties, innovative research and development (R&D) and sustainable best management practices (BMPs).
- Improved capability and innovative culture in the Australian avocado industry maximises adoption of best practices and innovation in productivity and demand.

- Improved decision-making in the Australian avocado industry through the use of consumer knowledge and tracking, trade data, production statistics and forecasting, and independent reviews.

You can find full details of the strategic investment plan online: [avocado.org.au/industry-programs/about-industry-programs/](https://avocado.org.au/industry-programs/about-industry-programs/). This is the new plan for 2022 to 2026.

### Acknowledgement

Information for this summary has been drawn from a variety of sources, including the Hort Innovation website ([horticulture.com.au](https://horticulture.com.au) – search via the project code for the latest information), directly from researchers, from various editions of this magazine, and final reports.

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# Objective 1:

Demand creation supports the Australian avocado industry to develop existing and future domestic and international markets.

## Avocado Market Access and Trade Development (AV20004)

<b>Service Provider</b>	Avocados Australia
<b>Project Leader</b>	John Tyas
<b>Start Date</b>	9/02/2021
<b>End Date</b>	2/05/2024
<b>Funding Type</b>	Hort Innovation Avocado Fund



Beginning in 2021, this investment is tasked with bolstering industry readiness, knowledge and technical capabilities around export, and delivering work to improve and maintain international market access. Specifically, the project supports the role of an Export Development Manager who will work to help avocado growers take advantage of existing, new and emerging export opportunities.

At a broad level, project work for the Export Development Manager will involve:

Promoting an export culture within the avocado industry and building capacity through:

- Providing technical input into iTAP and HEICC meetings
- Export-related communications to growers via channels such as Talking Avocados magazine and the Best Practice Resource Export Module
- Developing case studies to promote export-readiness
- Delivering regional export forums in main production regions and presenting at other industry forums and meetings.

Maintain and improving trade development and market access through:

- Providing input into the maintenance and implementation of an Avocado Industry Export Strategy
- Developing market access applications
- Supporting the development of R&D investment related to market access
- Supporting technical market access protocols
- Ensuring growers have access to up-to-date MRL data
- Delivering market access training, registration and auditing
- Conducting a range of country-specific activities to promote export
- Supporting the Taste Australia International Trade Program.

## Avocado Export Strategy 2022-2026 (AV21000)

<b>Service Provider</b>	Avocados Australia
<b>Project Leader</b>	John Tyas
<b>Start Date</b>	15/02/2022
<b>End Date</b>	20/6/2022
<b>Funding Type</b>	Hort Innovation Avocado Fund



### COMPLETED PROJECT

This investment developed a five-year export strategy for the avocado industry to support growth in exports, ensure the ability to maintain and increase global market share, build export capacity and capability, and provide necessary connections and support to relevant stakeholders across the export supply chain.

The project identified, sized and prioritised opportunities for avocado in international markets, and provided the domestic industry with the information needed to guide future activities, including potential investment into export initiatives.

## Australian horticulture international demand creation (ST21007)

<b>Service Provider</b>	Kantar Insights
<b>Project Leader</b>	Patrick Fry
<b>Start Date</b>	30/05/2022
<b>End Date</b>	17/11/2023
<b>Funding Type</b>	Funded through the Australian Government's Agricultural Trade and Market Access Cooperation program along with funds from multiple industry funds including the Hort Innovation Avocado Fund.



This investment is delivering insights into what the international consumer wants across 13 priority markets for the Australian horticulture sector. A comprehensive understanding of what drives consumer demand and decision-making is required to guide export strategies and improve Australia's success in selling to international partners.

The research team are:

1. Identifying the most profitable consumer trends and growth opportunities in priority international markets where Australian produce has the right to play and commercially sizing and prioritising them across markets.
2. Identifying target consumers and understanding their needs in occasion and usage and purchase behaviour patterns to better address each market with Australian produce.
3. Optimising product positioning to drive profitable growth against prioritised industries, allowing the deployment of trade marketing resources in the most effective and coordinated way.

The 13 priority markets included in this project are Japan, Singapore, Hong Kong, Korea, Malaysia, Taiwan, Indonesia, UAE, Vietnam, USA, Qatar, UK and India.

### Consumer demand spaces for horticulture (MT21003)

<b>Service Provider</b>	Kantar Insights
<b>Project Leader</b>	Cindy Kirkby
<b>Start Date</b>	18/11/2021
<b>End Date</b>	15/7/2022
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



#### COMPLETED PROJECT

This investment identified and prioritised opportunities to engage consumers and build demand across the domestic market for fruits, nuts and vegetables. It delivered a framework that can be used by industry to inform their decision-making around product development and marketing campaigns. The project team compared the current 'state of play' against identified opportunities and prioritized based on potential impact. The Final Report can be accessed on the Best Practice Resource.

The framework will be informed by research into:

- Current market landscape and competitive dynamics
- Consumer segmentation
- Consumer occasion-based needs
- 'White space' opportunities where consumer needs are currently unmet

### Avocado market research (AV22000)

<b>Service Provider</b>	Euromonitor International
<b>Project Leader</b>	Juan Gonzalez
<b>Start Date</b>	6/9/22
<b>End Date</b>	29/12/2022
<b>Funding Type</b>	Hort Innovation Avocado Fund



#### COMPLETED PROJECT

This short project delivered an easy-to-digest resource for avocado growers and exporters looking to develop their export capability and grow their exports, with a specific focus on identified priority markets such as Thailand and India. A copy of the final report is available on the Best Practice Resource.

The research team:

- Produced industry trade performance data and market intelligence reports for India and Thailand.
- Outlined specific factors for Australia to succeed in India and Thailand based on a detailed understanding of market dynamics, consumer purchasing patterns, and a competitor analysis.

- Informed market access considerations involving other trade and non-trade barriers.

### Avocado food service research and strategy (AV22005)

<b>Service Provider</b>	Freshlogic
<b>Project Leader</b>	Martin Kneebone
<b>Start Date</b>	16/03/2023
<b>End Date</b>	28/6/23
<b>Funding Type</b>	Hort Innovation Avocado Fund



This project is developing a five-year strategy that will provide avocado industry with the insights and direction needed to grow the category's volume in the domestic food service channel. The strategy will include industry targets for avocado category volume growth in the food service channel and identified opportunities for the industry to act upon.

The five-year strategy will be translated into simplified fact sheets to ensure that stakeholders at all levels of the supply chain and different states of commercial sophistication are able to understand and act upon the identified opportunities. An online webinar will also be run at the conclusion of the project to introduce the avocado industry to the Strategy and provide the opportunity for a Q&A session.

### Foodservice foundational market insights (MT21011)

<b>Service Provider</b>	KPMG
<b>Project Leader</b>	Georgie Aley
<b>Start Date</b>	9/05/2022
<b>End Date</b>	7/08/2022
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



#### COMPLETED PROJECT

This investment worked to equip the avocado, melon, mushroom, onion, papaya, sweet potato and vegetable industries with market insights into the foodservice sector. These insights were used to create targeted strategies for these industries to engage with food service providers more effectively and direct their efforts to expand in the most viable, profitable market segments.

The research team based the targeted strategies on extensive market intelligence research supplemented with industry consultations to deliver insights on industry landscape, price points, demand drivers, competitive insights, including seasonality, and in-depth analysis of the trade performance of the market.

The key output of this project was a detailed report that can guide industry on how to engage with the foodservice sector, capitalise on identified opportunities and ultimately grow in prioritised segments of commercial and industrial sectors.



The report also includes macro-level market intelligence on the foodservice sector, sub-segment prioritisation within commercial and institutional segments, customer value propositions and a list of essential industry stakeholders for engagement.

### Educating health professionals on the nutrition and health benefits of avocados (AV20003)

<b>Service Provider</b>	Bite Communications
<b>Project Leader</b>	Andrea Brydges
<b>Start Date</b>	22/06/2021
<b>End Date</b>	2/01/2024
<b>Funding Type</b>	Hort Innovation Avocado Fund



This investment is delivering evidence-based information about Australian avocados to health and food service professionals in Australia. By improving the awareness, knowledge and attitude of health professionals to the nutrition and health benefits of avocado, they will be encouraged to recommend avocado to their clients, or include avocado in their menus, and ultimately help to drive Australian avocado purchase and consumption.

The project team is undertaking a range of activities, including:

Establishing a digital hub that houses nutritional resources on avocados, including recipes, meal plans and local and international research on health benefits.

Conducting a systematic literature review on avocados and health outcomes. This research will underpin all other project activities.

Communicating with health professionals via a range of channels such as roundtable discussions, media releases, social media toolkits, a quarterly e-newsletter and participating in conferences. The project team will also work collaboratively with relevant professional associations and health influencers.

Holding farm tours to connect health professionals to the source and to showcase growing regions, varieties and the breadth of the avocado industry.

### Phenomenom resources (MT21018)

<b>Service Provider</b>	Edible Adventure Productions
<b>Project Leader</b>	Alice Zaslavsky
<b>Start Date</b>	29/6/22
<b>End Date</b>	31/10/2023
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



This investment is developing Phenomenom resources for the avocado, citrus, melon and rubus industries, including

a dedicated Nomcast for each commodity and supporting PDF resources. The materials will educate children about the nutritional benefits of horticultural produce, with the intention of improving their attitudes towards consumption.

Phenomenom is an existing education project consisting of webisodes and podcasts, supported by curriculum-aligned resources available free to teachers of years 2-10 to use in class. The primary aim is to improve attitudes to fresh foods among children, appealing to them that eating fresh Aussie produce can be smart, fun, and exciting.

The resource embeds vegetable, fruit, nut and seed education across Australian subject areas of science and technology, English, the arts, health and physical education, maths and humanities.

Teachers can access the resources for free on ABC Education or on the dedicated website [www.phenomenom.com.au](http://www.phenomenom.com.au).

### Avocado retail education 2023 (AV22006)

<b>Service Provider</b>	Direct 2 C
<b>Project Leader</b>	Hort Innovation are the main contact
<b>Start Date</b>	9/3/2023
<b>End Date</b>	31/7/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund



This short project addresses retail gaps in knowledge of avocado varieties and quality management, such as stock management, storage practices, product displays and shelf management. These efforts will increase demand for avocados by increasing consumer satisfaction due to improved quality.

A field team will visit a selection of Coles and Woolworth stores multiple times to conduct surveys on retail staff, undertake audits of avocado fixtures and storage, and train retail staff on best practices.

Over six months, the project will:

- Increase retail staff and consumer knowledge about different varieties
- Reduce bruising and damage in avocados when merchandised
- Reduce squeezing of avocados by consumers in-store to determine ripeness
- Increase consumer knowledge of how to ripen avocados at home
- Display avocados at varying stages of ripeness (i.e. eat now, eat later)
- Increasing retail staff and consumer knowledge about different varieties

## Objective 2:

The Australian avocado industry has increased marketable yield per hectare through globally competitive production systems, such as orchard management, varieties, innovative R&D and sustainable best management practices (BMPs).

### Monitoring avocado supply chain quality (AV22011)

Service Provider	Avocados Australia
Project Leader	John Tyas
Start Date	28/4/2023
End Date	14/10/2026
Funding Type	Hort Innovation Avocado Fund



In this project fruit quality will be monitored in major and independent retail stores in Sydney, Melbourne, Brisbane and Perth and maturity monitored at the wholesale market.

Supply chain tracebacks will be undertaken with packhouses where more than two of their samples in a season fall below the industry target of 90% acceptable fruit, helping businesses identify opportunities for improvement and corrective action in real time throughout the season.

Supply chain quality monitoring will support active extension with high priority packers. Samples will be collected from wholesalers and ripening distribution centres, and assessed following a normal commercial ripening program, as well as following a 14-day storage challenge. A rapid library tray assessment method will also be investigated, to test fruit robustness and deliver quality insights in a shorter timeframe.

The project will be coordinated by Avocados Australia, with consistent assessment methodologies, and communication across all aspects of the project. Deidentified results will be well communicated to industry through regional presentations, webinars, Talking Avocados magazine articles, and the Best Practice Resource.

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## Growing robust avocados (AV21005)

<b>Service Provider</b>	Queensland Department of Agriculture and Fisheries
<b>Project Leader</b>	Daryl Joyce
<b>Start Date</b>	20/06/2022
<b>End Date</b>	8/01/2025
<b>Funding Type</b>	Hort Innovation Avocado Fund 

This project is increasing the quality of Australian avocado production by supporting the industry to grow robust produce through targeting the development of pre-harvest management strategies, focusing on soil moisture, soil nutrition, environment, and crop management.

The project will:

- Improve knowledge of how pre-harvest management factors impact avocado robustness.
- Enable prototype decision support tools to be made available.
- Enable pre-harvest test to predict fruit robustness to be made available.
- Provide evidence the project activities and outputs have impacted grower behaviour and acted as a useful resource.

## Implementing best practice of avocado fruit management and handling practices from farm to ripening (AV18000)


<b>Service Provider</b>	Queensland Department of Agriculture and Fisheries
<b>Project Leader</b>	Noel Ainsworth
<b>Start Date</b>	7/02/2019
<b>End Date</b>	20/3/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund 

### COMPLETED PROJECT

This project helped the avocado industry to achieve further improvements in fruit quality, by facilitating the adoption of better practices – from what happens on the farm through to dispatch from the ripener. The final report is in the Best Practice Resource.

The project team monitored the current level of fruit quality and related best practice adoption in the industry over the 2019-2023 period and where improvements could be made, with a focus on those practices that are known to impact on fruit quality, as revealed by previous levy-funded R&D. These insights were used to deliver knowledge and technical support to growers, packhouse operators, transporters and ripeners. This occurred through workshops and training activities, as well as the development of two supply chain case studies. The project team worked with forty chains each year to monitor current performance, implement improvements, and measure the benefits.

## Monitoring avocado quality in retail (AV19003)

<b>Service Provider</b>	Applied Horticultural Research
<b>Project Leader</b>	Adam Goldwater
<b>Start Date</b>	20/12/2019
<b>End Date</b>	20/03/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund 


### COMPLETED PROJECT

Beginning in 2019, this project monitored avocado fruit quality in retail stores across the country and provided detailed, timely feedback to specific packhouses and the industry as a whole. Fruit quality has been identified as a challenge for the avocado industry, with surveys of fruit quality in recent years finding that up to a quarter of avocados in stores have significant levels of bruising, internal rot or other disorders.

The project team conducted regular assessments at supermarkets, independent and specialty retailers in Sydney, Melbourne, Brisbane, Perth and Adelaide over three years – providing some 600 separate quality assessments each year. Information was recorded on factors such as quality of store displays, fruit age, pricing and potentially the difference in fruit quality between displays in the back and front of stores.

The project passed quality information on specific batches of fruit to packhouses to help businesses identify improvement opportunities and help address any inefficiencies or issues in their operations. De-identified data from the sampling was also analysed to monitor industry performance on the whole. The final report is on the Best Practice Resource.

## Improving preparedness of the Australian horticultural sector to the threat potentially posed by *Xylella fastidiosa* (a severe biosecurity risk) (MT17006)

<b>Service Provider</b>	Victorian Department of Jobs, Precincts and Regions
<b>Project Leader</b>	Rachel Mann
<b>Start Date</b>	14/05/2019
<b>End Date</b>	31/5/2023
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund 

### COMPLETED PROJECT

This multi-industry investment helped the industry review and allow Australia to adopt world's best practice methods for detecting and identifying strains of the *Xylella fastidiosa* bacteria, should it come to our shores. As well as developing state-of-the-art diagnostic tools, technologies and protocols to screen plant material entering the country it also supported active surveillance programs, it provided associated training to technical staff in diagnostic laboratories.

The project's work ultimately allowed for quick and effective detection of what is considered to be the number one plant biosecurity threat to Australia and New Zealand, to facilitate a swift and sure response.

### Avocado sunblotch viroid survey (AV18007)

<b>Service Provider</b>	The University of Queensland
<b>Project Leader</b>	Andrew Geering
<b>Start Date</b>	18/06/2019
<b>End Date</b>	19/7/2022
<b>Funding Type</b>	Hort Innovation Avocado Fund



#### COMPLETED PROJECT

This investment surveyed for avocado sunblotch viroid in growing regions across Australia, to provide evidence to support declarations of regional or national freedom from the pathogen. It developed a sampling protocol for ASBVd which will underpin proposed changes to the market access protocol for Australian avocados to New Zealand. A final report was completed in July 2022 and is available in the Best Practice Resource.

### Avocado industry biosecurity strategy 2022-2026 (AV21002)

<b>Service Provider</b>	Avocados Australia
<b>Project Leader</b>	John Tyas
<b>Start Date</b>	1/7/2022
<b>End Date</b>	31/5/2027
<b>Funding Type</b>	Hort Innovation Avocado Fund



This project aims to:

- Improve avocado industry biosecurity resilience through the development and delivery of foundational exotic pest preparedness documents supported by exotic pest incursion and response exercises.
- Better understand the risk posed to the avocado industry from exotic pests by identifying current gaps in pest risk assessments, pathway analyses and diagnostic capability.
- Increase the uptake of appropriate on-farm biosecurity practices by identifying and addressing barriers to adoption.

To date, the industry has been fortunate that it has not been severely impacted by new pest or disease incursions. However, the current Avocado Biosecurity Plan has identified several gaps regarding the industry's preparedness and prevention strategies, and the industry is fortunate to be able to address these prior to a major incident (in 'peace time').

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This project takes a multi-agency collaborative approach specifically developed to address these identified gaps, drawing on the scientific and broader biosecurity management expertise available from the six agencies involved.

The intended outcome of this five-year project is to increase the avocado industry biosecurity resilience by implementing industry preparedness and prevention strategies.

### Review of national biosecurity plans (MT17003)

<b>Service Provider</b>	Plant Health Australia
<b>Project Leader</b>	Rodney Turner
<b>Start Date</b>	10/11/2017
<b>End Date</b>	10/11/2022
<b>Funding Type</b>	Multiple including Hort Innovation Avocado Fund



#### COMPLETED PROJECT

This project was for and funded by both the avocado and mango industries. It was responsible for reviewing and updating the industries' biosecurity plans - top-level documents that identify high-priority endemic and exotic pests, diseases and weeds, along with the risk mitigation activities required to reduce their biosecurity threat, and surveillance and diagnostic activities. They provide a strategic framework for industry and government to work together to improve preparedness for and response to these potential threats.

### Avocado industry minor use program (AV16002)

<b>Service Provider</b>	Hort Innovation
<b>Project Leader</b>	Hort Innovation
<b>Start Date</b>	On-going
<b>End Date</b>	On-going
<b>Funding Type</b>	Hort Innovation Avocado Fund



Through this project, levy funds and Australian Government contributions are used to submit renewals and applications for new minor use permits for the avocado industry, as required. These submissions are prepared and submitted to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

### Avocado pest and disease technical workshop (AV22003)

<b>Service Provider</b>	RMCG
<b>Project Leader</b>	Kristen Stirling
<b>Start Date</b>	27/03/2023
<b>End Date</b>	12/5/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund



#### COMPLETED PROJECT

This investment delivered a technical workshop to identify and prioritise key pest and disease challenges for the avocado industry. The workshop built a deeper understanding of the industry's ongoing pest and disease concerns to inform future efforts in this area.

The project team reviewed current and past investments in pest and disease R&D for the avocado industry and provided a background paper to inform forum participants. The forum also involved key stakeholders from the avocado supply chain, including growers, researchers, agronomists, and industry representatives.

The project team provided a post-forum report summarising the findings, providing direction for future R&D investment.

### Regulatory Support & Response Co-ordination (MT20007)

<b>Service Provider</b>	AKC Consulting Pty Ltd
<b>Project Leader</b>	Best contact is the Hort Innovation Communications Team
<b>Start Date</b>	30/06/2021
<b>End Date</b>	1/07/2024
<b>Funding Type</b>	Multiple including Hort Innovation Avocado Fund



This project provides the Australian horticulture industry with key information regarding domestic and international pesticide regulation. A component of this is the production of Ag Chemical Updates, which provide information on any developments in regulatory oversight of relevant chemicals. They are an opportunity for industry to consider and develop responses to issues arising from actions proposed that may impact on grower ability to access and use needed pesticides.

To assist strategy planning with respect to future pest management options, the project also develops regulatory risk assessments. These highlight potential threats to agrichemicals currently approved for the management of pests and diseases in various crops, as well as current initiatives aimed at addressing identified pest management deficiencies.

### Improving fruit and banana spotting bug control (MT21017)

<b>Service Provider</b>	Department of Agriculture and Fisheries Queensland
<b>Project Leader</b>	Ian Newton
<b>Start Date</b>	19/8/22
<b>End Date</b>	29/3/2027
<b>Funding Type</b>	Multiple including Hort Innovation Avocado Fund



This project is developing tools (such as traps and lures) to help avocado and macadamia growers manage fruit and banana spotting bugs. By providing growers with the

information they need to target their pesticide applications, produce quality will improve and waste reduced.

The research team will develop an improved banana spotting bug trap with greater longevity and efficacy and a pheromone lure to attract and trap fruit spotting bugs.

### Generation of data for pesticide permit applications in horticulture (ST22001, ST22003 and ST22004)

<b>Service Provider</b>	Agreco, Eurofins Agrosience Services and Kalyx
<b>Project Leader</b>	Best contact is the Hort Innovation Communications Team
<b>Start Date</b>	19/10/22
<b>End Date</b>	1/3/2026
<b>Funding Type</b>	Multiple including Hort Innovation Avocado Fund



The generation of pesticide residue, efficacy and crop safety data is required to support label registration and minor use permit applications and renewals made to the Australian Pesticides and Veterinary Medicines Authority (APVMA).

These multi-industry projects are generating the data needed to support a range of existing minor use permits across various horticulture crops to ensure growers have continued access to safe and effective chemicals for managing pests, weeds, and diseases.

Specific industries that will benefit from ST22001, ST22003 and ST22004's data generation work include avocado, citrus, custard apple, fresh potato, lychee, macadamia, mango, olive, onion, papaya, passionfruit, persimmon, pineapple, raspberry and blackberry, strawberry, sweet potato, and vegetable.

### Investigation into citrus blossom bugs in avocados (AV19000)

<b>Service Provider</b>	Queensland Department of Agriculture and Fisheries
<b>Project Leader</b>	Rod Edmonds
<b>Start Date</b>	1/10/2019
<b>End Date</b>	31/07/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund



Beginning in 2019, this investment is developing an understanding of the biology and ecology of citrus blossom bug and its impact on the Australian avocado industry. Ultimately, this project will produce a guide for growers to help them protect their crops from the insect, monitor for the bug and manage any infestations.

Citrus blossom bug is currently thought to reduce floral production on citrus trees in coastal districts by killing the small flowers shoots – but an increasing number of avocado growers are also reporting poor crops due to this pest. At

present very little is known about the lifecycle of the citrus blossom bug, how it is distributed and whether it has any natural enemies. This project will deliver the knowledge on this pest that is needed to ensure that effective management strategies can be developed.

Project activities include, but are not limited to:

- Conducting a comprehensive literature review of citrus blossom bugs and related pests in avocado and similar industries, including current management methods used for similar pests
- Field studies to determine the taxonomy and pest status of the pest, such as whether citrus blossom bug damage affects flower set, fruit set and yield
- Studying the biology and ecology of the pest, including identifying key natural enemies, lifecycle stages, and potential host range
- Compiling data on the efficacy of current management methods and identifying possible new strategies.

### Management of six-spotted mite in WA avocado orchards – phase 2 (AV19002)

<b>Service Provider</b>	Department of Primary Industries and Regional Development
<b>Project Leader</b>	Alison Mathews
<b>Start Date</b>	21/11/2019
<b>End Date</b>	31/08/2022
<b>Funding Type</b>	Hort Innovation Avocado Fund



#### COMPLETED PROJECT

This investment delivered effective options for the integrated pest management (IPM) of six-spotted mite in avocado orchards. Beginning in 2019, it followed previous levy-funded project Pest status and management of six-spotted mite (*Eotetranychus sexmaculatus*) in WA avocado orchards (AV15012), which sought to assist growers in monitoring mite populations and implementing appropriate management techniques, as well as investigating the role that predatory mites could play during production. The project team produced the Monitoring for six-spotted mite in avocado orchards guide and laid the groundwork for this phase two investment to further industry understanding of how to manage the pest. The final report is available in the Best Practice Resource.

A comprehensive IPM plan for growers was developed – which aimed to extend via demonstration sites, online materials and articles in the levy-funded Talking Avocados – the research team investigated:

- The use of mass-reared predatory mites as a form of six-spotted mite management
- The role of naturally occurring predatory mites
- The relationship between tree health, mite numbers and leaf fall



- Chemical application recommendations based on resistance management, impact of chemicals on beneficial species, and the impact that timing and/or application methods have on the level of pest mite control.

### Environmental DNA technologies for rapid detection and identification of avocado priority pests (AV21003)

<b>Service Provider</b>	Enviro DNA
<b>Project Leader</b>	Andrew Weeks
<b>Start Date</b>	28/06/2022
<b>End Date</b>	14/5/2025
<b>Funding Type</b>	Hort Innovation Avocado Fund



This investment is developing environmental DNA (eDNA) technologies for the rapid detection and identification of priority pests for the avocado industry. Innovation in field and lab-based testing techniques will improve the ability of the avocado industry, and those undertaking surveillance activities, to quickly and accurately identify pest incursion threats in a cost-effective manner.

Short term (<3 years) outcomes include:

- eDNA capabilities for diagnostics and surveillance of priority avocado pests and pathogens, in addition to emerging biosecurity species of interest relevant for Australian avocado biosecurity have been developed.
- eDNA sampling methods that increase sensitivity and cost-efficiency of surveillance activities, particularly under an outbreak situation, have been developed and tested in the field.
- A subset of biosecurity officers have working knowledge of eDNA sampling protocols and in-field assay deployment, and these officers have been given the tools to train others within their department/organisation.
- There is increased industry awareness of avocado biosecurity threats, and the role of eDNA technologies in responding to these threats.

Medium to long term (>3 years) outcomes from this project include:

- The development of eDNA capabilities for Australia's agricultural industries, specifically to the biosecurity area.
- Frameworks for improved pest surveillance activities that integrate eDNA methods with species occupancy detection modelling.
- Integration of eDNA testing into designs for surveillance of exotic plant pests.
- An improved understanding of how eDNA technologies could be used in Australian agriculture to decrease risk and improve profitability.
- Increased capacity building in biosecurity preparedness through collaborations with high calibre researchers.

### Study to review automation opportunities within the avocado production system (AV22002)

<b>Service Provider</b>	Central Queensland University
<b>Project Leader</b>	Phil Brown
<b>Start Date</b>	2/08/2023
<b>End Date</b>	8/1/2024
<b>Funding Type</b>	Hort Innovation Avocado Fund



This project is reviewing current avocado grower management practices to identify areas of greatest opportunity for efficiency and productivity improvements, and exploring available automation technologies that could be implemented.

The project will determine through surveys and in-field time and motion data collection the areas and practices within the production system (primarily in-field through to harvest) where there is high labour dependency and costs. Data collection will cover the range of production scales, locations and management systems to deliver insights applicable to the broad Australian industry.

Through this project, avocado growers will have access to valuable insights into where there is potential for efficiency gains and how they could be achieved through improved processes or technology adoption.

### Managing flies for crop pollination (PH16002)

<b>Service Provider</b>	Western Australia Agriculture Authority (DPIRD) is the lead partner
<b>Project Leader</b>	David Cook
<b>Start Date</b>	1/09/2018
<b>End Date</b>	15/9/2023
<b>Funding Type</b>	Hort Frontiers Pollination Fund

This project is part of the Hort Frontiers Pollination Fund and involves levy from the avocado industry. It is looking into the potential of using flies as alternative crop pollinators, including considering the effectiveness of specific fly species in pollinating avocado as well as berry (blueberry, raspberry and strawberry), hybrid carrot seed and brassica seed crops.

### Understanding the mode of action of phosphite in avocado for enhanced management of Phytophthora root rot (AV19005)

<b>Service Provider</b>	University of Queensland
<b>Project Leader</b>	Elizabeth Dann
<b>Start Date</b>	30/06/2020
<b>End Date</b>	27/10/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund



This project is improving industry understanding of how the fungicide phosphite is metabolised by avocado trees infected with Phytophthora root rot, so that applications of phosphite can become more targeted and effective, resulting in healthier and more productive orchards.

Through this research, the project team is answering the following questions:

How does phosphite activate avocado defences to inhibit Phytophthora root rot?

How does phosphite move around within the avocado tree?

What is the optimal timing of phosphite applications to achieve maximum efficacy as a crop protectant with acceptable fruit residues?

What are the optimal application regimens specific to different growing regions?

This project will complement existing research into Phytophthora root rot conducted by levy-funded project Improving avocado orchard productivity through disease management (AV16007).

## Improving avocado orchard productivity through disease management (UQ) (AV16007)

<b>Service Provider</b>	University of Queensland
<b>Project Leader</b>	Elizabeth Dann
<b>Start Date</b>	6/11/2017
<b>End Date</b>	5/05/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund



### COMPLETED PROJECT

This investment identified strategies to minimise the effects of key diseases in avocado orchards and in fruit as it progressed through the supply chain – helping the avocado industry increase orchard productivity and fruit quality. The project had a focus on diseases and issues including phytophthora root rot; phellinus brown root rot; Nectriaceous black root rot; stem end rot; and branch and graft dieback.

The dedicated Phytophthora component involved the work of a Murdoch University team, whose work included a closer look at phosphite treatments, including the issue of residues, potential for Phytophthora pathogens to develop tolerance, alternatives and more.

The project's work linked in with other Hort Innovation Avocado Fund investments including Avocado industry biosecurity capacity building (AV16010).



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### Maximising yield and reducing seasonal variation (AV16005)

<b>Service Provider</b>	CSIRO
<b>Project Leader</b>	Harley Smith
<b>Start Date</b>	30/05/2017
<b>End Date</b>	31/5/23
<b>Funding Type</b>	Hort Innovation Avocado Fund
<b>COMPLETED PROJECT</b>	



This project developed knowledge and tools needed to manipulate and maximise avocado tree yields, to help improve production and profitability in the industry. Specifically, it looked at resource competition between shoots and fruits, potentially opening the door for new methods of reducing fruit drop. It is also looked at how high, sustainable production can be achieved from year to year, through progressing the understanding of high-yielding tree development.

### National Bee Pest Surveillance Program: Transition Program (MT21008)

<b>Service Provider</b>	Plant Health Australia Limited
<b>Project Leader</b>	Sharyn Taylor
<b>Start Date</b>	3/12/2021
<b>End Date</b>	15/12/2024
<b>Funding Type</b>	Multiple including Hort Innovation Avocado Fund



This investment is delivering a national coordinated bee-pest surveillance program to help safeguard honey-bee and pollinator-dependent industries in Australia. The National Bee Surveillance Program was established in 2012, supported by the previous National Bee Pest Surveillance Program (MT12011) and Enhanced National Bee Pest Surveillance Program (MT16005).

The program will conduct surveillance for 13 pests that impact honeybees (mites and beetles), and pest bees that could either carry hitchhiking parasites or could themselves cause detrimental impacts to honeybees. The program activities include upgrading sentinel hive arrays, strengthening relationships with surveillance operators and more. The surveillance is designed to enable the early detection of high-priority pest incursions that can impact on honey bees, providing the best opportunity for successful pest eradication.

Several levy industries are contributors to the work, and the program is part of the Hort Frontiers Pollination Fund. Hort Frontiers is Hort Innovation's strategic partnership initiative, with more information available at [www.hortfrontiers.com.au](http://www.hortfrontiers.com.au).

### eDNA analysis of plant-pollinator relationships to improve Hass avocado production in south-west Western Australia (PH19007)

<b>Service Provider</b>	Curtin University of Technology
<b>Project Leader</b>	Paul Nevill
<b>Start Date</b>	26/11/2020
<b>End Date</b>	30/11/2023
<b>Funding Type</b>	Multiple including Hort Innovation Avocado Fund



Inadequate pollination has been identified as one of the main contributors impacting fruit production in avocados, an issue experienced in south-west Western Australia where avocados typically produce large numbers of flowers but consistently yield low crops.

This project is using a method known as eDNA metabarcoding to determine which insect species and native plants are supporting successful avocado pollination. This approach uses small regions of DNA which have low intraspecific variation (that is, variation within a species) but high interspecific variation (that is, variation between different species), to allow for identification at the species level. By classifying pollinators and the plants upon which they rely, this research has the potential to identify and protect relevant co-plant species which support these economically important orchards.

This work will predominantly be undertaken by a PhD student at Curtin University and will work closely with the Hort Frontiers Pollination Fund project Managing flies for crop pollination (PH16002). The addition of eDNA methods to that project will provide greater insight into the important pollinators of avocados in south-west Western Australia

## Objective 3:

### Improved capability to enable adoption across the supply chain of best practices and innovation to support an innovative culture.

### Avocado industry development and extension (AV17005)

<b>Service Provider</b>	Queensland Department of Agriculture and Fisheries
<b>Project Leader</b>	Simon Newett
<b>Start Date</b>	22/05/2019
<b>End Date</b>	15/05/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund



**COMPLETED PROJECT**

This project was delivered in partnership with Avocados Australia Limited and was responsible for delivering a range of extension events and resources to help the avocado industry access, understand and implement best practice. This includes information from current and previous Hort Innovation Avocado Fund R&D investments. The ultimate goal was to help improve orchard productivity, fruit quality and overall profitability. The final report is available on the Best Practice Resource.

### Avocado industry capacity building – Western Australia (AV17006)

<b>Service Provider</b>	Department of Primary Industries and Regional Development, WA
<b>Project Leader</b>	Rohan Prince
<b>Start Date</b>	30/06/2018
<b>End Date</b>	4/10/2024
<b>Funding Type</b>	Hort Innovation Avocado Fund



This investment supports the role and activities of a Western Australia Avocado Research Officer, to help develop the capacity and productivity of the state's avocado industry. The officer delivers best practice management information to growers and other industry participants in Western Australia, supports national development activities within the region (such as forums and workshops), and helps address identified orchard productivity issues in the state through research activities.

### Avocado industry biosecurity capacity and capability building: phase II (AV21003)

<b>Service Provider</b>	The University of Queensland
<b>Project Leader</b>	Andrew Geering
<b>Start Date</b>	28/06/2022
<b>End Date</b>	30/9/2025
<b>Funding Type</b>	Hort Innovation Avocado Fund



This investment is bolstering biosecurity for the Australian avocado industry by monitoring and delivering new diagnostic protocols for key threats. By limiting the introduction or spread of new pests and pathogens, this project is contributing to creating a sustainable avocado industry which can also use its enhanced knowledge of the endemic pests and pathogens to promote trade access overseas.

The key activities of this project are:

- 1) Improving and rigorously validating existing diagnostic protocols to international standards for exotic pests and pathogens for the Australian avocado industry and extending this diagnostic capacity to a secondary centre in Perth.

- 2) Developing and validating diagnostic protocols for two high priority exotic pests, the Persea mite *Oligonychus perseae* (Acari: Tetranychidae) and the avocado seed moth *Stenomoma catenifer* (Lepidoptera: Depressariidae).
- 3) Validating and updating the national diagnostic protocol for laurel wilt.
- 4) Identifying and monitoring emerging biosecurity threats, communicating knowledge through industry publications and establishing linkages with related biosecurity projects.
- 5) Conducting surveys and identifying samples from growers and other industry stakeholders to scientifically underpin the pest free status of relevant pests and pathogens.

### Nuffield scholarships (MT22003)

<b>Service Provider</b>	Nuffield Australia
<b>Project Leader</b>	Nicola Raymond
<b>Start Date</b>	9/2/2023
<b>End Date</b>	30/11/2025
<b>Funding Type</b>	Multiple, including Hort Innovation Avocado Fund



This project supports 2024 Nuffield Australia scholarships for the apple and pear, avocado, onion and rubus industries. Nuffield Scholarships award primary producers with a life-changing scholarship to travel overseas and study an agricultural topic of choice to increase their knowledge, management, and leadership skills. It is a 14-week study program consisting of both group and individual travel. Completing a Nuffield Scholarship provides participants with a thirst for continued learning and equips them to be leaders in their industry and community.

## Objective 4:

### Improved decision-making in the Australian avocado industry through the use of business insights that support the industry to respond to market and industry trends.

### Avocado industry and market data capture and analysis (AV20000)

<b>Service Provider</b>	Avocados Australia
<b>Project Leader</b>	John Tyas
<b>Start Date</b>	7/09/2020
<b>End Date</b>	31/07/2023
<b>Funding Type</b>	Hort Innovation Avocado Fund





This investment is delivering high quality industry data to the avocado supply chain, to support businesses in their decision making. Key activities this project is responsible for include:

Maintenance of Infocado, the industry's system for monitoring volumes of avocados dispatched and forecast to be supplied, with weekly and quarterly reporting;

Maintenance of OrchardInfo, which is used to monitor industry productive capacity and inform medium-long term production outlooks, with reports distributed to contributors;

Other relevant local data collection, analysis and reporting for the industry, including to identify and understand trends, supply, demand and price relationships – publications include the yearly 'Facts at a glance' fact sheet and Global trade data analysis.

### Advancing the delivery of national mapping applications and tools (AV21006)

<b>Service Provider</b>	University of New England
<b>Project Leader</b>	Andrew Robson
<b>Start Date</b>	29/06/2022
<b>End Date</b>	30/5/2024
<b>Funding Type</b>	Hort Innovation Avocado Fund



This project will further position Australia's avocado

industry as world leaders in the sector, by delivering growers commercial tools for improved yield forecasting and mapping from the orchard block to the national scale.

The project provides further improvements and investigations to support the delivery and long-term relevancy of AV18002, delivered by the University of New England (UNE). This project saw the implementation of a precision agriculture solution in Australian avocado production systems and the creation of a multi-scale monitoring tool for managing Australian avocado tree crops.

AV120006 seeks to contribute to this body of work by achieving the following objectives:

- Continue to update the web mapping applications with improved accuracy and usefulness to the avocado industry.
- Yield forecasting model to support a benchmarking project, crop forecasting, the investigation into crop developments relationship with the climate and inform the remote sensing climate-based yield prediction model.
- Use the CropCount mobile application to improve productivity by expanding testing and structured feedback processes, improving decision-making and orchard management.
- Use the CropCount mobile application to support avocado growers who have new plantings or no historic data.

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## Avocado industry benchmarking (AV22004)

<b>Service Provider</b>	RMCG
<b>Project Leader</b>	Clinton Muller
<b>Start Date</b>	20/02/2023
<b>End Date</b>	17/12/2027
<b>Funding Type</b>	Hort Innovation Avocado Fund



This project is equipping avocado growers with benchmarking data to inform their decision-making and to provide financial and production insights to the industry as a whole.

The three key aims of the project are to:

- Develop and adapt a benchmarking tool for Australian avocado growers.
- Establish key benchmark performance metrics and drivers of best practice performance.
- Enable and foster an inquisitive business culture of continuous improvement.

The results will inform decisions about investment in the industry, as well as operation decisions based on business profits (considering costs and income) including assessment of different parts of the business, for example different varieties, plantation location, markets etc.

## Horticulture Trade Data (MT19005)

<b>Service Provider</b>	IHS Global
<b>Project Leader</b>	Hort Innovation Communications Team
<b>Start Date</b>	29/11/2019
<b>End Date</b>	30/11/2022
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



### COMPLETED PROJECT

This investment provided Hort Innovation with a subscription to the Global Trade Atlas Database. Access to this trade data was used to validate export performance and assist with forming ongoing strategy and focus areas in the area of international trade. This information was shared with relevant industry bodies and delivery partners.

## Horticulture Impact Assessment Program 2020/21 to 2022/23 (MT21015)

<b>Service Provider</b>	Ag Econ
<b>Project Leader</b>	George Revell
<b>Start Date</b>	11/4/22
<b>End Date</b>	30/11/2025
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



Hort Innovation has engaged independent consultants to evaluate the impact of our R&D investments, providing insights into the type and magnitude of impacts that are being

generated across the company's strategic levy programs. This is a key piece of investment evaluation work, and a yearly process for the company, which began through the project Ex-post impact assessment (MT18011) and continues through this program.

## Consumer usage, attitude and brand tracking (pilot program) (MT21201)

<b>Service Provider</b>	Fifty-Five Five
<b>Project Leader</b>	Cori Hodge
<b>Start Date</b>	23/02/2022
<b>End Date</b>	31/07/2022
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



### COMPLETED PROJECT

This pilot program provided a category tracking service to allow various horticultural categories to better understand consumer usage and attitudes and the effectiveness of marketing campaigns. The initial phase of the program ran for three months to ensure that the continuous tracker ran effectively, after which a longer-term program was put in place.

The insights gained from this program answered the following questions:

- How do consumer trends and movements in behaviours, usage and attitudes to fresh produce change over time?
- How do these trends and evolving expectations of consumers inform future demand opportunities for both the whole-of-horticulture, as well as individual industries?
- What perception metrics drive usage and purchase?
- What are the barriers to brand/category salience and purchase and how do we overcome these to drive future growth?

The program also examined the effectiveness of Hort Innovation marketing campaigns to determine how salient they are in market, what their impact is on consumer usage, attitudes and future purchase intent, and how effective they are at driving messaging comprehension and enjoyment.

## Consumer usage and attitude tracking 2022/23 (MT21202)

<b>Service Provider</b>	Fifty-Five Five
<b>Project Leader</b>	Cori Hodge
<b>Start Date</b>	28/6/22
<b>End Date</b>	31/07/2023
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



This investment provides a category tracking service to allow various horticultural categories to better understand consumer usage and attitudes and the effectiveness of marketing campaigns.



The insights gained from this program will seek to answer questions such as:

- How do consumer trends and movements in behaviours, usage and attitudes to fresh produce change over time?
- How do these trends and evolving expectations of consumers inform future demand opportunities for both the whole-of-horticulture, as well as individual industries?
- What perception metrics drive usage and purchase?
- What are the barriers to brand/category salience and purchase and how do we overcome these to drive future growth?

The program will also examine the effectiveness of Hort Innovation marketing campaigns to determine how salient they are in market, what their impact is on consumer usage, attitudes and future purchase intent, and how effective they are at driving messaging comprehension and enjoyment.

### Consumer behavioural data program (MT21004)

<b>Service Provider</b>	Nielsen
<b>Project Leader</b>	Llew Stevens
<b>Start Date</b>	20/11/2022
<b>End Date</b>	7/12/2026
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



This multi-industry investment is tasked with providing regular consumer behaviour data and insight reporting to a range of industries, through the Harvest to Home platform ([www.harvesttohome.net.au](http://www.harvesttohome.net.au)).

The platform has a dedicated dashboard for each commodity, making data and reporting easily accessible for industry participants.

The information is intended to assist growers and supply chain partners in decision-making for their businesses and, for the wider industry, the data and insights will be available to support strategic activities.

### Economic contribution of Australian horticulture (MT21010)

<b>Service Provider</b>	Centre for International Economics
<b>Project Leader</b>	David Pearce
<b>Start Date</b>	11/03/2022
<b>End Date</b>	7/11/2022
<b>Funding Type</b>	Multiple, including the Hort Innovation Avocado Fund



**COMPLETED PROJECT**

This short investment used a suite of economic models to measure and understand how the horticulture industry contributes to the Australian economy. The project estimated

the direct and indirect impacts on the national economy, as well as regional areas.

This project provided the horticulture sector with the information needed to articulate how their activities contribute to regional, state and national economies, and assisted in decision-making as well as discussions with governments and other stakeholders.

The analysis produced case studies that provided detailed information on the importance of the horticulture industry to Australia.

### Horticulture trade data (MT22005)

<b>Service Provider</b>	IHS Global
<b>Project Leader</b>	Hort Innovation Communications Team
<b>Start Date</b>	14/12/2022
<b>End Date</b>	1/12/2025
<b>Funding Type</b>	Multiple, including Hort Innovation Avocado Fund



This investment provides Hort Innovation with a subscription to the Global Trade Atlas Database. Access to this trade data is used to validate export performance and assist with forming ongoing strategy and focus areas in the area of international trade. This information is shared with relevant industry bodies and delivery partners.

### Marketing campaign evaluation modules FY22/23 (MT22200)

<b>Service Provider</b>	Fifty-Five Five
<b>Project Leader</b>	Cori Hodge
<b>Start Date</b>	8/8/2022
<b>End Date</b>	31/7/2023
<b>Funding Type</b>	Multiple, including Hort Innovation Avocado Fund



This project examines the impact of Hort Innovation's Apple and Pear, Avocado, Banana, Mango, Mushroom and Sweet potato levy-funded marketing campaigns. These insights will provide Hort Innovation and industry with a clear view of how the campaigns have performed in driving salience, specific messages and purchase intent.

The research will aim to answer the following questions:

- How salient are certain Hort Innovation campaigns in market?
- What is the impact of campaign activity on consumer usage, attitudes and future purchase intent?
- How effective are Hort Innovation's campaigns at driving message comprehension and enjoyment?

The research will look at campaign awareness, channel recall, key messages, impact on behaviours and key attitudes towards the brand/category.

## Underpinning projects

### National avocado industry communications program (AV18003)

<b>Service Provider</b>	Avocados Australia
<b>Project Leader</b>	John Tyas
<b>Start Date</b>	6/12/2018
<b>End Date</b>	31/7/2022
<b>Funding Type</b>	Hort Innovation Avocado Fund
<b>COMPLETED PROJECT</b>	



Carrying on from the National avocado industry communications program (AV15002), this investment ensured the Australian avocado industry remained up-to-date with the latest R&D, marketing, emerging information, trends and issues both in Australia and overseas. By providing a consistent flow of relevant information, it kept growers and other industry stakeholders in a position to make informed business decisions and best-practices changes. A number of communication channels were produced and maintained by this project, including but not limited to the Talking Avocados magazine; Guacamole e-newsletter; the Avocados Australia website, including its Best Practice Resource (BPR); industry social media channels; video content; and media releases and other industry articles.

### National avocado industry communications program (AV21004)

<b>Service Provider</b>	Avocados Australia
<b>Project Leader</b>	John Tyas
<b>Start Date</b>	1/8/2022
<b>End Date</b>	1/8/2027
<b>Funding Type</b>	Hort Innovation Avocado Fund



Carrying on from the National avocado industry communications program (AV18003), this investment ensures the Australian avocado industry remains up-to-date with the latest R&D, marketing, emerging information, trends and issues both in Australia and overseas. By providing a consistent flow of relevant information, it keeps growers and other industry stakeholders in a position to make informed business decisions and best-practices changes. A number of communication channels are produced and maintained by this project, including but not limited to the Talking Avocados magazine; Guacamole e-newsletter; the Avocados Australia website, including its Best Practice Resource (BPR); industry social media channels; video content; and media releases and other industry articles.

This project strives to achieve the following objectives:

- increase industry understanding and adoption of production best practice as well as awareness and adoption of any emerging production information and relevant production related R&D project outcomes and outputs;

- provide knowledge transfer to the avocado industry value chain on research findings, best practice, emerging risks and opportunities
- create a better-informed industry to increase farm productivity and fruit quality across all business sizes of avocado growers
- Promote Hort Innovation membership and engagement with the national R&D program to all known avocado levy payers.

### Industry annual reports & industry advice and grower consultation

<b>Service Provider</b>	Hort Innovation
<b>Project Leader</b>	Gemma Burger
<b>End Date</b>	This is an ongoing project
<b>Funding Type</b>	For avocado, Hort Innovation Avocado Fund



Hort Innovation has ongoing projects to fund the advisory mechanism under Hort Innovation. This includes the strategic investment advisory panel (SIAP) and attendance by growers at meetings to provide advice on strategic R&D investment and marketing investment through individual project committees, such as evaluation panels and other meetings.

In addition, Hort Innovation produces an Industry Annual Report, available at [www.horticulture.com.au/growers/avocado-fund/](http://www.horticulture.com.au/growers/avocado-fund/).

### Australian Horticulture Statistics Handbook 2021-22 to 2023-24

<b>Service Provider</b>	Freshlogic
<b>Project Leader</b>	Adam Briggs, Hort Innovation
<b>End Date</b>	This is an ongoing project
<b>Funding Type</b>	Multiple including the Hort Innovation Avocado Fund



This whole-of-horticulture investment is responsible for producing Hort Innovation's annual *Australian Horticulture Statistics Handbook*, which offers the most comprehensive and contemporary data available on all sectors of the Australian horticulture industry in one easy-to-use guide.

The Handbook features more than 470 pages of information drawn from several supply chain sources, including international trade statistics and industry peak bodies, the Handbook includes data on more than 70 horticultural products including fruit, nuts, vegetables, nursery, turf, and cut flowers.

### More information

For further details on specific projects, we encourage you to contact Hort Innovation Industry Service and Delivery Manager on 02 8249 3715 or [Gemma.Burger@horticulture.com.au](mailto:Gemma.Burger@horticulture.com.au), visit [horticulture.com.au](http://horticulture.com.au) or check for final reports in the Best Practice Resource Library.

# Quality improvement at retail: positive results from quality monitoring project

By Adam Goldwater, Applied Horticultural Research

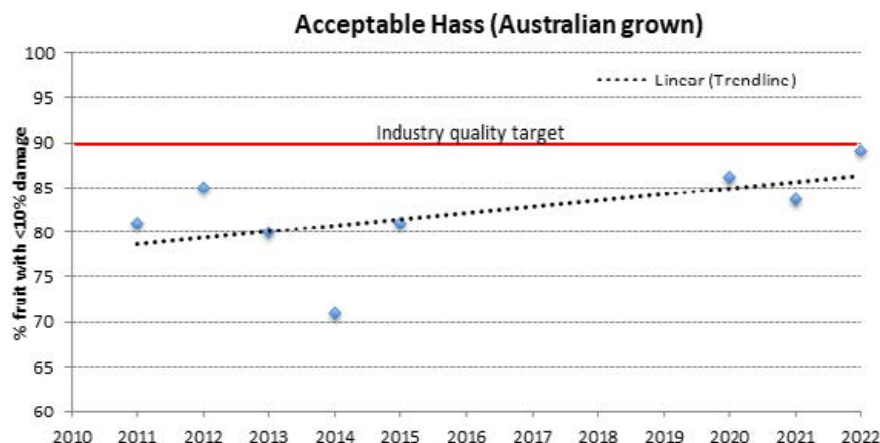
Improving the quality of avocados on retail shelves is an essential part of the broader goal of increasing the demand for Australian avocados. The Hort Innovation project 'Monitoring avocado quality at retail' (AV19003) monitored the quality of avocados at retail between 2020 and 2023, with some promising final results.

The industry has a target that 90% or more of the avocados on display in stores are acceptable to consumers. Previous industry quality monitoring between 2008 and 2015 identified that less than 80% of Australian Hass avocados met the consumer acceptance standard.

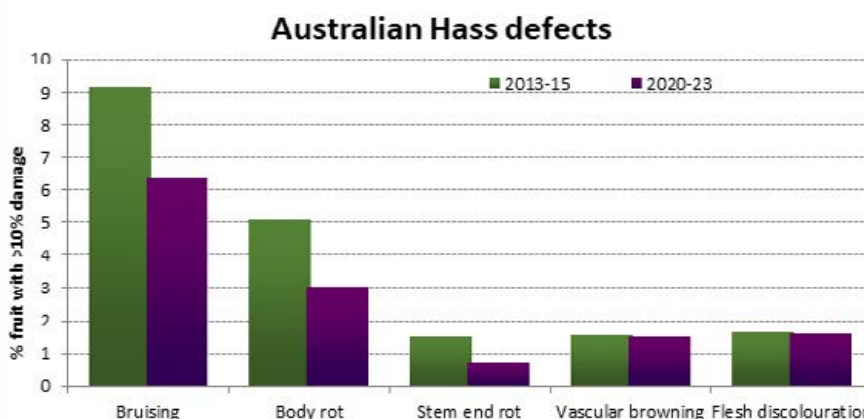
## Monitoring shows the industry's investments in quality improvement have paid off

Quality of Australian grown Hass (excluding imported fruit) increased from an average of 79.6% in 2011-2015, to 87.2% acceptable fruit in 2020-22 (Figure 1). The improvement brings the industry even closer to its target of 90% acceptable fruit, and the trend looks promising.

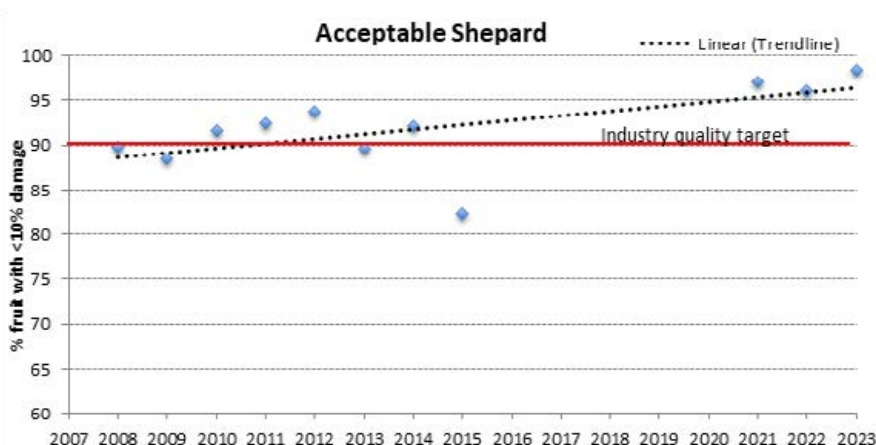
The main Hass quality defect remains as bruising, followed by body rots. A reduction in bruising, body rots and stem-end rots has contributed to quality improvement, while flesh discolouration and vascular browning remain at similar levels to 2013-15 (Figure 2).



**Figure 1.** Percentage acceptable Hass fruit (Australian grown) in Australian retail stores from 2008 to 2022. Datapoints from 2008 to 2015 are from project AV11015, and 2020 onwards is from AV19003.



**Figure 2.** Levels of Hass defects (Australian grown fruit) in 2020-23 (AV19003 data) and 2013-15 (AV11015 data).



**Figure 3.** Percentage acceptable Shepard fruit in Australian retail stores from 2008 to 2023. Datapoints from 2008 to 2015 are from project AV11015, and 2021 onwards is from AV19003.

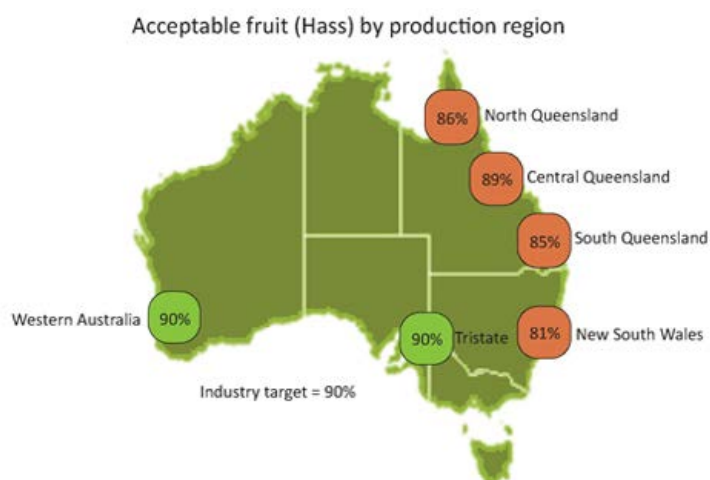


The project also shows that Shepard avocado quality has been consistently better than Hass – a trend, also identified in AV11015. The quality of Shepard avocados at retail has jumped from an average of 90% acceptable fruit between 2008-15, to an impressive 97% acceptable fruit in 2021-23 (Figure 3).

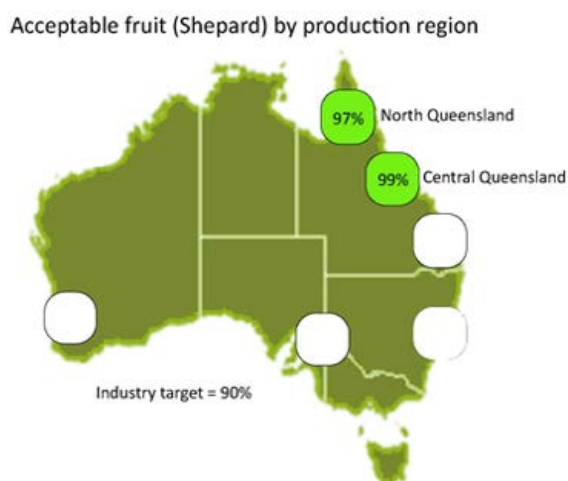
### Differences in quality by production region and country of origin

The acceptable quality of Hass avocados varied depending on the region where they were grown. Fruit from Western Australia and Tristate regions had the highest acceptable quality, followed by Central, North and South Queensland. New South Wales had the lowest quality, with only 81% of fruit meeting the acceptable standard (Figure 4). Shepard quality was similar from both North and Central Queensland (Figure 5).

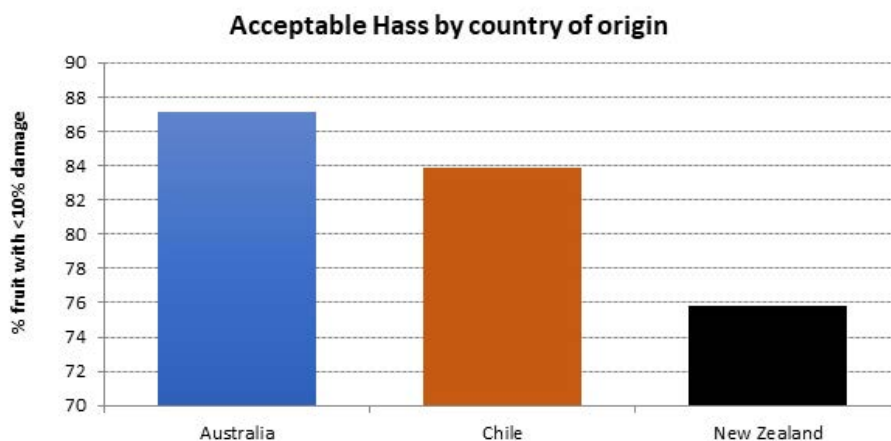
The quality of Australian grown Hass avocados was higher than that of imported fruit (Figure 6). However, the quality of a small number of Chilean samples (13 samples, or 130 fruit) was only slightly lower. During the main New Zealand supply period from October to February, New Zealand fruit quality consistently lagged behind that of Australian fruit due to higher levels of rots and vascular browning. This isn't surprising, considering the average age of New Zealand fruit samples was 25.4 days from packing to purchase at retail, compared to 13.5 days for Australian Hass.



**Figure 4.** Percentage of acceptable Hass by production region (2020-23).



**Figure 5.** Percentage of acceptable Shepard by production region (2020-23).



**Figure 6.** Percentage of acceptable Hass in Australian retail stores by country of origin (2020-23). Note that only 13 Chilean samples (130 fruit) were collected.

## Major retailers outperformed independent retailers

Quality varied between different retailer groups. Two of the major retailers had close to 90% acceptable fruit, another major retailer had 86.7%, and the independent retailers had 83.7% (Figure 7). The differences in quality were mostly due to rots, vascular browning, and flesh discolouration.

Interestingly, independent retailers had slightly more firm-ripe and ripe fruit (firmness stages 4-5). This could explain the slightly poorer quality at independent stores. Independent retailers make up about 25% of the avocado retail market share, so there is a need to improve quality in this retailer group.

## Fruit age and quality

The more time between packing and sale at retail, the poorer the fruit quality was (Figure 8). In fact, extending the time between harvest and retail from 10-15 days to 20-25 days more than doubled the level of rots in Australian Hass. Hass grown in New Zealand had even more fruit affected by rots, and when fruit age exceeded 25 days, nearly 20% of fruit were unacceptable due to rots.

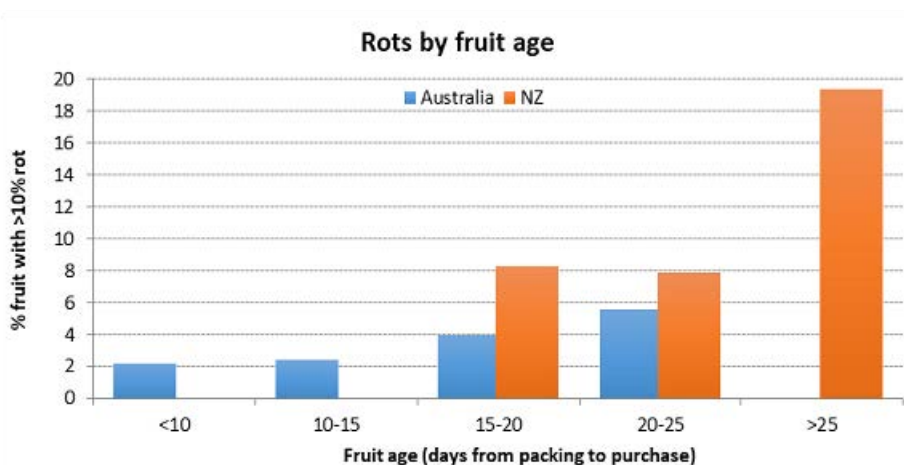
## Bruising higher on loose retail displays

Loose displays of ripe Hass avocados had higher levels of bruising compared to tray displays. Loose displays had 8.8% unacceptable fruit due to bruising, while tray displays had only 5.8% of fruit affected (Figure 9).

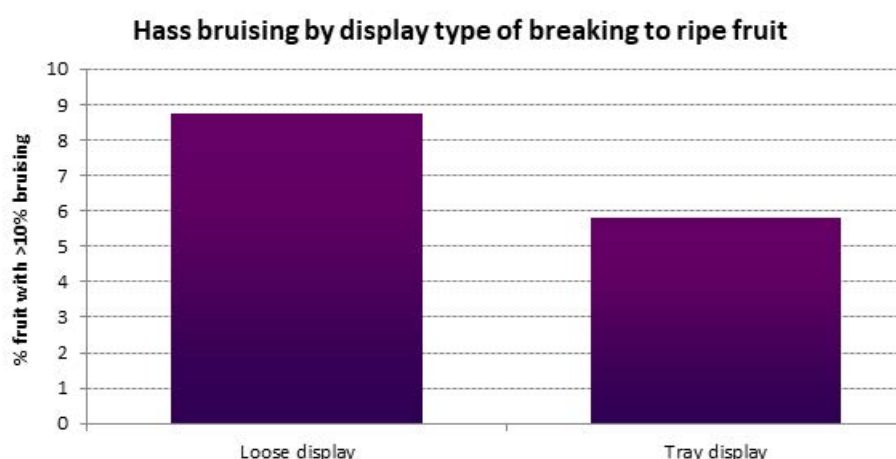
Keeping fruit in trays reduces the handling by store staff, which minimises the potential for bruising. As roughly half of the stores sampled in the project had loose displays, transitioning to tray displays presents an opportunity for quality improvement.



**Figure 7.** Percentage of acceptable avocados (Shepard and Hass) by retailer group (2020-23). This includes the three major retailers (purposely deidentified) and a group of independents.



**Figure 8.** Effect of fruit age (days from packing to purchase at retail) on rots of Hass avocados grown in Australia and New Zealand. Categories without bars are missing data, due to insufficient samples collected in those categories.



**Figure 9.** Hass bruising on loose versus tray retail displays of fruit which were at breaking firmness, or softer (stages 3+).

## Ripe fruit had poorer quality

Softer fruit is more prone to bruising and the expression of rots (Figure 10). This implies that firmer fruit should be sold at retail to minimise damage. However, this presents a dilemma, as consumers often demand ready-to-eat fruit. There is a clear trade-off between sales and quality. One potential solution is to provide fruit at stages 3-4, rather than stage 5 ripe, which could help reduce flesh damage.

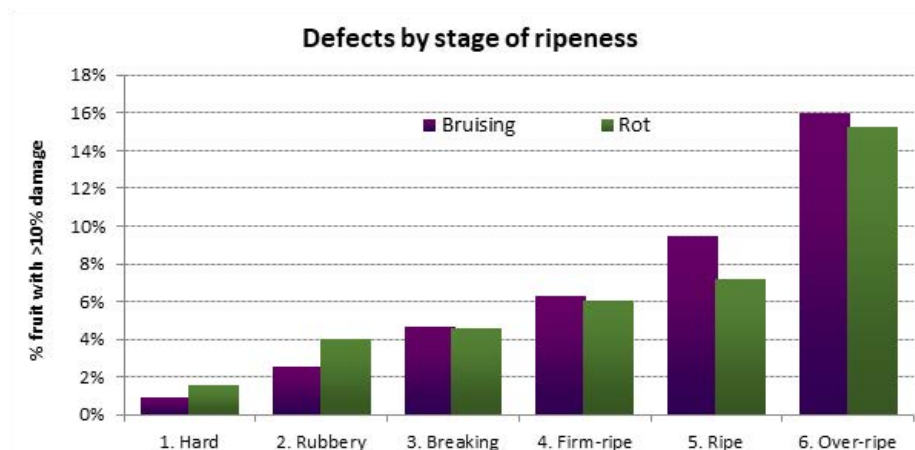
Samples with greater variability in firmness between fruit had more bruising. This is likely the result of consumers squeezing fruit more if it's challenging for them to find one at their preferred ripeness stage. Uniformly ripe fruit should be displayed to minimise bruising.

## The supply of immature fruit remains an issue

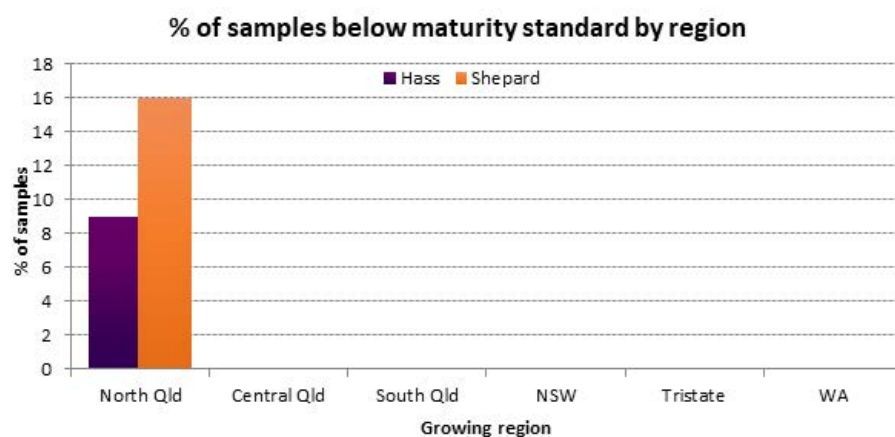
Although maturity was only monitored for 13 months in this project, immature Hass and Shepard fruit were identified at the beginning of the supply season from samples grown in North Queensland, as shown in Figure 11. Specifically, immature Hass was identified in April and May, and immature Shepard in February and March (Figure 12).

Despite only one year of monitoring, initial suggestions are that little improvement has been made since the previous monitoring project conducted from 2007 to 2015 (AV11015). The levels of immature Shepard avocados from North Queensland in February remained at similar levels to 2007-15. Similarly, levels of immature Hass from North Queensland remained comparable to 2007-15.

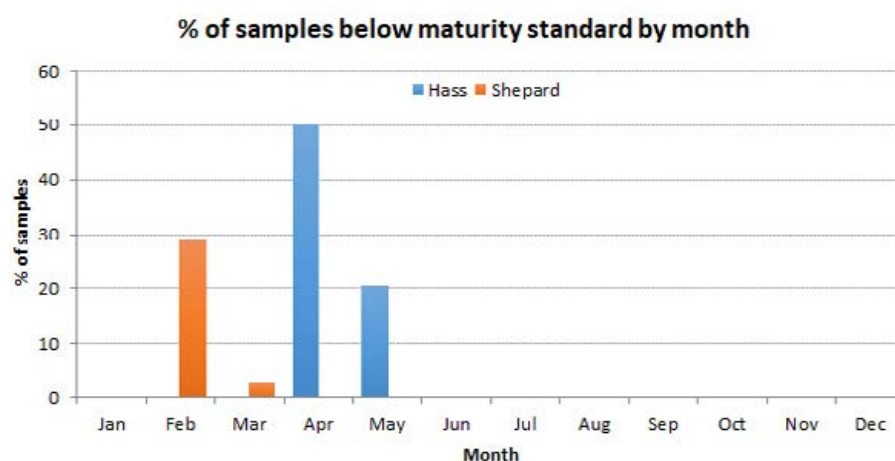
More promising was that in 2022-23, immature fruit was only identified from North Queensland, whereas in 2007 to 2015, immature fruit was identified from all production regions.



**Figure 10.** Levels of bruising and rots by stage of ripeness at purchase (Hass and Shepard combined).



**Figure 11.** Percentage of immature Hass and Shepard samples collected at wholesale from February 2022 to March 23, which failed to meet the industry minimum maturity standard of 23% dry matter (Hass) and 21% dry matter (Shepard).



**Figure 12.** Percentage of immature Hass and Shepard samples collected at wholesale from February 2022 to March 23, which failed to meet the industry minimum maturity standard of 23% dry matter (Hass), and 21% dry matter (Shepard).



## Suppliers and retailers were well engaged

The success of any project relies heavily on the engagement of all stakeholders involved.

A survey conducted at the end of the project showed that 83% of suppliers reported being more aware of their fruit quality issues, while 79% have a better understanding of fruit quality by production region. It's encouraging to note that 58% of suppliers have taken steps to address quality issues by making practice changes or conducting follow-up activities in response to quality feedback.

We're also pleased to report that all major retailers have used the results of the project to make practice changes in their businesses. The changes included adjusting stock rotation and handling practices, shifting from loose

fruit displays to tray displays, and adjusting firmness specifications. These improvements can help to minimise fruit damage and ensure customers receive consistently high quality avocados.

Suppliers and retailers are supportive of continuing quality monitoring at retail, and a new project is commencing. This is a positive sign for the future of avocado quality and ensures that we can continue to build demand for Australian avocados.

## More information

The AV19003 final report will be published on the Best Practice Resource, and Hort Innovation website. For further details, please contact project leader Adam Goldwater at Applied Horticultural Research (AHR) on 0466 080 693 or [adam.goldwater@ahr.com.au](mailto:adam.goldwater@ahr.com.au).

## Acknowledgements

The Monitoring avocado quality in retail (AV19003) project has been funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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# ...ISN'T IT TIME YOU CAME ON BOARD?

# Challenge test reveals robustness

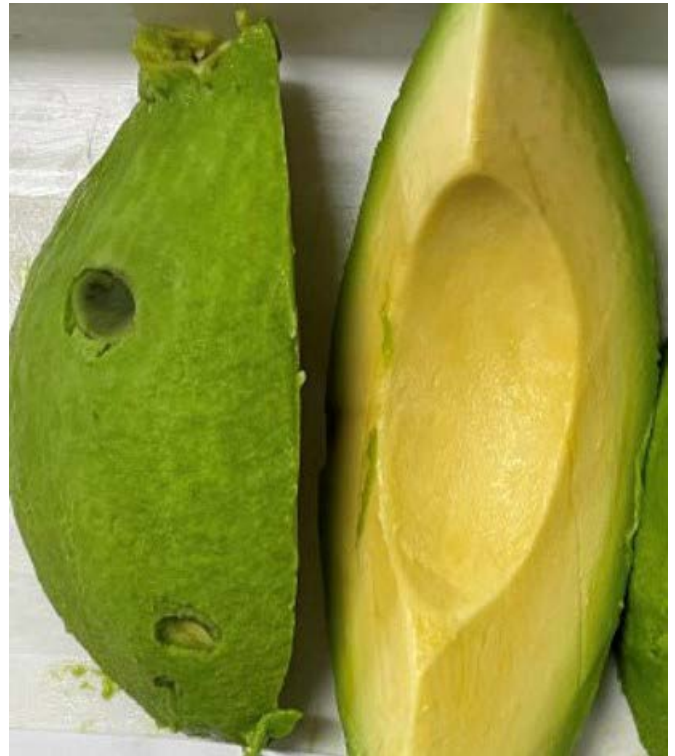
*By Noel Ainsworth, Qld Department of Agriculture & Fisheries*

Over the past three years, fruit quality was monitored in project AV18000 in selected supply chains, along with conditions and practices used in those chains to the point of wholesale. In addition to monitoring fruit quality under normal commercial conditions, the project also assessed the robustness of fruit (the ability of the fruit to withstand expected supply chain conditions at the limits of best practice) by holding samples for extended periods before ripening.

To monitor fruit quality and fruit robustness, two samples were taken from each consignment. The first sample had a standard fruit quality test, assessing fruit quality when the fruit had traversed Australia to wholesale markets and then ripened to reach eating ripe, usually within 10-20 days from packing. Over the four years, while 87% of individual fruit met the industry standard (of 90% of fruit with <10% disorders), when examined on a consignment basis only 66% of consignments met the standard. This provided an opportunity to undertake traceback investigations that identified; the ineffectiveness of in-field disease control programs and coverage; the poor health of trees; and unfavourable periods of weather, as the top three root causes. Even if the fruit is infected with body rot spores in the orchard, under normal supply chain conditions, it is possible that the fungal organism may not have time to sufficiently develop, resulting in low or no fruit rots when purchased by the consumer.

To assess the robustness of the fruit, a challenge fruit quality test was applied to the second sample whereby fruit was stored for an extra 14 days under recommended conditions for that variety. This simulated either crowded domestic markets or selection of that fruit for sea-freight export. This acknowledges that there can be a noticeable exponential growth in the development of body rot infections in long supply chains of 25 days or more.

Comparing the standard test results with the challenge test results enabled the project to get a sense of fruit robustness. If the results were similar, robustness was considered good. However, if the fruit quality result from the challenge test was significantly worse than the result from the standard test, the sample was considered to have poor robustness.



The poorer fruit quality resulting from the challenge sample (on the bottom) when compared to the standard (on the top) from supply chain number 3 in 2021, indicated poor fruit robustness.



On average, 20% of selected avocado consignments exhibited poor robustness. This significant percentage suggests that exporters or suppliers sending fruit into crowded domestic markets should be aware of the risk associated with poor robustness coming from different suppliers and orchard blocks. Understanding and managing this risk is crucial for ensuring consistent fruit quality.

While the root cause of robustness was not investigated as part of AV18000, it is suspected that nutrition and specifically the N:Ca ratio or the inclusion of larger fruit, often sourced from younger trees may be contributing factors. This is being investigated in more detail in project AV21005.

This monitoring of quality and robustness will continue in project AV22011 *Monitoring avocado supply chain quality* until 2026. Consequently, pack sheds whose fruit is sampled will receive a fruit quality report, along with an assessment of their fruit robustness. By doing so, an effective feedback loop is established to support growers interested in improving fruit quality and robustness in longer supply chains, whether within Australia or our export markets.

The new project *Monitoring avocado supply chain quality* (AV22011) managed by Avocados Australia, has been funded by Hort Innovation, using the avocado industry research and development levy, co-investment from Avocados Australia, Applied Hort Research, the Qld Department of Agriculture and Fisheries, WA Department of Primary Industries and Regional Development, Rudge Produce Systems and contributions from the Australian Government.

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# New quality project commences

*By Anne Larard, Avocados Australia and Adam Goldwater, Applied Horticultural Research*

To continue to improve the retail quality of avocados, the project “Monitoring avocado supply chain quality” (AV22011) commenced monitoring in July 2023. Building upon the success of its predecessors, the AV19003 and AV18000 projects, this new initiative will focus on monitoring the quality of avocados at retail and in the supply chain over a period of three years. The project aims to provide suppliers and retailers with rapid feedback on fruit quality, employ flexible sampling methods, and address ongoing quality issues through thorough investigations and tracebacks along the supply chain.

## Rapid feedback

Suppliers and retailers will benefit from near-weekly monitoring, allowing them to receive timely information about the quality of their fruit at the retail level. Quality reports will be emailed to the supplying packhouse, who are encouraged to pass them on to the grower if identifiable. Reports will be similar to those provided in the previous project, although additional photos of fruit defects will be provided.

## Flexibility in sampling

One of the key advantages of the new quality project is its flexibility in sampling methods. This means that in addition to regular monitoring, the project will be able to provide supplementary feedback when quality issues arise. This could be particularly useful during periods of change, such as when transitioning between avocado varieties or growing regions, as well as in response to significant increases in supply. By addressing quality issues promptly, the project aims to ensure that consumers consistently receive avocados of the highest quality.

## Investigating quality issues

The project will use storage challenge tests and conduct supply chain tracebacks to address ongoing quality issues identified at retail or in the supply chain. This will allow the supplier and retailer to identify factors that may be impacting fruit quality. Furthermore, regular liaison with the major retailers will be used to identify and address quality issues arising between the stage of the ripener and retail display. Additional industry-level tools will include a self-assessment traceback process, and webinar presentations that will ensure regular project insights and recommendations are shared.

## Monitoring fruit maturity

To maintain acceptable eating quality, the AV22011 project will closely monitor fruit maturity at the wholesale level. Minimum maturity standards will be monitored, with particular focus given to the initial supply from each growing

region. By ensuring that avocados meet the desired maturity standards, the project seeks to enhance consumer satisfaction and encourage repeat purchases.

## More information


For further details, please contact Anne Larard at Avocados Australia, email [idm@avocado.org.au](mailto:idm@avocado.org.au) or phone 07 3846 6566.

## Acknowledgements


The Monitoring avocado supply chain quality (AV22011) project has been funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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# Snapshots – International Avocado Research Update

This series of research snapshots is compiled from abstracts of published scientific papers accessed through CAB Direct as well as Google Scholar searches. Dates provided reflect the date research was published.

## FRUIT QUALITY AND TECHNOLOGY

### Estimating the ripeness of Hass avocado fruit using deep learning with hyperspectral imaging. Australia (2023):

Rapid ripeness assessment of fruit after harvest is important to reduce post-harvest losses by sorting fruit according to the duration until they become ready to eat. However, there has been little research on non-destructive estimation of the ripeness and ripening speed of avocado fruit. Unlike previous methods, which classify the ripeness of fruit into a few categories (e.g., unripe and ripe) or indirectly estimate ripeness from its firmness, we developed a method using hyperspectral imaging coupled with deep learning regression to directly estimate the duration until ripeness of Hass avocado fruit. A set of 44,096 sub-images of 551 Hass avocado fruit images was used to train, validate, and test a convolutional neural network (CNN) to predict the number of days until ripeness. Training, validation, and test samples were generated as sub-images of Hass fruit images and were used to train a spectral-spatial residual network to estimate the duration to ripeness. We achieved predictions of duration to ripeness with an average error of 1.17 days per fruit on the test set. A series of experiments demonstrated that our deep learning regression approach outperformed classification approaches that rely on dimensionality reduction techniques such as principal component analysis. Our results show the potential for combining hyperspectral imaging with deep learning to estimate the ripeness stage of fruit, which could help to fine-tune avocado fruit sorting and processing. Read the paper here: <https://bit.ly/44nejUc>.

## DISEASE MANAGEMENT

### Evaluating the potential of environmentally friendly compounds to deactivate different life stages of *Phytophthora* species. New Zealand (2023):

*Phytophthora* species are a genus in the oomycete class and are destructive plant pathogens. The ability to inhibit all stages in the life cycle of these aggressive *Phytophthora* pathogens is essential for the long-term protection of native trees,

plantation forests and horticultural crops that they threaten. Compounds having this ability are currently scarce. In this study, antifungal compounds of natural and synthetic origin were screened against the mycelial, zoospore and oospore life stages of *Phytophthora agathidicida* (*P. agathidicida* 18406), *P. multivora* (*P. multivora* 20280) and *P. cinnamomi* (*P. cinnamomi* 20276, 3910 and 21050). An antifungal lipopeptide showed promising (25–200 µg/mL) antimycelial activity against all the tested *Phytophthora* species, rapid (c. 30 s) inhibition of *P. agathidicida*, *P. multivora* and *P. cinnamomi* 3910 zoospore motility, inhibition of zoospore germination at 12.5–50 µg/mL and reduced the viability of *P. agathidicida* and *P. multivora* oospores at 1000 µg/mL. Polygodial extracted from New Zealand horopito leaves showed more potent (5–50 µg/mL) antimycelial activity and inhibited zoospore motility of *P. agathidicida*, *P. multivora* and *P. cinnamomi* 3910, although at a slightly slower rate; however, it was inactive against oospores. Polygodial and lipopeptide protected kauri and avocado leaves from *Phytophthora* infection and did not show symptoms of phytotoxicity. Polygodial also inhibited the growth of *P. agathidicida* in soil. This study demonstrates for the first time the promising antioomycete potential of compounds ranging from small molecule natural products to larger biomolecules such as lipopeptides, which can be developed as compounds to deactivate the different life stages of aggressive *Phytophthora* species. Read the paper here: <https://bit.ly/3rwAaKg>.

## BIOSECURITY SURVEILLANCE

### Surveillance for avocado sunblotch viroid utilizing the European honey bee (*Apis mellifera*) Australia (2023):

Avocado is one of the world's fastest growing tropical fruit industries, and the pathogen avocado sunblotch viroid (ASBVd) is a major threat to both production and access to international export markets. ASBVd is seed transmissible, with infection possible via either the male (pollen) or female gametes. Surveillance for ASBVd across commercial orchards is a major logistical task, particularly when aiming to meet the stringent standards of evidence required for a declaration of pest freedom. As with many fruit crops, insect pollination is important for high avocado yields, and honey bee (*Apis mellifera*) hives are typically moved into orchards for paid pollination services. Exploiting the foraging behavior of honey bees can provide a complementary strategy to traditional surveillance methods. High-throughput sequencing (HTS) of bee samples for plant viruses shows promise, but this surveillance method has not yet been tested for viroids or in

a targeted plant biosecurity context. Here, we tested samples of bees and pollen collected from pollination hives in two ASBVd orchard locations, one in Australia, where only four trees in a block were known to be infected, and a second in South Africa, where the estimated incidence of infection was 10%. Using real-time RT-PCR and HTS (total RNA-seq and small RNA-seq), we demonstrated that ASBVd can be confidently detected in bees and pollen samples from hives within 100 m of infected trees. The potential for using this approach in ASBVd surveillance for improved orchard management and supporting market access is discussed. Find paper access information at: <https://bit.ly/46Nad9u>.

## IRRIGATION MANAGEMENT

**Irrigation alternatives for avocado (*Persea americana* Mill.) in the Mediterranean subtropical region in the context of climate change: a review.** Spain (2023):

Due to congenital features, avocado (*Persea americana* Mill.) trees are substantial water users relative to other fruit trees. The current growing deficiency of water resources, especially in arid and semi-arid avocado-producing areas, has led to the demand for more sustainable water-saving measures. The objective of this review was to analyze the role of deficit irrigation as a strategy to face climate change and water scarcity through achieving efficiency, saving water, and maximizing the benefits that could be achieved at the level of the irrigated agricultural system. Particular attention is devoted to studies performed in the subtropical Mediterranean climate, in which irrigated avocado orchards are common. These studies analyzed irrigation demand, deficit irrigation, and determination of water status through physiological parameters, leading to possible sustainable irrigation programs for avocado in the context of water shortage scenarios. Through these insights, we conclude that under the current climatic circumstances with respect to available water resources, avocado farming requires sustainable resilience strategies to reduce irrigation water consumption without affecting the yield and quality of the fruits. Water stress inevitably affects the physiological processes that determine yield. Therefore, an admissible yield loss is required with smaller fruits and water savings made through deficit irrigation strategies. In addition, modern consumers tend to prefer foods based on sustainability, i.e., there is a high demand for socially responsible and environmentally friendly products. Read the paper here: <https://bit.ly/3XKR83P>.

### More information

If you would like more details on any of the snapshots, please contact Avocados Australia on 07 3846 6566.

# NORDOX



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# INTERNATIONAL NEWS

## UCR to release new high density avocado scion cultivar

The University of California (UCR) is to release a new high density avocado scion cultivar. BL516, which will be marketed as Luna UCR and is pending plant variety protection in the US, officially came out in June and is the programme's second release in the last 20 years.

Eurosemillas, who partnered with UCR in 2020 to deliver a new generation of avocados to market, holds the worldwide master license and lead the variety's rollout under Green Motion, the international platform it set up with Mission Produce for the advancement of the global avocado industry. This is the first scion cultivar to be released under the Eurosemillas/UCR partnership.

UCR's avocado scion breeding programme began in the 1950s and maintains one of the largest avocado germplasm collections in the world. UCR has patented and released eight new scion varieties since the 1980's, most notably, Gem in 2003 and Lamb Hass in 1996.

With its slender upright growth habit, BL516 offers growers a next generation tree better adapted to the increasingly popular high-density plantings. It is a B flower type so it can serve as a polliniser variety for Hass, Gem and other type A flower varieties.

According to Dr Mary Lu Arpaia, professor of extension, subtropical horticulture at UCR, the new cultivar matures slightly later than Hass and like that variety, the fruit turns from an emerald green to glossy black as it ripens, in line with current consumer preferences.

Support for UCR's avocado scion breeding programme from the California avocado industry via the California Avocado Commission (CAC) dates to the 1950s and has provided millions of dollars in the scion breeding efforts.

With this in mind, California growers will receive a reduction in royalties paid for planting and production of BL516, giving them an advantage over international avocado growers. Furthermore, all eligible California growers will be granted a sublicense upon request and agreement of a sublicense from Eurosemillas, ensuring widespread availability of BL516 within the State.

Eurosemillas will host an in-person meeting on Tuesday, 20 June at the University of California Cooperative Extension facility in Ventura, California, where industry professionals can learn first-hand of the potential of BL516 as a polliniser variety and a new cultivar better adapted to high density plantings.

Looking ahead, UCR said its avocado breeding programme remains committed to pushing the boundaries of innovation. With ongoing research efforts and the Green Motion platform, UCR aims to streamline the commercialisation process for its avocados, ensuring that future varieties continue to captivate markets and consumers alike.

"We are thrilled to introduce the BL516 variety, which showcases the direction of our programme and the immense potential it holds for the avocado industry," said Arpaia.



BL516 turns from emerald green to glossy black as it ripens.

# WAO launches consumer education campaign in India

The World Avocado Organization (WAO) a non-profit organization which represents producers, exporters and importers of avocados from across the world, was set up in 2016 to promote avocado consumption and the health benefits of the world's favourite superfood.

In June the WAO announced its expansion of educational activities to promote avocados into the “vibrant and rapidly growing” Indian market. With its rich history, diverse culinary traditions, and a growing appetite for healthy foods, India presents a significant opportunity for avocados consumption to grow.

According to the WAO, although India has witnessed a surge in avocado consumption in recent years, product usage among the middle-class consumers is still limited. Most consumers in India are not aware about the health benefits of regular avocado consumption and also not aware how to best use this fruit in different cuisines.

Recognizing the immense potential of the Indian market, WAO decided to launch its educational consumer campaign in India to create awareness about avocado nutrition and how it can be integrated in to varied Indian cuisines.

Speaking on the occasion to mark the launch of WAO campaign in India, Zac Bard, Chairman of WAO said, “We are delighted to bring the World Avocado Organization’s campaign to India. The country’s dynamic culinary landscape and

*growing health-conscious consumers make it a great potential market for avocados. Our goal is to educate consumers about the advantages of including avocados in their diet and promote a healthy lifestyle. While most avocados in the market are imported, there are Indian companies who are also looking to grow Hass variety of avocados in India.”*

*“With their natural goodness and versatility, avocados have become an integral part of modern diets across the globe. We envisage similar trends in India and foresee immense potential for avocados. The demand is only going to increase as more discerning Indian consumers discover this amazing fruit, its health benefits, its taste and ways to incorporate avocados in daily meals. We will be coming out with many exciting events. Keep an eye out as we bring to you top Indian chefs and nutritionists cooking with and talking about Hass avocados.”*

The World Avocado Organization is a non-profit organization founded in 2016 whose members are avocado growers, exporters and importers from around the world - including the top four grower supplier countries to the EU and UK. The World Avocado Organization promotes the consumption of avocados based on their nutritional value and recognised health benefits. It also shares information and insights with the public on avocado production, supply chains and sustainability.

Source: Asia Bulletin.



## ANVAS ACCREDITED NURSERIES

[www.avocado.org.au/our-programs/anvas/](http://www.avocado.org.au/our-programs/anvas/)

The **Avocado Nursery Voluntary Accreditation Scheme** provides a contemporary approach to high health avocado nursery production, providing greater confidence for growers about the health status of plants sourced from accredited nurseries.

**Anderson Horticulture**  
Duranbah Road, Duranbah, NSW  
**Contact:** Daniel Abbey | **Ph:** 0438 390 441

**Fleming's Nurseries Qld**  
71-83 Blackall Range Rd, Nambour, QLD  
**Contact:** Liz Darmody | **Ph:** 07 5442 1611

**Turkinje Nursery**  
100 Henry Hannam Drive, Walkamin, QLD  
**Contact:** Peter and Pam Lavers | **Ph:** 0419 781 723

**Victorian Citrus Farms Pty Ltd**  
393 Woomera Avenue, Red Cliffs, VIC  
**Contact:** Sean Arkinstall | **Ph:** 0419 391 558

**Chislett Farms Pty Ltd**  
833 Kenley Rd, Kenley, VIC  
**Contact:** Jonathan Chislett | **Ph:** 03 5038 8238

**Avonova Farms**  
203 Old Vasse Rd, Yeagerup, WA  
**Contact:** Dudley Mitchell | **Ph:** 0439 802 293



Your Business – **Our Focus** – Working Together

## **Fibre Packaging for a Sustainable Future**

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**Hawk Group is a family-owned company that manufactures moulded fibre fruit packaging from its purpose-built facility in Hastings, New Zealand.**

With our origins dating back to the early 1970's and now spanning three generations, the family's industry knowledge and experience of fibre recovery, recycling and moulded fibre manufacturing has seen Hawk become an industry leader in their field. Hawk currently supplies more than 80% of NZ's apple and avocado trays and has also had a successful presence in the Australian market through the supply of apple trays since 2016.

One of our primary goals is to make it easy for our customers to work together with us. As such, service excellence is at the forefront of our offering. Continuous improvement across product, service, systems, and strong industry understanding are areas we strive to excel in every day. Our trays are specifically designed for the protection of fruit during the packing, storage, and transport process - from packhouse to end customer. From consignment stock and virtual inventory management to tray design, marketing and automation - we have built an offering that supports all aspects of our customer's operations.

Energy efficiency and sustainability are key drivers in our manufacturing process. This is the best strategy to future proof not just our business, but our customer's business also. All products are made from 100% recycled paper. We do not use any bleaches, pigments, biocides, or toxic chemicals in our manufacturing. Our products are recyclable and compostable after end-use. Hawk is compliant with internationally recognised standards including HACCP Food Safety, ISO 9001:2015, ISO45001:2008 and FSC Chain of Custody Certification. Certificates are available to view or be downloaded from our website. For avocado, we have a full count range available from fruit size 16 to 30. We also have a full range of RDT trays for plastic crates available if required.

Please contact us or view our website for full product specifications at **[www.hawk.net.nz](http://www.hawk.net.nz)**.

We are here to help and answer all of your questions! Our Australian representative, Craig Fraser, can be reached on 041 931 1191 or call **freephone 1800 845 256** or email **[sales@hawk.net.nz](mailto:sales@hawk.net.nz)**.

Craig is happy to meet personally with you and discuss in more detail how Hawk can benefit your business.





# GROWER MEMBER APPLICATION FORM



**Avocados Australia Limited**  
ACN 105 853 807

**BECOME A  
MEMBER TODAY!**

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 form please go to:

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

or call **07 3846 6566**

## MEMBER DETAILS

Business /  
trading name:

ABN:

Key contacts:

Postal address:

Property address:  
(if different  
from above)

## CONTACT DETAILS

Business phone:

Home phone:

Fax:

Mobile:

Email:

Did someone recommend you become a member? Let us know who below!

Name:

## 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:
- ☐ Mastercard ☐ Visa

Credit card number:

Name on credit card:

Expiry date:

Signature:

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

**Avocados Australia**  
**Reply Paid 87929**  
**Brisbane Market Qld 4106**

(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

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