



*R&D Insights* contains the latest levy-funded R&D project updates, research findings and related industry resources, which all happen under the Hort Innovation Olive Fund.

Hort Innovation partners with leading service providers to complete a range of R&D projects to ensure the long-term sustainability and profitability of the olive industry.

## Processing course puts theory into practice

The AOA's acclaimed annual Processing Course got hands-on again this year, attracting a full quota of attendees to the Victorian town of Boort. Having been postponed in 2020 and 2021 due to COVID restrictions, the program was once again delivered face-to-face by international master olive miller Pablo Canamasas, and 2019 and 2021 AIOA Best of Show winners Peter and Marlies Eicher of Salute Oliva.

The comprehensive two-day course covered every aspect of processing EVOO, from grove management for optimal fruit quality to best-practice processing and storage. Attendees also learned about olive oil chemistry, and the practical aspects of oil extraction.

### Primed to process

A new addition to this year's program was a four-hour pre-event webinar, held in the week prior to the physical course. Run by Canamasas, the webinar covered a good chunk of the course's theoretical learning, with topics including grove management practices and their impact on quality, determining optimal harvesting times, oil storage and filtration, and a comprehensive look at the parameters determining olive oil quality and shelf life.

While the online session replaced a planned additional half-day live in Boort, AOA CEO Michael Southan said



The program was delivered by award-winning producers Marlies and Peter Eicher of Salute Oliva, and international master miller Pablo Canamasas (right).

the positive feedback from attendees means it will likely be a permanent fixture.

"They found it really useful to get an overview of the process prior to the workshop – as one person put it 'getting pre-loaded with content'," Southan said.

"Others also said that it was really valuable to understand the science behind the process before they went to see the practical side.

"Information overload is always an issue with an intensive course like this, and it's hard for people to retain everything they learn at once, so it seems we've found a good solution now in the split program."

### Cobram Estate production tour

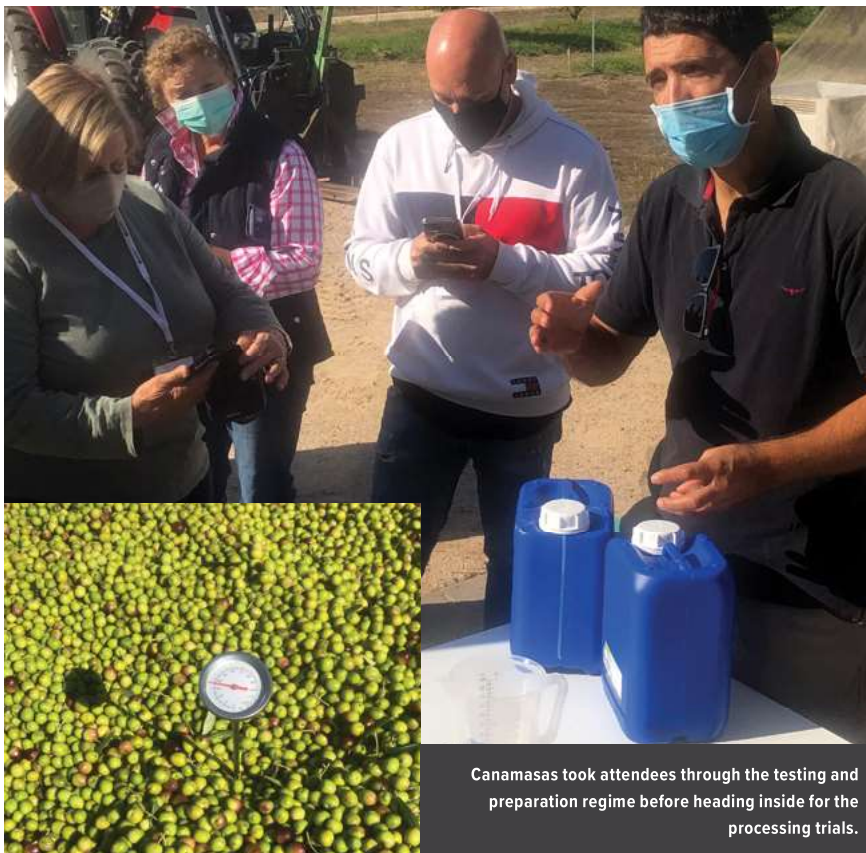
Also new this year was a morning tour of the Cobram Estate Olives Boort production facility on the first day of

the course. The tour was organised at short notice when Canamasas's flights were delayed en route, and the Cobram Estate team was happy to welcome the AOA's course participants for an up-close view of their state-of-the-art facility.

Like the pre-event webinar, the tour was a highly popular addition to the program, adding a large-scale perspective to the art of processing high-quality EVOO.

"Participant feedback was that it was great to see the magnitude of the Cobram operation, and particularly such a contrast to their own groves," Southan said.

"Many also noted the value of seeing the whole process on both a large and small scale across the two sites visited during the course, and to compare the two operations – as one producer put it, 'understanding the scale of what



Canamasas took attendees through the testing and preparation regime before heading inside for the processing trials.



Temperature monitoring is a crucial element at all stages of the harvesting and processing process.

was happening at Cobram, and the techniques that had been developed at Salute’.”

### Day 2 processing session

With the theory in hand, the second day moved into the hands-on processing session at Salute Oliva. Run jointly by Canamasas and the Eichers, it was once again a huge success, scoring 5/5 from all but one attendee (4/5).

“Feedback was that the opportunity to see how others are processing, and to see other equipment in operation, is really valuable – and especially being able to ask questions while it’s happening,” Southan said.

“They also found that seeing the practical application of the theory in a smaller operation cemented the learning, as did the trial showing the different outcomes from two varying processing regimes.

“And the field session in the Eicher’s grove provided fantastic insight into best practice grove management, with the pollarded older trees of particular interest.”

### Informing change

Southan said all attendees surveyed post-event said they learned new information from the workshop, and would be changing practices as a result.

“They gained a better understanding of tree care and grove management, and the importance of that aspect in the whole production process,” he said.

“In terms of the actual processing, they learned about adjusting pump speeds and oil outlet sizes, and particularly about the use of enzymes and talc, and the affect they have on both quality and yield.

“And they learned that no matter the size of the operation, the principles are the same.

“In terms of changing practices, tree pruning was the big one: they saw how imperative pruning is for fruit production, so there’s going to be plenty of chain-saw action in groves this year.

“And they were all keen to trial the different processing techniques, and implement the testing and monitoring regimes demonstrated in the course.

“Which is what the course is all about: providing the knowledge, along with practical examples, of what producers

### “Mind-boggling” learning

Mornington Peninsula producer Erin Summers has only recently entered the world of olives and attended the processing course as part of a big learning curve. She said she was blown away by both the information gained and the generosity of those involved - both presenters and attendees.

“I am new in this industry, so it was mind-boggling to learn from people who are experts in the field,” she said.

“At a personal level it was fantastic too: meeting new people in the industry, sharing experiences, and having people offering help and support.

“The knowledge and willingness to share research and studies from Pablo and Boundary Bend was amazing, and it was great seeing a small organic grove in action and how Marlies and Peter do everyday tasks. Their willingness to share and help teach was so motivational.

“I loved seeing the different types of processing equipment and how it works, learning the techniques and how to increase yield. There are lots of small things we can implement to help with processing.

“We’ll definitely be changing practices from this - our set up and storage tanks, using processing aids, and sending fruit, leaves and oil for lab testing.

“It’s a fabulous course and I learned so much. I am very thankful to everyone involved!”

can do in their own operations to improve both oil quality and quantity, and therefore the viability of their businesses.”

The AOA Processing Course will be held again in April 2023, with a similar program and schedule (COVID-dependent, of course!). Places are always limited, so if you haven’t attended yet, contact Liz Bouzoudis at [secretariat@australianolives.com.au](mailto:secretariat@australianolives.com.au) to reserve your place for this ‘must-do’ learning event.



## Information gold at Healthy Soils field days

**If the value of a learning session lies in the information gained, the AOA's Healthy Soils field days have been worth their weight in gold to Australian olive producers.**

Run as part of the levy project OL18000 - *Australian olive industry communications and extension program*, the series of seven Healthy Soils, Healthy and Productive Groves field days were held across the country between February 2021 and March 2022.

Presented by experts in various relevant fields, the program emphasised the crucial role which healthy soils play in producing healthy trees and lifting grove productivity. It also highlighted the importance of best practice grove management in ensuring soil health, and took participants through the practices and equipment available to improve their own soil.

### Final field day

After a prolonged hiatus due to COVID restrictions, the long-awaited final field day was held in late March at Parafield Olives, Yarragundry (just outside Wagga Wagga) in New South Wales.

Hosted with her renowned warmth and honesty by award-winning table olive producer Margie Carter, the comprehensive program covered a



wide range of topics, looking at olive growing literally from the ground up.

Grove management topics included monitoring grove temperature and soil moisture, managing heat and frost events (increasingly important in our fast-changing climate) and maintaining a productive canopy. These sessions were led by industry expert Andrew Taylor, who took participants through a hands-on demonstration of renovation pruning.

Soil and compost then took centre stage, with guru John Barton and NSW DPI scientist Bruno Holzapfel covering grove nutrition, inter-row management, mulching, soil carbon benefits, and soil and leaf sampling – all before lunch!

The afternoon then turned to

compost, with another hands-on demonstration, this time by John Barton, on making and using compost from grove organic waste.

Which led finally to a deep dive into the secrets of soil carbon, and the myriad benefits of increasing soil carbon in your grove.

### Inspired learning

Feedback from participants was once again enthusiastic, with most heading home to their groves with both inspiration and 'to do' lists. Comments included:

"The soil and compost session in particular has inspired me to do more, but I learned something from all of it."



## Golden rules of pruning

As a member of award-winning producers the Long Paddock Olive Rustlers, and the current AIOA Head Judge, Shane Cummins knows a lot about EVOO quality.

And one of the most significant things he took away from the AOA Healthy Soils Field Day was the crucial role which pruning plays in the health and productivity of olive groves, and the quality of the fruit - and therefore oil - produced.

It's a big topic, he told us, which was covered comprehensively on the day by presenter Andrew Taylor in his canopy management session. For those who haven't been able to attend one of the field days, Cummins broke it down into a set of practical "golden rules" to follow:

- the best time to prune is last year;
- if they weren't pruned last year, now is the time;
- not pruning is procrastinating - they have to be done, so just do it;
- prune no more than 30% (in any year):
  - » 30% provides reduction rejuvenation and fruit
  - » over 30% results in regenerative shock at the expense of fruit;
- if you prune one tree harder, prune the rest of the row at 25%;
- lay cuttings sideways in rows to be flogged by a flail mower;
- (buy a flail mower!);
- lay cuttings in bundles to assess 30%;
- remove firewood from cuttings as you work; sell or use the firewood;

- clear a single trunk to a metre, which provides:
  - » harvesting efficiency for trunk shakers, and clear access for nets and hand equipment;
  - » frost protection, allowing frost to flow not settle;
- suckers are not an issue and should only be addressed by sheep:
  - » sheep are a great environmentally-friendly addition to a grove, providing grass, weed and sucker control, and fertiliser;
  - » for those hand-harvesting into nets, sheep should be removed several months before harvest to reduce the risk of contamination of fruit.

The end result you're working towards, Taylor says, is six-year-old wood with an open canopy, providing fresh, vital growth for fruiting and a readily shakeable tree which is more resistant to disease.

*Presenter Andrew Taylor: currently grove manager for SA producer Pendleton Estate, Taylor has more than 25 years' experience in olive growing and grove management across New Zealand, and more recently in Australia.*

*His focus is on improving olive grove production and fruit yields for consistency and volume, using management practices to achieve high yields consistently. Pruning of groves to suit tree shaking mechanical harvesting is another specialty - honed during his time as a contract harvester on NZ's north island.*



“Wow, the learning never ends. I’ll be changing my practices – especially around the myth that your grove needs to look neat. John and Andrew showed that you should encourage grass to grow up in your grove to maximise carbon gain back into the soil, while also keeping soil cool and encouraging microbial activity in the soil.”

“It sharpened my focus on pruning and returned my interest in compost.

“I learned a lot of new information, in particular from Andrew on reading your tree and pruning - don’t do rote practices. Will I be changing practices? Yes, I’ll prune!”

And our favourite:

“I have a lot to learn from a very learned lot.”

**Associated resources**

While the Healthy Soils field day program has finished, there is a wealth of resources available on the OliveBiz website covering topics discussed at the events.

Of particular relevance is a series of Grove Management Videos on topics including Weather stations, remote sensing and automation; Principles of canopy management/tree pruning; and Making compost. Go to [www.olivebiz.com.au](http://www.olivebiz.com.au) – Projects – Comms Project – Grove Management Videos.



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 This project was funded by Hort Innovation using the olive research and development levy, with co-investment from the Australian Olive Association and contributions from the Australian Government.

# Diabetes and Alzheimers the focus of 2022 Olive Wellness Institute Grants

The world of olive science is an increasingly exciting one and this year saw a wealth of high-calibre applications for the annual Olive Wellness Institute Research Grant.

The projects in contention were so good, in fact, that the OWI's advisory panel decided to fund two of the applicants for the 2022 program, providing grants to research projects being undertaken by Professor Amal Kaddoumi and Associate Professor Matthew Leach.

## A/Prof Matthew Leach: olive leaf extract and diabetes

A naturopath and registered nurse for over 13 years, Associate Professor Matthew Leach has extensive experience in the management of diabetes. In more than 20 years as a clinical trialist, he has had a leading role on multiple diabetes-related projects.

A/Prof Leach has published 154 refereed journal articles, 12 book chapters and a sole-authored textbook. His work has been cited over 3,860 times, and has had policy, education, research and practice impact.

A/Prof Leach is undertaking the research project *Efficacy and safety of olive leaf extract for glycaemic control in adults with type 2 diabetes mellitus (ESOLED): a pilot randomised controlled trial*.

Diabetes Mellitus affects an estimated 451 million adults worldwide, and costs health systems US\$850 billion annually, making it an incredibly important area.

The ESOLEED project is a six-month clinical study which will explore whether olive leaf extract (OLE) is safe and effective at improving blood glucose control, and quality of life, in adults living with type 2 diabetes. If OLE is shown to be a suitable treatment for diabetes, it may help support individuals living with the condition to reach their blood glucose targets, and in turn, help reduce the impact of diabetes on their lives.



Professor Amal Kaddoumi



Associate Professor Matthew Leach

## Prof Amal Kaddoumi: EVOO and Alzheimer's

Professor Amal Kaddoumi is a Professor in the Department of Drug Discovery and Development at Auburn University's Harrison School of Pharmacy. Her research interest is experimental therapeutics, including drugs discovery and development, identification of novel therapeutic targets and translational research, devoted to finding therapies for neurodegenerative diseases with a focus on Alzheimer's disease (AD) and cerebral amyloid angiopathy.

Alzheimer's disease is a progressive neurodegenerative disorder of the elderly that afflicts about 30 million patients globally. Despite the considerable research effort already undertaken on prevention, treatment and cure for the disease, effective strategies remain lacking.

Previous studies from Professor Kaddoumi's lab have investigated



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the effect of extra virgin olive oil on Alzheimer's disease in mice, and found improvements in cognitive function. The Olive Wellness Institute Research Grant funding will go towards testing the performance of extra virgin olive oil in humans with mild cognitive impairment (MCI), testing the hypothesis that Extra virgin olive oil prevents Mild Cognitive Impairment conversion to Alzheimer's Disease.

The OWI's Sian Armstrong said the decision to award the two grants this year reflects the importance the Institute places in furthering the pool of evidence related to olive science. "We are excited to see projects on both olive leaf extract and extra virgin olive oil being undertaken by these highly respected researchers, and thrilled to be able to support their work through our Research Grant program.

"We look forward to seeing the outcomes of these exciting research projects, and to sharing the results with the olive industry – and the world!"

## About the OWI Research Grant

First awarded in 2021, the annual Olive Wellness Institute Research Grant is open to researchers whose work focuses on improving knowledge, education and/or information related to olive science.

It supports the OWI's aim of increasing awareness of EVOO and other olive tree products by gathering, sharing and promoting expert, credible and evidence-based information on their nutrition, health and wellness benefits.

Each grant provides AUD \$14,000 towards the applicant's specified research project.

For more information on the OWI Research Grant program, and to access a wealth of existing olive-related research, go to [www.olivewellnessinstitute.org](http://www.olivewellnessinstitute.org).

# 2020/2021 horticulture statistics now available

The latest edition of the **Australian Horticulture Statistics Handbook** is now available, providing contemporary data across the Australian horticulture industry for the year ending June 2021.

## Overall horticulture figures 2020/21

The horticulture sector overall exceeded \$15.2 billion in production value in 2020/21, with mixed performance across the various commodity groups. Improved seasonal conditions supported production volume growth of 1.5%.

The majority of value growth was contributed by amenity horticulture (turf and nursery), with marginal value growth recorded across fruit. The value of fruit was stronger than the previous year, however, thanks to a rise in olive production (\$99 million), avocados (\$56 million), cherries (\$47 million) and apples (\$41 million).

Victoria remains the largest driver state by far, with 46% of total export value, while Queensland was second with 16% of export value.

## Total production

Total production across all horticultural products in 2020-2021 was 6,629,506 tonnes (T). Fruit accounted for well over a third of that figure at 2,542,439T. Of that, olives (130,000T) had the sixth largest production level, after oranges (473,697T), bananas (402,982T), apples (280,273T), table grapes (198,389T) and mandarins (163,499T).

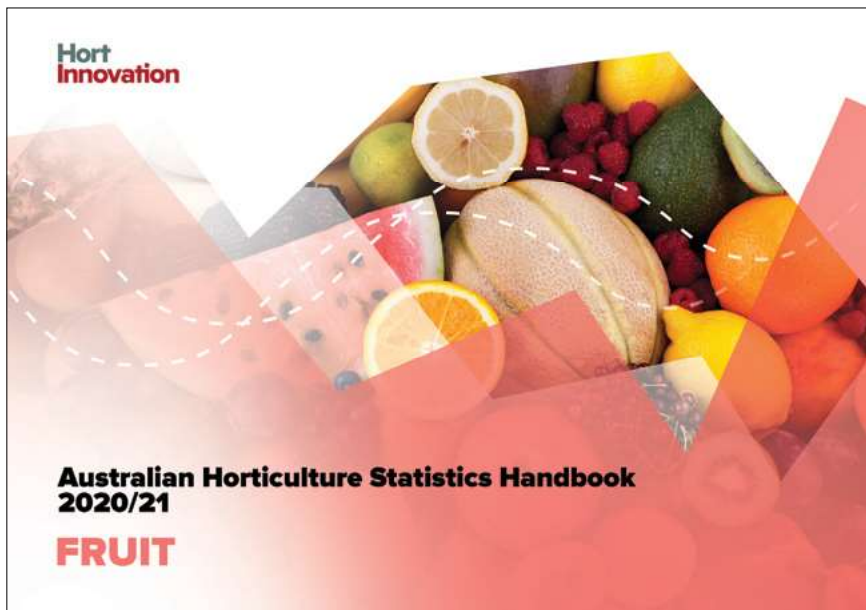
## Total value

Total value of all horticultural products in 2020-2021 was \$15,236.6 million (M), with fruit again accounting for more than a third of that amount at \$5,752.1M.

The production value of olives (raw fruit) was \$161.2M, ranking the industry at 12th highest in the fruit category.

## Total exports

Australia exported \$2.65B worth of horticultural products, with fresh fruit the largest value export grouping at \$1,216.4M. Processed



fruit accounted for \$154.7M of the total, including olives and olive oil at \$23.1M, the second-largest product in this category after dried grapes and grape juice (\$40.8M).

## Total imports

Australia imported \$3.03 billion worth of horticultural products. Processed fruit was the largest value import grouping at \$1,111.7M, including olives and olive oil valued at \$244.2M.

## Fruit category statistics

The handbook covers four industry category sections - Vegetables, Fruit (including olives) Nuts, and Other horticulture. However, many of the relevant comparative data tables for the Fruit section (imports and exports, supply volume, supply wholesale value etc) cover fresh horticultural produce only and therefore do not include olives.

## Olives Overview

The final four pages of the Fruit section are the Olives Overview, providing a snapshot of Australian olive industry for the 2020/2021 year. Key statistics include:

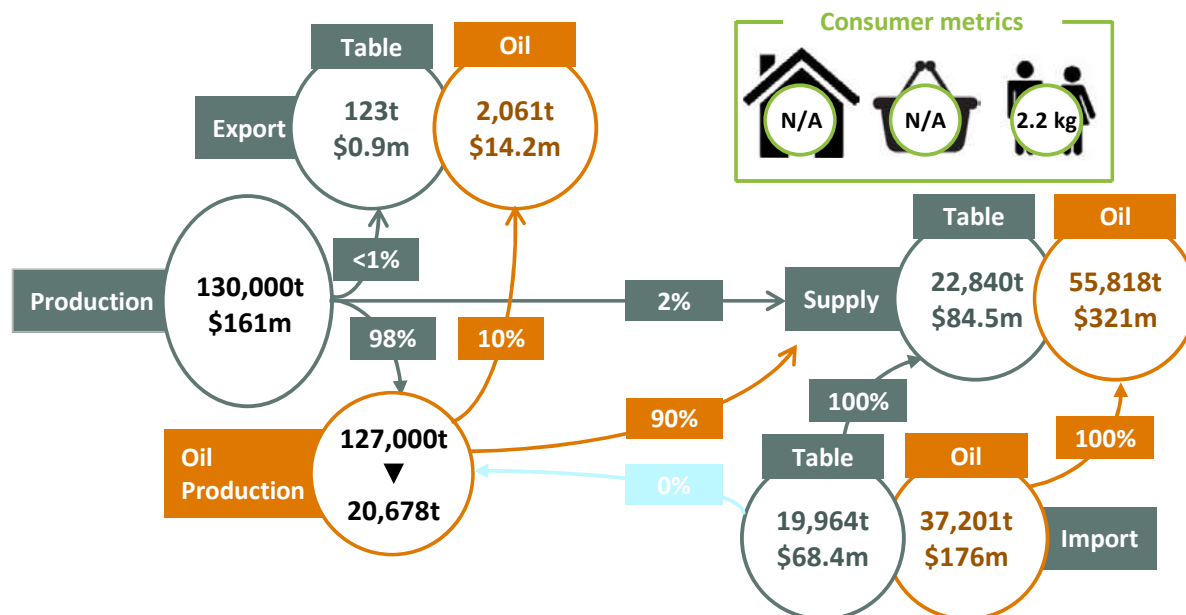
- state-by-state production for the year was virtually unchanged from that of 2019/2020, with Victoria at 69%, South Australia 11%, WA 10% (11% in 2019/2020) New South Wales 9%, Queensland 1% and Tasmania <1%;

- this year saw a small change in the production area recorded, increasing by 3% from 20,568 ha to 21,250 ha;
- production increased by 260% on 2020 figures, from 50,000T to 130,000T, a dramatic contrast to last year's 60% decrease from 125,000T in the 2018/2019 year;
- production value also increased dramatically, up from \$M62 in 2019/2020 to \$M161.2 in 2021/2022 (\$M155 in 2018/2019);
- around 98% or 127,000T of fruit was extracted for oil, producing 20,678T (equivalent to 22.8M litres) of olive oil; again, a huge increase from 8,662T/9.17M in 2019/2020 and a small increase from the 19,736T/21.6M litres produced in 2018/2019);
- the remaining 2-3% of fruit was used for table olive production, almost all for the domestic market;
- the wholesale value of oil produced was \$320.6M, a substantial increase from \$M224 in 2019/2020 and minimally down from \$M324 in 2018/019;
- consumption of olive oil per capita, based on volume supplied, was 2.17kg, almost 30% higher than in 2019/2020 and slightly higher than 2.1kg in 2018/2019.

Note: no figures or information are provided for table olives.

# Olive Oil/Table Olive Supply Chain—Year Ending June 2021

Sources: Australian Olive Association (AOA); GTA; MP & DD (Freshlogic Analysis)



## Olive oil international trade

The international trade figures for 2020/2021 saw a reversal of the previous year's more positive trend, particularly in regard to exports from Australia:

- 2,061T of olive oil was exported, down by 23% on the 2019/2020 figure of 2,681T and also a decrease from the 2018/2019 figure of 2,304T.
- consequently the value of olive oil exports decreased by 25%, from \$18.8 in 2019/2020 to \$14.2M in 2020/2021;
- olive oil imports also increased by 2% to 37,201 from 36,467T in 2019/2020, marking a three-year trend of increasing imports since the 2017/2018 trade year;
- interestingly, the increase in olive oil imports was accompanied by a 3% decrease in import value, down from \$178.8M in 2019/2020 to \$175.8M in 2020/2021.

Note: no figures or information are provided for table olives in this section of the 2020/2021 Handbook.

Year Ending June	2019	2020		2021	
	Value	Value	% YoY	Value	% YoY
Production (t)	125,000	50,000	-60%	130,000	>100%
Production (\$m)	\$ 155.0	\$ 62.0	-60%	\$ 161.2	>100%
Production area (Ha)	20,568	20,568	-	21,250	+3%
Olive Oil Export Volume (t)	2,304	2,681	+16%	2,061	-23%
Olive Oil Export Value (\$m)	\$ 16.1	\$ 18.8	+17%	\$ 14.2	-25%
Olive Oil Import Volume (t)	33,274	36,467	+10%	37,201	+2%
Olive Oil Import Value (\$m)	\$ 185.0	\$ 181.8	-2%	\$ 175.8	-3%
Olive Oil Supply (t)	50,707	42,448	-16%	55,818	+31%
Olive Oil Wholesale Value (\$m)	\$ 324.3	\$ 224.6	-31%	\$ 320.6	+43%
Oil Consumption per Capita (kg)	2.01	1.65	-18%	2.17	+32%

Sources: AOA; GTA; MP & DD (Freshlogic Analysis)

## About the Handbook

Published annually by Hort Innovation, the Hort Statistics Handbook offers production and trade data on more than 75 horticultural products including fruit, nuts, vegetables, nursery, turf and cut flowers.

It captures the previous financial year's data, drawn from supply chain sources including international trade statistics and industry peak bodies. It includes information on retail and food service use, exports and imports, share of production by State and Territory, wholesale value, and volume. The information available varies depending on the product and availability of relevant data.

## Search online or download

The handbook is now published as an interactive online dashboard enabling search functionality and user preferences, replacing the original hard copy format. Much of the data is also available as separate downloadable PDF documents covering the four category sections, with olives included in Fruit.

Both versions are available at [www.horticulture.com.au/hortstats](http://www.horticulture.com.au/hortstats).

The Australian Horticulture Statistics Handbook 2020-21 was produced by the across-industry levy investment project *Australian Horticulture Statistics Handbook 2018-19 to 2020-21* (HA18002).