

## **Final Report**

# **Australian Horticultural Statistics Handbook**

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MT21006

**Project:**

Australian Horticultural Statistics Handbook (MT21006)

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## Public summary

The Australian Horticulture Statistics Handbook has delivered statistics with associated commentary for the 9 years ending 30 June 2021. This project extends these statistics a further 3 years to the year ending 30 June 2024, and when completed will make available a 12-year timeseries of Horticultural Statistics information. The Handbook provides definitions, information on how to use the statistics, research method and sources.

The statistics information covers production, supply chain, international trade, distribution channels and consumption. It includes details of imports and exports by region and by state, as well as summary tables of production value and volume, trade value and volume, fresh supply volume, retail and foodservice value and volume, and wholesale value by category.

The statistics are assembled in a common format to enable comparison across categories and the summation of totals. In addition to the detail of the statistics for 75 individual horticultural categories across fruit, vegetables, nuts and other horticulture, the statistics also provide 9 category group overviews including, but not limited to, berries, citrus, summerfruit and herbs.

The process to define statistics involves engagement with industry representatives in 75 horticultural categories in conjunction with the gathering and analysis of all relevant and available supply chain data. This project will deliver annual statistics that extends the detail provided of the previous 3 years and with the addition of Protected Cropping System (PCS) and state level production volumes and values. This year, the Handbook project will compile its tenth year of annual data for the year ending 30 June 2024. There has been a series of stepped additions and enhancements over the 10 years of project delivery, including the addition in 2019 of an online version that is hosted in Tableau and published on the Hort Innovation website. This year includes a revision of the Nuts supply chain diagram with industry consultation.

## Keywords

Horticultural Statistics; Production volume and values; Import and export volume and values; Fresh market volume and value; Retail market volume and value; Food Service market volume and value; Supply per capita; Category household penetration; Protected Cropping; Mapping.

## Introduction

The Hort Stats Handbook in the current form commenced in 2015 to address the need for a more comprehensive set of Australian Hort Statistics. Versions of Hort Stats handbooks had been produced in various forms over the previous 15 years, but these publications had drawn on existing published data, were typically compiled some years after the period in review and had not gained widespread support.

This project was designed to address all horticultural categories, encompass a fuller set of data that produced more detailed and complete outputs in faster timeframes. This rationale was that this combination of changes and improvements would deliver more accurate, commercially relevant outputs and earn wider ongoing support.

The scope of the Hort Stats Handbook was expanded to include 75 individual product categories. In HA18002 a system for online delivery was developed and implemented and more detail was provided on category volumes and values into Retail and Food Service distribution channels.

All indications that these goals have been achieved is now reflected in wider industry support, increasing distribution and use of statistical data in commercial and industry level planning and analysis

## Methodology

Freshlogic has developed specialised methods designed to combine all conventional data sources and address information gaps. They are anchored on:

- An information gathering process that collects supply chain data from a wide range of market participants, who willingly share data on the condition of individual enterprise data confidentiality, and to gain access to the sum of the total.
- A THRUchain market modelling framework that by design accommodates and assembles available data into a market modeling framework that delivers accuracy by aligning total supply with distribution channel volumes.

The various types and levels of data were gathered and transformed as follows.

### *Production and supply chain*

Information on the production end and flows through the supply chain to the market will be compiled for this project using relevant data from ABS data, horticulture industry levies, Australian customs import/export data, wholesale market pricing and volume data industry tracking, previous research and consultation with key stakeholders from all parts of the supply chain, including industry representative bodies. Freshlogic considered data available to Hort Innovation through projects (e.g. MT14006 – Export-import market intelligence project 2014-2016 and R&D projects with production and crop forecasting information).

### *Consumption*

Market information from the consumption end of the supply chain is a critical component and this was gathered through three research and analysis tools designed for this purpose by Freshlogic. They are.

- The Mealpulse™ consumer panel, which provides a nationally representative sample of domestic consumers and allows tracking and analysis of the food buying habits of Australian households. This research capacity allows the tracking of food at home and out of home, providing the key metrics of household penetration and number of shopping trips. This panel is in ongoing operation by Freshlogic and collects the detail of 15,000 complete household food shopping weeks per year (the panel includes over 2,000 households with responses gathered from 1,250 distinct households each month to generate 15,000 complete weeks of household food shopping annually).
- DocketData is generated from the retail food receipts of Mealpulse™ consumer panelists. It is extracted with in-house software to deliver the product-level detail of retail trip food purchases. This approach allows the capture of product-level detail with no margin for respondent error. This capacity will provide the data on quantity purchased and price paid at retail. This will be confirmed and reconciled with other suitable market and consumer data available to Hort Innovation, such as previous research and retail sales information.
- Production and consumption data is consolidated via the THRUChain market model and the volumes and values going into Retail and Food Service channels were defined.

Category level outputs were confirmed with Industry Representative Bodies (IRBs) to ensure completeness and data coverage. Revisions were made based on IRB feedback and feedback from Hort Innovation, provide any impact on volumes and values reconciled with project outputs. In the situation where additional data became visible and that data justified a change to the valuation basis, unit price of a product etc., revisions were adapted and noted in subsequent editions.

### *Horticultural categories*

The following horticultural categories were covered in the Handbook. Categories were organised into five groups. Where categories have sub-groups, such as summerfruit and citrus, the sub-groups were covered individually as well as the sum of the total. Horticultural commodities with a statutory levy or which have funded VC projects in the past are the focus of the Handbook.

Fruit:

Apples; Avocados; Bananas; Blueberries; Canning Fruit; Cherries; Custard Apples; Dried Grapes; Dried Tree Fruit; Prunes; Grapefruit; Kiwifruit; Lemons; Limes; Lychees; Mandarins; Mangoes; Melons (Watermelons, Rockmelons, Honeydew Melons); Nashis; Oranges; Olives; Passionfruit; Papaya/Pawpaw; Pineapples; Pears; Persimmons; Rubus (Blackberries, Raspberries); Summerfruit (Apricots, Nectarines, Peaches, Plums); Strawberries; Table Grapes.

Vegetables:

Artichokes; Asian vegetables; Asparagus; Beans; Beetroot; Broccoli; Baby Broccoli; Brussels Sprouts; Cabbage; Capsicums; Carrots; Cauliflower; Celery; Chillies; Cucumbers; Eggplant;; Fennel; Fresh Herbs; Garlic; Ginger; English Spinach/Kale/Silverbeet; Leafy Salad; Leeks; Lettuce; Mushrooms; Onions; Parsley; Parsnips; Peas (Green Peas; Sugar Snaps; Snow Peas) Potatoes (fresh and processing); Pumpkins; Radishes;; Sweet Corn; Sweet Potatoes; Tomatoes (fresh and processing);; Zucchini.

Nuts:

Almonds; Chestnuts; Hazelnuts; Macadamias; Pecans; Pistachios; Walnuts.

Amenity/Extractive:

Cut Flowers; Nursery; Turf.

### *Handbook design*

The design of the Horticulture Statistics Handbook was proposed and approved by Hort Innovation. Outputs were produced in PDF print ready form and during the online delivery option was developed and designed approved by Hort Innovation before implementation. Sample pages and extracts from the latest PDF and online version are in the Outputs section of this final report.

## Outputs

This project produced an annual statistics handbook covering a range of fruit, vegetable, nut, amenity and extractive crops. Each annual handbook completed for the three years address the most recent financial year ending 30<sup>th</sup> June and included data from the two previous years for the sake of comparison. The handbook document was provided in print-ready PDF form. In this form it enabled users to print information on one category or navigate straight to their category on the Hort Innovation website.

Nuts categories were extensively reviewed and align much closer to industry view of the category.

This project MT21006 developed and implemented a system for online delivery of the Hort Stats Handbook. This system harnesses Tableau software and enabled a searchable version of the Hort Stats Handbook to be imbedded into the Hort Innovation website.

Project MT21006 provided more detail on the fresh market by breaking out the volumes and values for the retail and food service distribution channels.

Each edition of the Handbook was accompanied by summary overview content and totals at group levels. A sample of the current opening and second PDF page for the Apple category and is inserted below

### Output summary

A summary of Handbook publication are as follows:

- 2021/22 Handbook
- 2022/23 Handbook
- 2023/24 Handbook
- Hort Innovation Australia Tableau Embed

Examples of the project Online and PDF outputs are inserted below as Figures 1,2 & 3.

Figure 1 Hort Stats Online Example - All Fruit



Figure 2 Hort Stats PDF Example - Apple 1st page

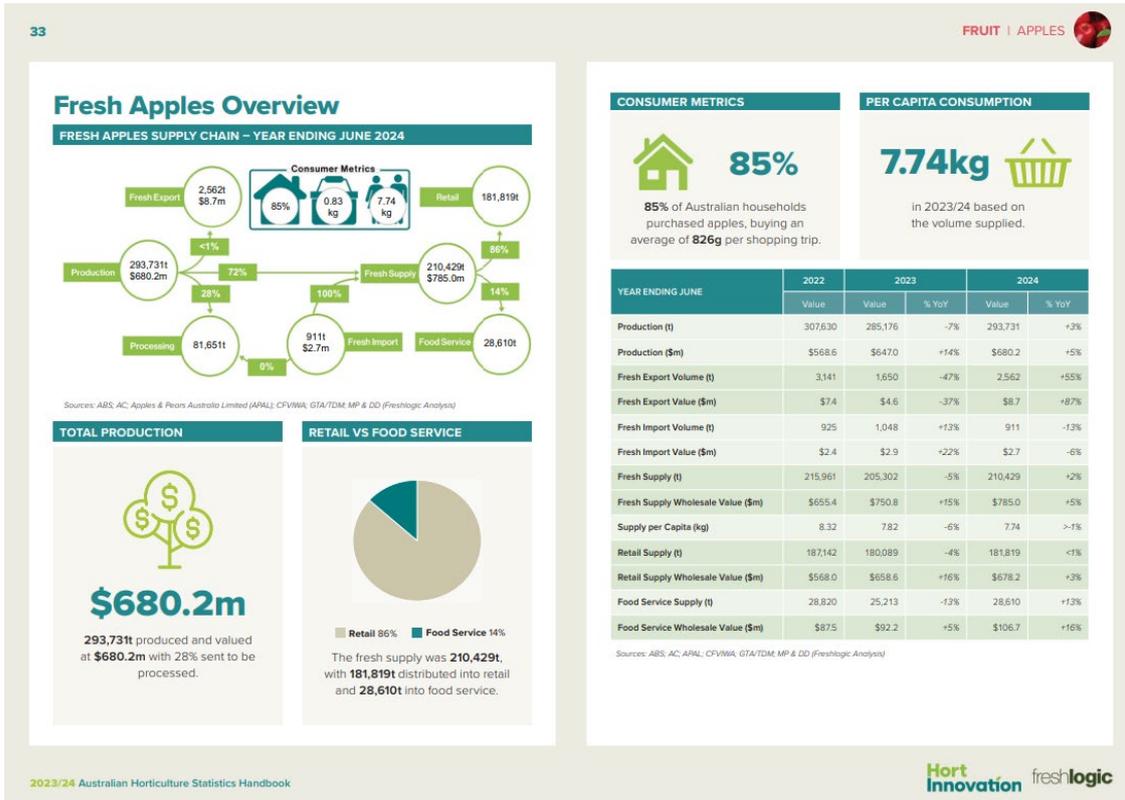
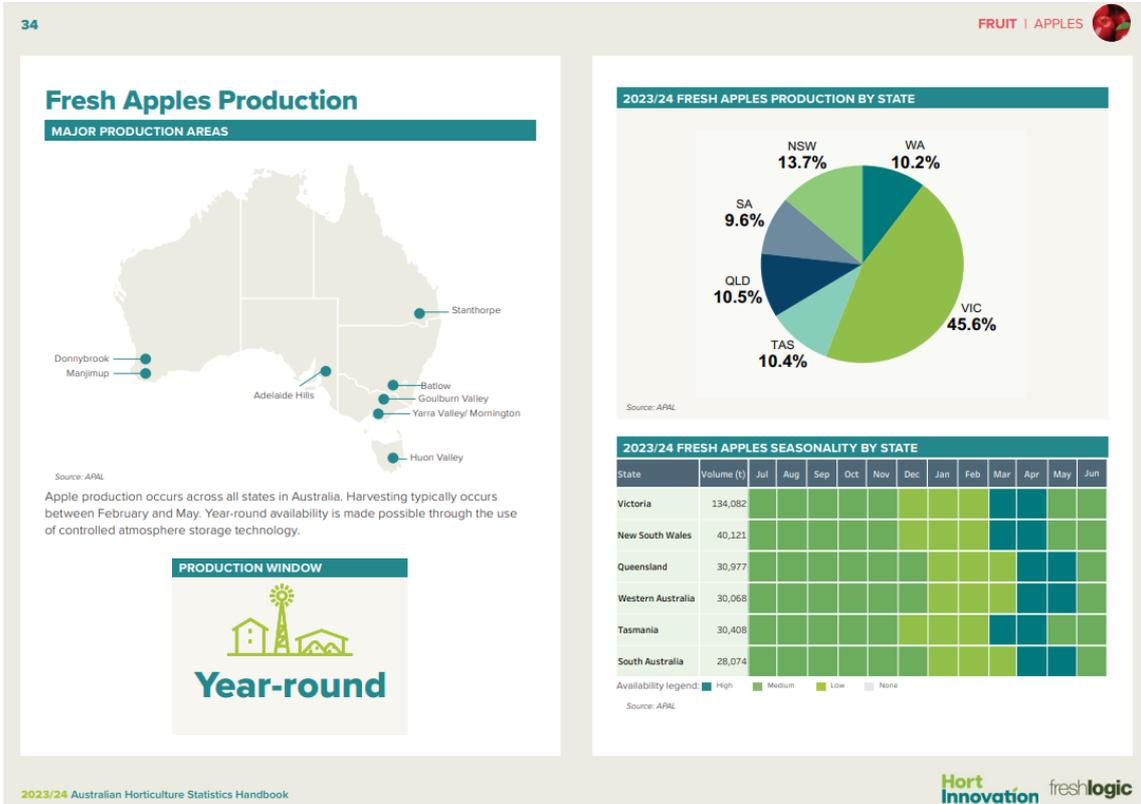


Figure 3 Hort Stats PDF Example - Apple 2nd page



The following information outputs for each of the categories was covered in each Handbook, subject to availability of data. The source data for each output is detailed below.

- Marketed production – The volume of production that left the farm gate. Source: Freshlogic THRUchain modelling, stakeholder consultation.
- Production value – The marketed production value less the marketing cost. Source: Freshlogic THRUchain modelling, wholesale market pricing, stakeholder consultation.
- Total fresh supply – The volume and wholesale value of marketed production and imported product that was made available to the retail and foodservice sectors. Source: Freshlogic THRUchain modelling, stakeholder consultation.
- Supply to Retail Channel - The volume of marketed production and imported product that was made available to the retail distribution channel. Source: Freshlogic THRUchain modelling, stakeholder consultation.
- Supply to the Food Service Distribution Channel - The volume of marketed production and imported product that was made available to the foodservice distribution channel. Source: Freshlogic THRUchain modelling, stakeholder consultation.
- Volume to processing – The volume of marketed production that was used in processing. Source: stakeholder consultation.
- Exports and imports – The volume and value of marketed production that was exported overseas, or imported into Australia. Five-year summary of Australia's imports and exports of the product, showing movement in net trade, as well as the volume and value of the top three export countries for that year. Source: import/export data supplied through IHS (GTIS).
- Seasonality and volume by region – A table profiling the total volume of marketed production produced by each major growing region, as well the monthly seasonality of production for that growing region. Source: stakeholder consultation.
- Hectares planted – The farm area devoted to growing the product in Australia over the relevant year. Source: Freshlogic THRUchain modelling, stakeholder consultation, ABS data.
- Quantity purchased per shopping trip (not applicable to amenity and extractive crops) – The average quantity of product purchased by consumers on each retail shopping trip during the year. Source: Mealpulse™ consumer panel DocketData™.
- Household penetration (not applicable to amenity and extractive crops) – The percentage of households that regularly purchased the product over the year. Source: Mealpulse™ consumer panel DocketData™.
- Supply per capita consumption – Volume of marketed product consumed by the total population based on volume supplied. Source: Freshlogic THRUchain modelling and Mealpulse™ consumer panel
- Key measures table – A three-year summary covering this year, last year and the year before for: hectares planted, marketed production, GVP, wholesale value and per capita consumption.
- Industry trends commentary – A concise snapshot of relevant trends at an across industry summary level and, where appropriate and warranted, at a product level.

All sources of data were appropriately referenced.

## Outcomes

Project outcomes are centered on better informing industry stakeholders and enabling investment decisions.

This project has supported a greater level of understanding of the current size and state of the Australian horticulture industry. This data has supported planning R&D and marketing projects, identifying gaps in industry data and benchmarking trends. The inclusion of Hort Stats Handbook outputs in all Hort Innovation industry strategic investment plans (SIP) is a positive indicator of adoption and use in investment decisions. The Handbook has also been used by relevant Federal and State Government departments to support their understanding of the sector.

The project has provided longitudinal data, enabling trends to be identified. The Handbook has also been used to communicate the value and importance of Australian horticulture to agriculture and the Australian economy.

## Monitoring and evaluation

The monitoring and evaluation of the project outputs is centered upon:

- a) The support from industry participants and stakeholders for the Hort Stats Handbook.
- b) The scale of distribution of the Hort Stats Handbooks.
- c) The use of the Hort Stat Handbook data and insights.

The support is reflected in the continued willingness of all participants to share data and validate product conclusions. The feedback gathered in undertaking the project indicates the consolidation of Hort Stats into one annual publication is increasingly welcomed.

The distribution of the Handbooks is directly reflected in the level of website traffic as this is the sole means of distribution. Website traffic data from Hort Innovation indicates the pages that provide access to the Hort Stats Handbook are highly frequented pages on the website and have increased traffic when new editions are made available.

The use of data from the Hort Stats Handbook in commercial and academic analysis as the basis for key analysis platforms like; category size, growth patterns and distribution channel share are now widespread. Industry level SIP plans and forecasts are now all referencing the Hort Stats data.

## Recommendations

- A fuller profile of export market status and category performance by profiling:
  - 3-year volume, value and price trends for the sum of export markets supplied,
  - Australian category share and share patterns vs southern hemisphere export competitors into same markets.
- Category specific Hort Stat embed inserts made available to PIB's websites with capacity to host other data or industry projects and redirect to HIA website. (E.g. Apples Tableau Public)
- Profiling of category monthly seasonal supply windows by origin. E.g. QLD citrus during summer vs NSW/VIC during autumn winter etc.

## Intellectual property

This project successfully developed and enabled the publishing of the specified outputs. There is no project IP, project outputs, commercialisation, or confidentiality issues to report.

## Acknowledgements

Several Hort Innovation funded projects have provided data outputs which have informed the information provided in this handbook. The projects drawn on for the year ending 30 June 2021 of the Handbook are listed in the table below.

<b>AP16002 (Apple/Pear)</b>	<i>Apple and Pear Crop Estimate</i>
<b>AV22016 (Avocado)</b>	<i>Avocado industry and market data capture and analysis</i>
<b>CT18002 (Citrus)</b>	<i>Citrus Market Development; Market Access and Quality</i>
<b>CU15000 (Custard Apple)</b>	<i>Custard Apple Dispatch System 2—CADS 2</i>
<b>MC22001 (Macadamias)</b>	<i>Macadamia Crop Forecasting 2023-2025</i>
<b>MG17000 (Mangoes)</b>	<i>Building best management practice capacity for the Australian mango industry</i>
<b>MU23003 (Mushrooms)</b>	<i>Mushroom Category Snapshot</i>
<b>MT15031 (Dried Grapes)</b>	<i>Australian Dried Fruit Communications Program</i>
<b>NY21000 (Nursery)</b>	<i>Nursery Industry Statistics 2020/21 to 2024/25</i>
<b>OL16001 (Olives)</b>	<i>Australian Olive Industry Benchmarking Program</i>
<b>PP20003 (Papaya/Paw Paw)</b>	<i>Papaya market supply data capture and analysis</i>
<b>PI17001 (Pineapples)</b>	<i>Pineapple integrated crop protection program</i>
<b>TU21000 (Turf)</b>	<i>Turf industry statistics 2020/21 to 2024/25</i>
<b>TM17000 (Tomatoes)</b>	<i>Processing Tomato Industry capacity building</i>
<b>VG15077 (Vegetables)</b>	<i>Financial Performance of Australian Vegetable farms 2016-2017 to 2018-2019</i>