Horticulture Innovation Australia

Final Report

Delivering a National Citrus Plantings Database-2014

Nathan Hancock
Citrus Australia Limited

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CT14014

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Tel: (02) 8295 2300
Fax: (02) 8295 2399

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Summary

The Australian citrus industry is one of Australia's largest horticulture industries, with commercial production in five States and one territory. The citrus industry is one of Australia's largest fresh produce exporters, exporting on average 160,000 tonnes per year, over the last ten years. While the industry's size and output is significant in Australia, it comprises less than 0.5% of global production and is one of the highest cost producers in the world, relying on its reputation for quality and safety to command premium prices in high paying export markets. The industry is currently in a buoyant phase, demand from China, Hong Kong and Japan has been strong, the exchange rate is low and growing conditions have been favourable. These variables can change quickly as experience has shown. Longer term issues may arise if the industries plantings do not reflect changes in consumer demand. Communication between the growing and marketing sectors benefits from timely accurate data, allowing long term strategic plans to be developed to match production to market requirements.

This project resourced a Manager of Market Information (0.2FTE) who facilitated the development of an online database, which collected and collated plantings data from Australian citrus growers. The objectives of the project were to:

- build an online system to collect and collate the individual plantings data of all citrus growers in Australia
- produce a national plantings report in 2014, in the first instance, and then subsequent plantings reports each year

The online system was named the Citrus Tree Census and was promoted to industry to raise awareness prior to the census opening. Data collected included:

- business details
- variety
- rootstock
- tree age
- rework age
- row and tree spacing
- number of trees
- number of hectares

Highlights from the report include:

- national plantings statistics by region
- national plantings statistics by category, subcategory and variety
- national and regional tree age statistics
- national and regional variety lists

This project delivered plantings information that will assist businesses and industry stakeholders to:

- develop short and long-term crop forecasts
- make informed decisions on future planting, top-working and tree removal choices
- improve planning for logistical requirements throughout the supply chain at a regional and national level

- develop future market directions in domestic, export and juicing sectors

Information collected through the Citrus Tree Census has been used:

- to complete the Australian Citrus Tree Census 2014 report
- produce a Citrus Production Outlook 2016 – 2025 report through linkages with CT13002 and CT13037
- provide information for presentations given in regional and national settings to industry stakeholders
- form the basis of an online export application system developed to assist industry and the Australian Government to register citrus pack-houses and orchards for export to markets such as the United States of America, Japan, New Zealand, Korea, China, Thailand and Taiwan
- an improved contacts database for Australian citrus growers

Recommendations for future work includes:

1. The Citrus Tree Census online database is a resource that it is valued by industry and has contributed significantly to improving efficiencies in export market applications. Hort Innovation should continue to prioritise funding of the tree census database.

2. CT14010 was a stand-alone project in 2014; it is recommended that the management and improvement of the database come under the market development project as an ongoing responsibility of the Manager of Market Information and Quality.

Keywords

Citrus industry; market development; market access; market intelligence; citrus plantings; citrus statistics; citrus variety.

Introduction

The Australian citrus industry is one of Australia's largest horticulture industries, with commercial production in five States and one territory. The citrus industry is one of Australia's largest fresh produce exporters, exporting on average 160,000 tonnes per year, over the last ten years. While the industry's size and output is significant in Australia, it comprises less than 0.5% of global production and is one of the highest cost producers in the world, relying on its reputation for quality and safety to command premium prices in high paying export markets. The industry is currently in a buoyant phase; demand from China, Hong Kong and Japan has been strong, the exchange rate is low, and growing conditions have been favourable. These variables can change quickly as experience has shown. Longer term issues may arise if the industries plantings do not reflect changes in consumer demand. Communication between the growing and marketing sectors benefits from timely accurate data, allowing long term strategic plans to be developed to match production to market requirements.

This project delivered a key element of HAL project CT13037 *Delivering robust citrus market information for a more competitive industry* and continued the goals and activities of CT10035 *Citrus National Plantings Database - 2011 update,* which in turn was based on the 2003 and 2008 national plantings database (NPD) projects (CT02033 and CT07055). This project had strong linkages to CT13022 *Driving citrus industry success through a coordinated market development program – Stage 2.* The project operated from 1 July 2014 to 31 December 2015.

The Australian Citrus Strategic R&D Plan 2010-2017 (Horticulture Australia Ltd, Citrus Australia Ltd 2011) identified four Objectives & Key Strategy Areas.

Objective 1: Develop and Maintain Market Opportunities

Objective 2: Increase Product Value

Objective 3: Improve Efficiency and Sustainability

Objective 4: Provide a Supportive Operating Environment

CT14010 specifically addressed Objective 1: Develop & Maintain Market Opportunities. The project addressed the following strategies, outputs and key performance indicators under Objective 1:

Strategies

- *Provide supporting data and resolve technical export market access issues*
- *Provide supporting data and resolve technical domestic market access issues*
- *Collect & analyse ongoing production and market information to support decision making*
- *Identify, prioritise & develop new market opportunities*
- *Drive citrus consumption through targeted consumer research, evaluation and value chain engagement*

Outputs

- *Market information reports; market intelligence & scan data, market trends & consumer preferences, competitor analysis & market research reports*
- *Market development plans*

Key Performance Indicator

Market information - install a market intelligence reporting system which provides:

- *3-yearly reports of plantings, long-term forecasting & consumer trends*
- *Yearly reports of crop forecasts, end of season volumes & marketing campaign evaluation*
- *Weekly reports of market dispatch & harvest rate*

Previous NPD reports were the collation of data collected by various state boards or agencies into a single report. Surveys were mailed to growers to be completed and returned by mail. Aerial mapping of orchards in most growing regions was included and added a premium to the overall project cost. The collected data was then entered into a specialist software program and a single report produced. NPD reports were published every three years, a time lag industry deemed unacceptable.

Between 2008 and 2012 the citrus industry went through a period of restructure; several state boards were abolished. The wind up of the boards meant grower owned intellectual property, including plantings databases and grower contacts were lost.

The aim of CT14010 was to bring the data collection online and be able to update it each year with minimum cost. This meant the citrus grower database needed to be refreshed and updated to include email addresses where possible. Growers that did not provide an email received a postal survey and their data was entered on their behalf. An online system was developed to deliver the collection, collation and reporting functions required.

Methodology

1 Grower contacts

The Citrus Tree Census online database relied on communication with growers via email. The Manager of Market Information and Quality used industry networks to improve grower contacts across the growing regions. A telemarketing company was used to call growers to confirm business contact details, including email and mobile phone. The telemarketing company kept records of growers who reported no longer being in business or no longer growing citrus.

Gathering enough email contacts to make the data collection viable was a critical factor in the success of the Citrus Tree Census. Many growers did not have email addresses and some that did were not regular users of email or were uncomfortable with computers. In these cases the data was collected over the phone or via postal surveys and entered on an online form by the Manager of Market Information and Quality.

2 Awareness campaign

The Manager of Market Information and Quality developed an awareness campaign, including:

- Articles in the *Australian Citrus News* magazine and the *Citrus Australia eNews.*
- The Citrus Australia Website had links to articles and information about the Citrus Tree Census.
- Other newsletter networks such as the Citrus Australia South Australia newsletter and Fruit West magazine were also employed to increase awareness.
- Presentations were given at regional and national citrus meetings.
- All citrus levy payers received a brochure with information about the Citrus Tree Census and how to complete the survey.
- All citrus levy payers that had provided email addresses received an email and digital version of the brochure outlining how to complete the survey.
- Through networks developed with packing sheds and juice processors.
- Through visits to growers, packers, state agencies, local grower groups.

3 Citrus Tree Census online system development

The Manager of Market Information and Quality contracted Graeme Forsythe and Associates (GFA) to develop the Citrus Tree Census database. The Manager of Market Information and Quality:

- Provided a grower database to GFA
- Provided complete lists of variety and rootstock names
- Provided technical advice related to citrus plantings
- Advised the reporting requirements of the database
- Developed workflow schedules with GFA
- Managed the timely delivery of the database
- Managed the completed database

The database is held on a secure server in Sydney and all grower data is password protected and held confidentially. A grower can logon and see their own farm details and create a farm report in detail as required but does not have access to any other growers information.

The online system was used to communicate:

- system generated emails sent to growers with instructions and links to the Citrus Tree Census web-form
- system generated emails of acknowledgement to the grower upon receipt of the completed survey
- system generated reminder emails to growers that had not completed the survey.

To increase the validity of the survey, sections of the web-form were compulsory, thereby reducing errors and incomplete forms. Other components and functions of the survey form were:

- Variety and rootstock names entered through a drop down list to reduce error.
- Canopy hectares calculated when tree number, tree and row spacing had been entered.

4 Data collection

The Citrus Tree Census database collects the following data:

- business details
- growing region
- block name
- citrus category
- variety
- rootstock
- year planted
- year reworked
- tree spacing (in meters)
- row spacing (in meters)
- the number of trees
- the number of hectares.

For the majority of growers with email addresses the data collection process was efficient. Problems arose where:

- internet service was poor
- growers web browser versions were incompatible (old)
- growers were not comfortable with computers and did not have a family member that could assist.

Growers were provided with instructions or over the phone assistance to upgrade web browsers. Many pack houses provided staff to complete the tree census on the grower's behalf. Where internet or email did not exist or if growers could not complete the form, the Manager of Market Information entered the data on the grower's behalf.

Outputs

Reports

Australian Citrus Tree Census 2014 (see Appendix 1 Australian Citrus Tree Census 2014)
Citrus Production Outlook 2016 – 2025.

Presentations

National Plantings Database, Citrus Tree Census 2014, Citrus Australia National Issues Forum, Melbourne, November 2015.
Citrus Tree Census 2014, Queensland Post Season Meeting, Queensland Regional Advisory Committee Post season grower meeting, Gayndah, November 2015.
Citrus Tree Census 2014, Queensland Regional Forum, Citrus Australia Regional Forum, Gayndah.
National crop estimate and 10 year forecast, Citrus Market Outlook Forum, Sydney, March 2016.

Database

Citrus Tree Census online system.
Korea China Thailand and Taiwan export application online platform.
Export pack house registration system.

Other

National Citrus Tree Census 2014 awareness campaign brochure (Appendix 2 National Citrus Tree Census 2014 awareness campaign brochure).

Outcomes

CT14010 has successfully developed an online plantings database that can collect and report citrus planting data in a timely manner. Businesses and key stakeholders have access to up-to-date plantings data and production forecasts to inform decision making. Refer to the Australian Citrus Tree Census 2014 report and the Citrus Production Outlook 2016 – 2025; which reveal the potential of increased mandarin and lemon plantings and the expected decline in Valencia orange production.

The Citrus Australia market development team identified further uses for the online tree census database. Demand from China and other markets that require growers to register their orchards for export has risen substantially in the past four years. The Federal government is charged with auditing the registration process and relied on an antiquated paper based system. Using the tree census as a platform, Citrus Australia and GFA developed the Korea China Thailand and Taiwan (KCTT) online export application system.

The KCTT online application system allows growers to register parts or their entire orchard for export to KCTT markets. The system has streamlined the application process and reduced the audit time for the department. The citrus export industry benefited from the development of the online application system allowing exports to commence six weeks earlier in 2014.

Evaluation and Discussion

What has worked well in this project, and what areas not so well? What improvements could be made to benefit future citrus plantings data collection?

Self-evaluation

Successes

Development of the online system and the collaboration with GFA has been excellent. The system works efficiently using modern technology which will serve industry well for some time without the need for major overhauls. GFA are responsive and apply good business discipline to their systems.

The data that can be extracted from the system to be analysed and reported is an improvement on past databases. The timeliness of the reporting will be beneficial to industry.

Identifying the need to overhaul the export application process and then using the tree census database as a platform to implement an online application system has been a significant win for the industry.

Challenges

Transitioning industry from a paper based plantings data collection method to an online system was always going to have its difficulties. Primarily, the lack of contacts for growers was a significant hurdle, in particular email contacts. There was a resistance to using an online form which for many dissipated once they had given it a go, but for others was insurmountable. Some had issues with old versions of web browsers which we overcame and others had weak or non-existent internet coverage and could not participate online.

It can be difficult to achieve a minimum threshold of responses in voluntary surveys. In this case it was the most difficult part of the process. Overcoming resistance to the survey being online was one part, but probably more significant was apathy. A common response was 'I don't grow much, I didn't think it would matter'. Many of the smaller to medium growers surveyed had to be called, emailed and eventually visited to get their data in. The KCTT online system was a key leverage point for overcoming any issues and worked in the projects favour.

As much as email is the key to quick communication and efficient delivery of the survey, there are many downsides to its use. Continual updating of the grower database proves challenging as email contacts change when growers change service providers or staff move on. Many growers do not regularly check email or don't place sufficient importance on email communication, believing if it's important they will be contacted by mail or telephone. For these reasons the collection of data for the tree census will always have a component of hard copy (mail or fax) and telephone communication and will never receive all grower input directly online.

Despite the issues raised above, now that there is sufficient base data collected it will be easier each year to collect data from previous contributors which will allow time to concentrate on finding new contributors.

Recommendations

1. The Citrus Tree Census online database is a resource that it is valued by industry and has contributed significantly to improving efficiencies in export market applications. Hort Innovation should continue to prioritise funding of the tree census database.
2. CT14010 was a stand-alone project in 2014; it is recommended that the management and improvement of the database come under the market development project as an ongoing responsibility of the Manager of Market Information and Quality.

Intellectual Property/Commercialisation

No commercial IP generated.

Acknowledgements

The following personnel and agencies are acknowledged for their input and assistance in collecting data for the 2014 Citrus Tree Census.

New South Wales Department of Primary Industries

Andrew Creek, Development Officer – Citrus

Tammy Galvin, Senior Land Services Officer (Projects)

Department of Agriculture and Food Western Australia

Bronwyn Walsh, Value Chain Coordinator – Citrus

Citrus Australia South Australia Region

Mark Doecke, Committee Member

Anthony Fulwood, Committee Member

Penny Smith Committee Member

Appendices

Appendix 1 Australian Citrus Tree Census 2014
Appendix 2 National Citrus Tree Census 2014 awareness campaign brochure

Australian Citrus

Tree Census

2014

Nathan Hancock

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Introduction

The Australian citrus industry is one of Australia's largest horticulture industries, with commercial production in five States and one territory. The citrus industry is one of Australia's largest fresh produce exporters, exporting on average 160,000 tonnes per year, over the last ten years. While the industry's size and output is significant in Australia, it comprises less than 0.5% of global production and is one of the highest cost producers in the world, relying on its reputation for quality and safety to command premium prices in high paying export markets.

The Citrus Tree Census is an online database developed by Citrus Australia to collect national production statistics about variety, rootstock, tree age and hectares planted.

This information is essential for:

- guiding growers when choosing which varieties to plant
- assisting the citrus supply chain with packing and logistics investment decisions and
- directing market development and research and development needs.

Method

Citrus growers across Australia were contacted by mail or email to complete a tree survey, either online or by return post. Online submissions were captured in the system immediately and postal returns were entered online once received. Before closing the 2014 Tree Census, growers that had not responded were contacted by phone to determine if they were still growing citrus and this information was also recorded.

The canopy hectares were calculated using the tree and row spacing and number of trees. Previous industry surveys have used mapping or grower derived estimates to determine production hectares. We point out here that canopy hectares account for the hectares under production, and do not include headlands, laneways and other farm land.

There are limits to the data collection including:

- new entrants to the industry unknown to Citrus Australia
- the voluntary nature of the survey
- for privacy reasons, some growers did not contribute or may have under reported.

Results overview

Through consultation with regional committees and industry personnel, every effort was made to contact every grower and collect maximum data from each region. The survey was sent to 1,750 citrus businesses. In total, 1,400 responses were received including 400 that responded 'no longer in business'. Data on the number of businesses that responded 'no longer in business' was analysed, revealing an estimated 3,300 ha of land was no longer in production. Further to this, an estimated 2,500 hectares are not represented in the survey due to growers not responding for reasons stated above. The overall results of the survey are displayed numerically in Table 1 and graphically in figure

1 (below). Figure 1 shows that orchard size across Australian citrus plantings is approximated by a normal distribution with the mode (most common response) being the 10-20 hectare range.

The size of the national industry is estimated to be 25,800 hectares, representing a contraction of 8 per cent in the total hectares last recorded (2011 National Plantings Database). This is consistent with industry expectation as many growers exited the industry having endured 10 years of drought, followed by floods and heat waves. The decline in the important United States market and the strong Australian dollar were also significant factors. National citrus planting surveys in 2003, 2008 and 2011 report a similar declining trend.

The data presented in this report relates only to the responses collected from the 1,064 citrus businesses that participated in the 2014 Citrus Tree Census.

Table 1: Australian orchard size and area of production

Area (ha)	Number of Orchards	Area (ha)	% Orchards	% Area
<2 ha	130	133	12.2	0.6
2 to 5 ha	165	564	15.5	2.5
5 to 10 ha	220	1,656	20.7	7.4
10 to 20 ha	271	3,978	25.5	17.8
20 to 40 ha	168	4,624	15.8	20.7
40 to 100 ha	80	4,793	7.5	21.5
100 to 200 ha	16	2,245	1.5	10.1
200 to 400 ha	12	3,439	1.1	15.4
>400 ha	2	863	0.2	3.9
Total	**1,064**	**22,294**	**100**	**100**

Figure 1: Size of orchards

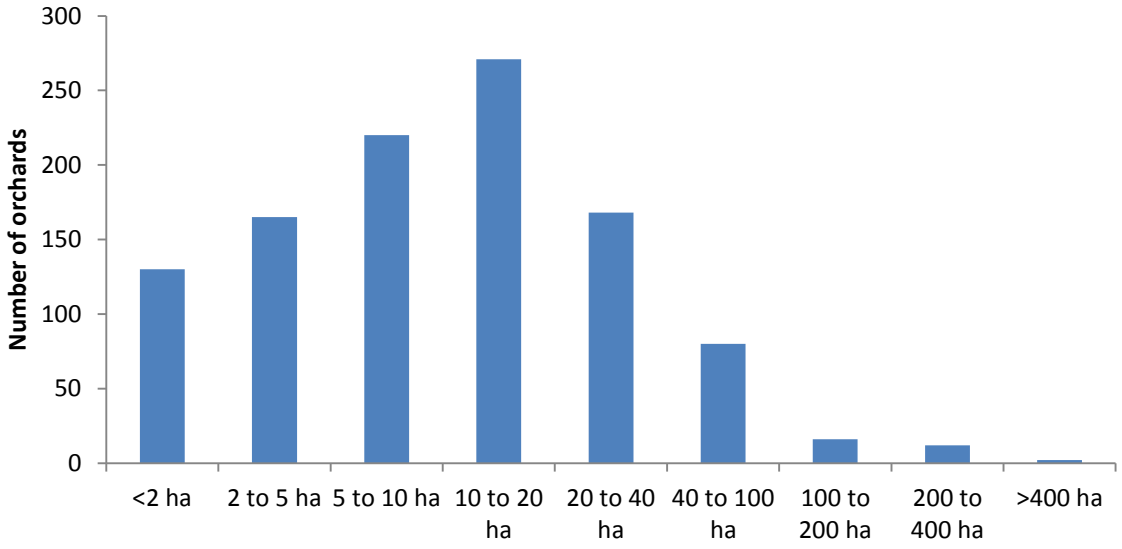


Figure 2: Australian orchard size and area of production (ha)

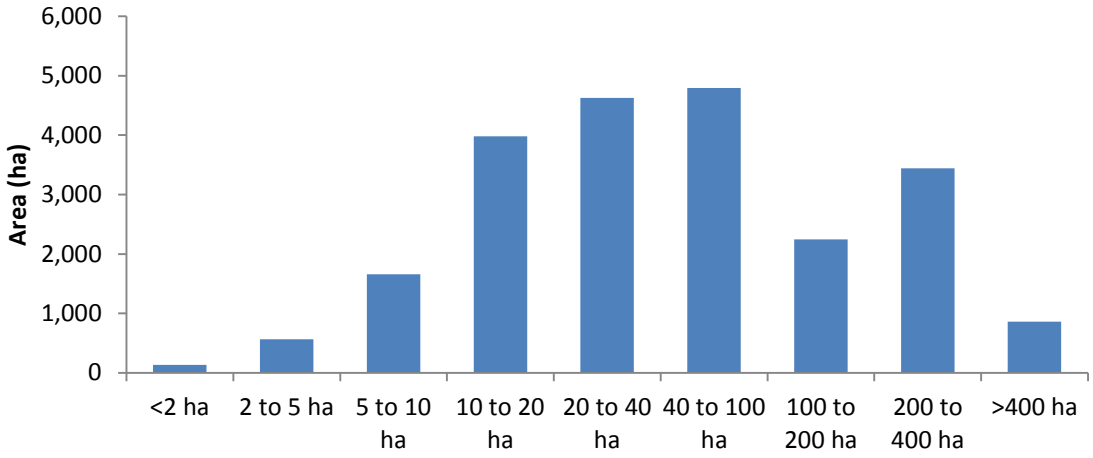
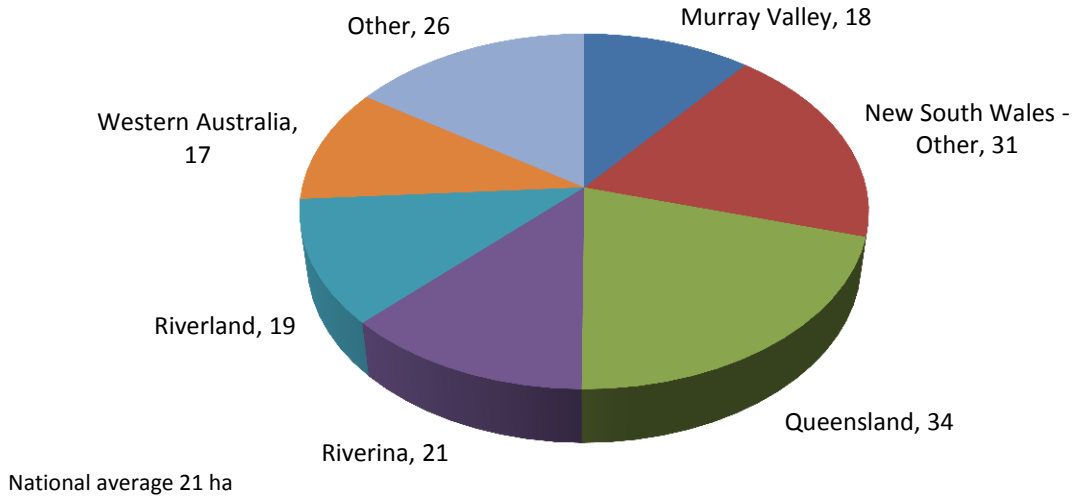


Table 2: Orchards per region - Australia

Region	Number of orchards	% of Total
Murray Valley	249	23%
New South Wales - Other	23	2%
Queensland	115	11%
Riverina	337	32%
Riverland	275	26%
Western Australia	56	5%
Other	9	1%
Total	**1064**	**100%**

Figure 3: Average orchard size per region (ha)



Australian citrus - scope of the industry

In summary:

Industry

- The average orchard size in Australia is 21 ha.
- In 2014, 26% of orchards accounted for 72% of citrus plantings.
- In 2014, 7% of citrus plantings were non-bearing.

Regions

- The Riverina (6,897 ha) is the largest citrus production region, 59% of Riverina plantings are juicing orange varieties.
- The Murray Valley (2,916 ha) and Riverland (2,570 ha) are the largest navel orange production regions.
- Queensland is Australia's largest mandarin production region (2,058 ha) and the largest lemon (469 ha) and lime (214 ha) production region.

Categories

- Oranges (15,307 ha) are Australia's predominant citrus category, totalling 69% of national hectares.
- Navel orange (8,688 ha) plantings are the largest orange category at 39% of national hectares.
- Late season navels (4,228 ha) are the largest navel subcategory, followed by mid-season (2,557 ha) navels.
- In 2014, 61% (4,051 ha) of juicing oranges were older than 21 years.
- Mandarin (5,451 ha) production accounts for 24% of the national hectares.
- Murcott mandarin including Low Seeded Murcott mandarins (1,619 ha) are the largest mandarin plantings, Imperial mandarin (1,602 ha) and Afourer (998 ha) are the next largest plantings.
- In 2014, 21% of total mandarin plantings were non-bearing.
- 43% (430 ha) of Australian lemon plantings were less than 10 years old in 2014.

Table 3: Australian citrus industry area planted per category

Category	Area (ha)
Navel	8,697
Valencia & Common	6,610
Mandarin & Tangelo	5,451
Lemon & Lime	1,268
Grapefruit Citron & Pummelo	268
Total	**22,294**

Figure 4: Australian citrus industry area planted per category

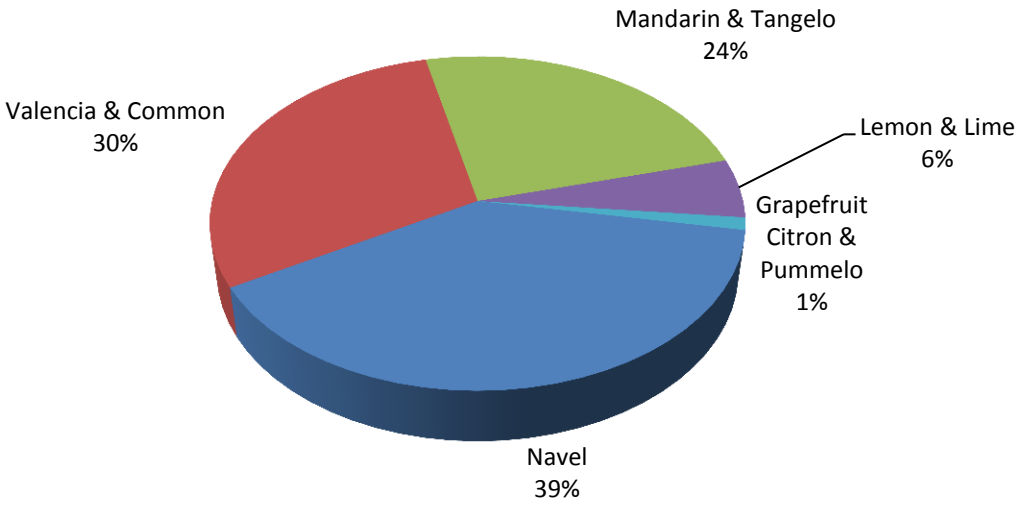
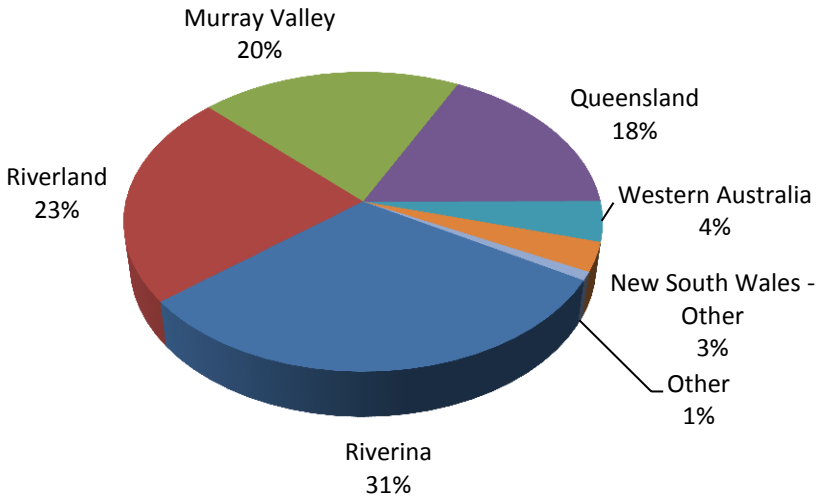


Table 4: Australia's citrus production regions

Region	Area (ha)
Riverina	6,897
Riverland	5,149
Murray Valley	4,465
Queensland	3,917
Western Australia	963
New South Wales - Other	702
Other	202
Total	**22,294**

Figure 5: Australia's citrus production regions



Australian citrus - category analysis

Australian citrus– navel oranges

Table 5: Australia's navel orange subcategories

Subcategory	Area (ha)
Early season navel	1,700
Mid season navel	2,557
Late season navel	4,228
Red flesh navel	213
Total	**8,697**

Figure 6: Australia's navel orange subcategories (ha)

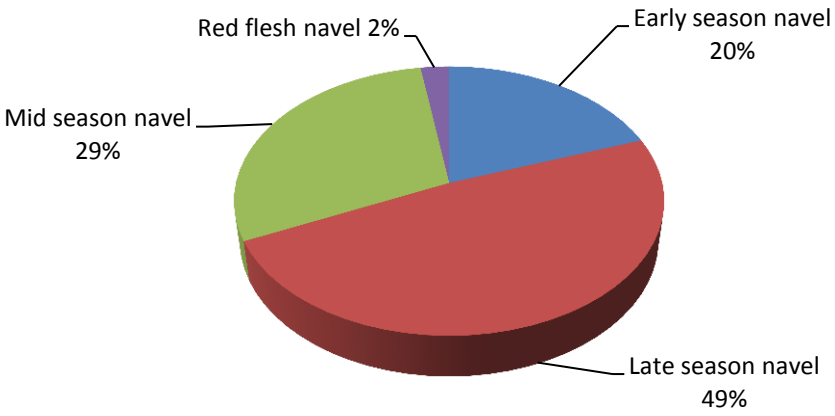


Table 6: Australia's navel production regions

Production region	Area (ha)
Murray Valley	2,916
Riverland	2,570
Riverina	2,471
Western Australia	505
Queensland	88
Victoria - Other	75
New South Wales - Other	71
Total	**8,697**

Figure 7: Australia's navel orange production regions

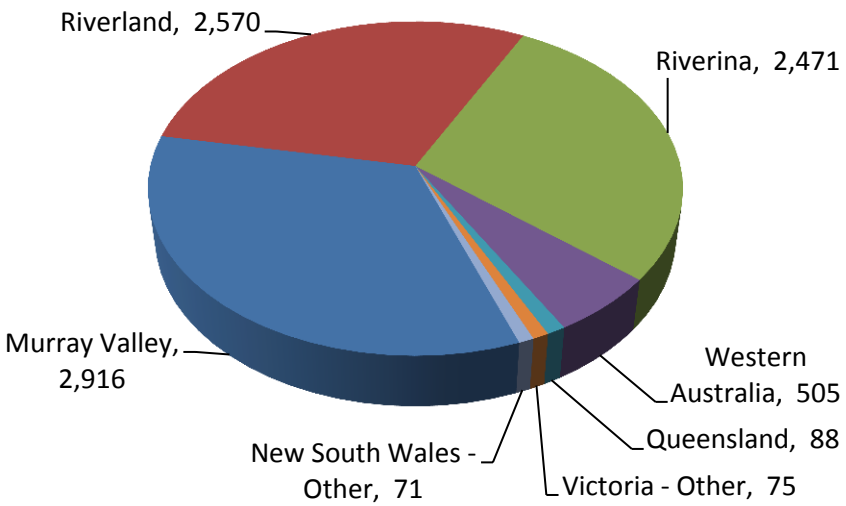


Table 7: Australia's early season navel production

Region	Area (ha)
Murray Valley	724
Riverland	547
Riverina	272
Western Australia	113
Other	42
Total	**1,700**

Figure 8: Australia's early season navel production regions

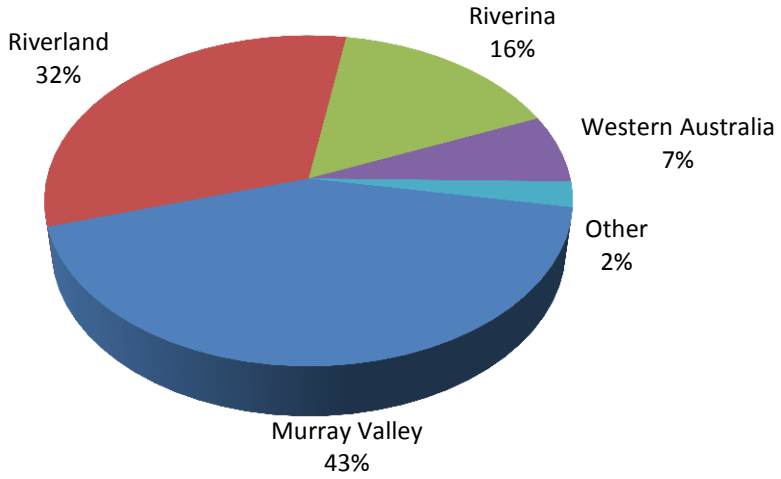


Table 8: Australia's mid season navel production

Region	Area (ha)	%Total
Riverina	1,054	41.2
Murray Valley	507	19.8
Riverland	740	29.0
Western Australia	162	6.3
Other	93	3.6
Total	**2,557**	**100**

Figure 9: Australia's mid season navel production regions

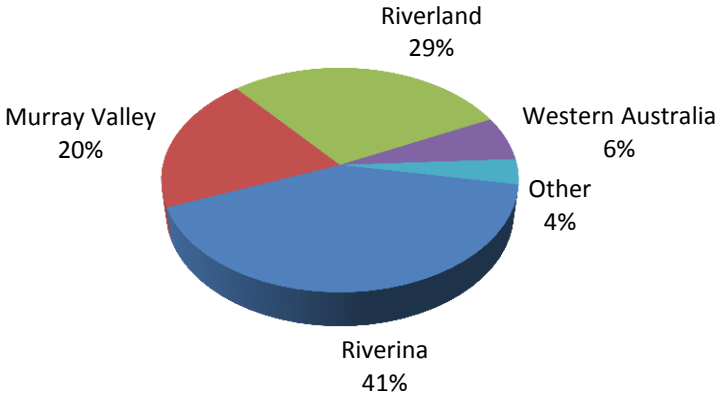


Table 9: Australia's late season navel production

Region	Area (ha)
Murray Valley	1,631
Riverland	1,230
Riverina	1,080
Western Australia	200
Other	86
Total	**4,228**

Figure 10: Australia's late season navel production

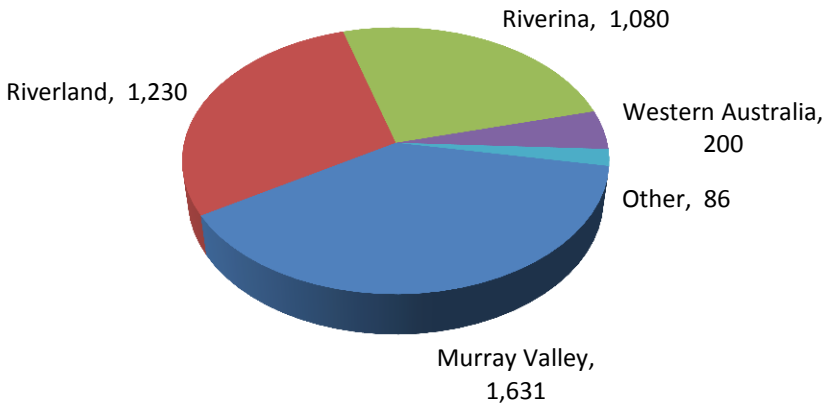


Figure 11: Australia's early season navel orange tree distribution

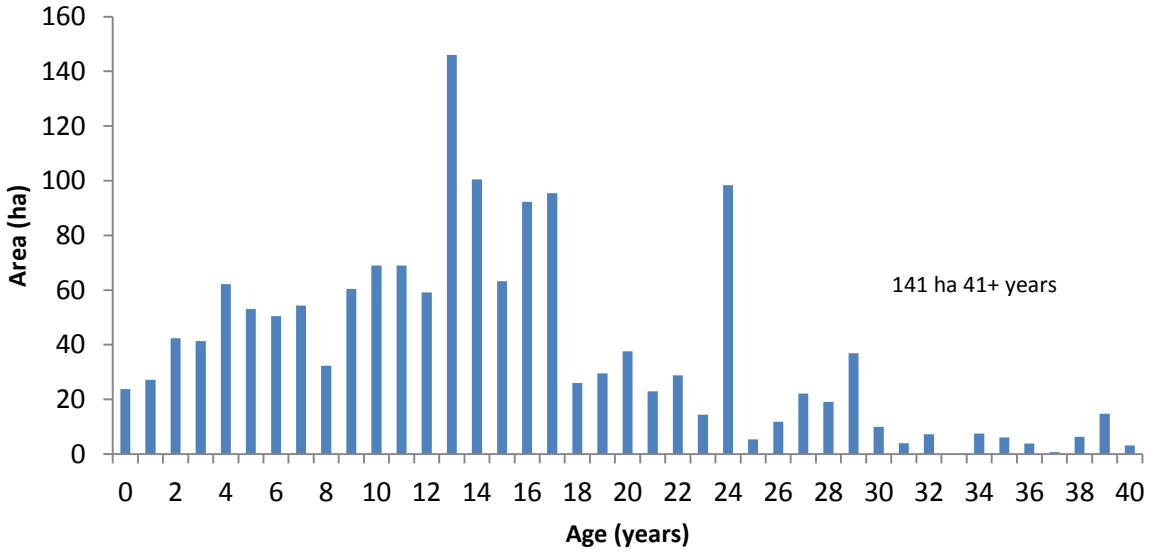


Figure 12: Australia's mid season navel orange tree age distribution

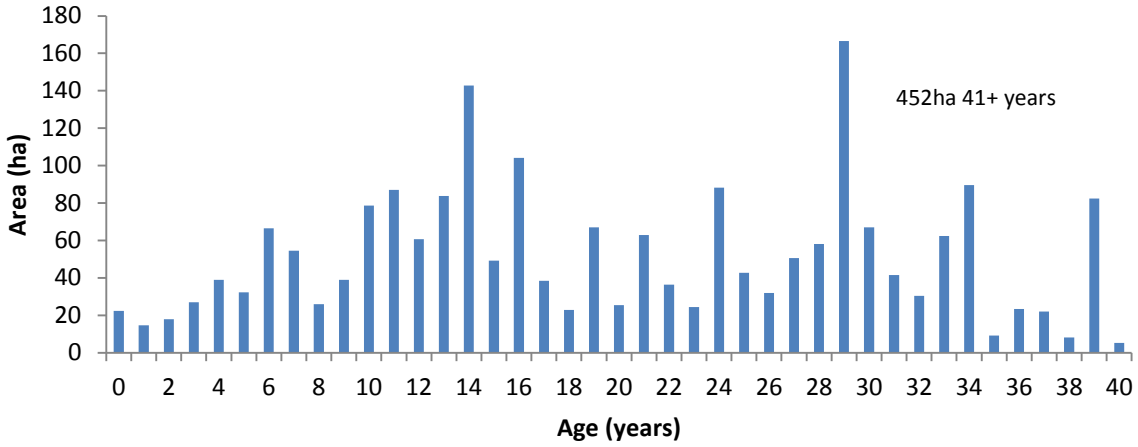


Figure 13: Australia's late season navel orange tree age distribution

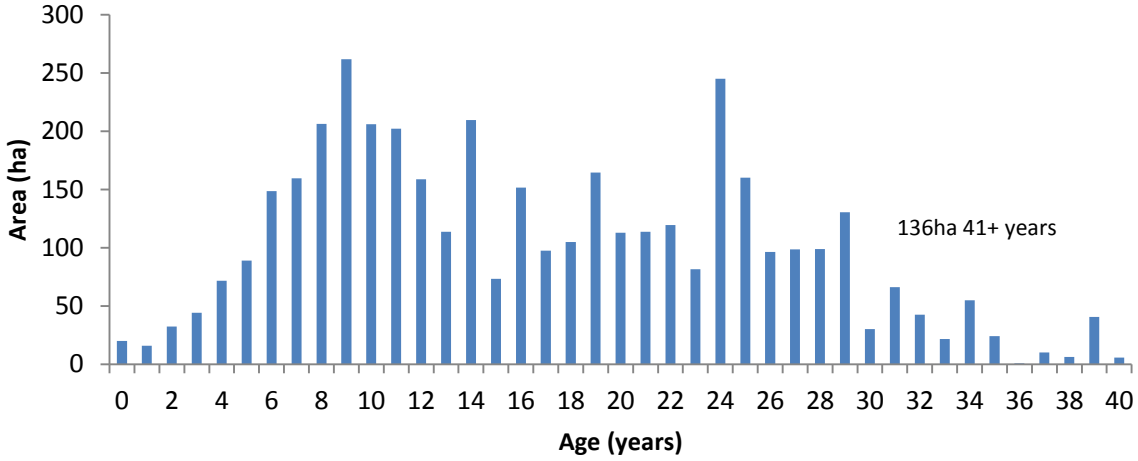


Figure 14: Australia's red flesh navel orange tree age distribution

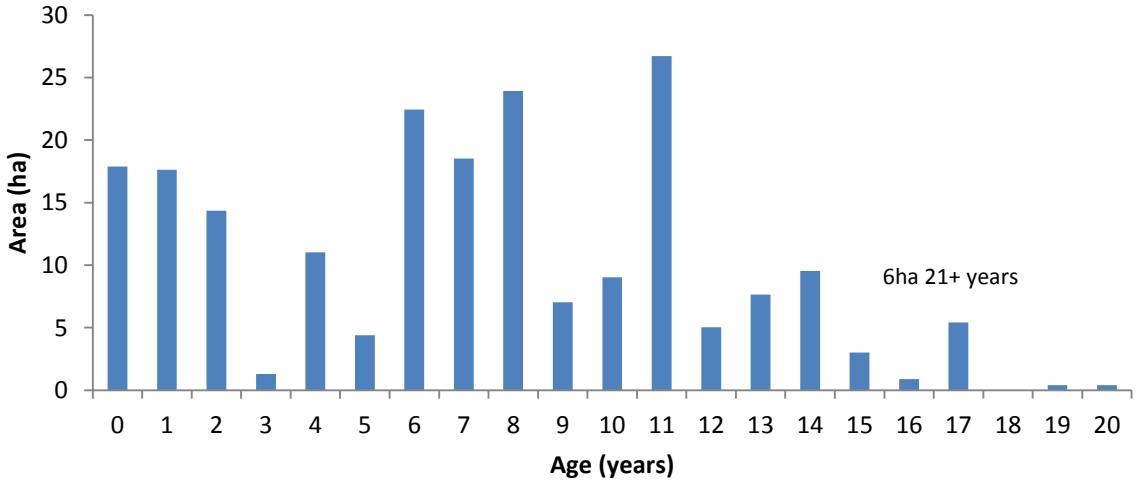
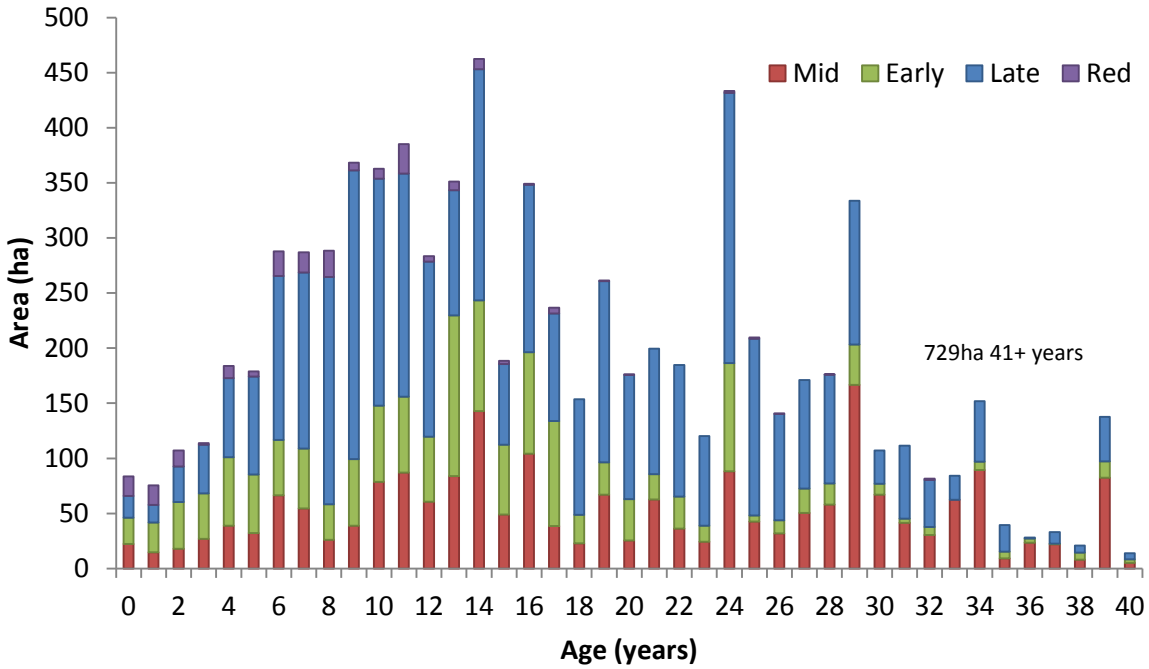


Figure 15: Australia's navel orange tree age distribution



Australian citrus - juicing oranges

Table 10: Australia's juicing orange production regions

Production region	Area (ha)
Riverina	4,051
Riverland	1,194
Murray Valley	603
New South Wales - Other	533
Western Australia	156
Queensland	57
Victoria - Other	18
Total	**6,610**

Figure 16: Australia's juicing orange production regions

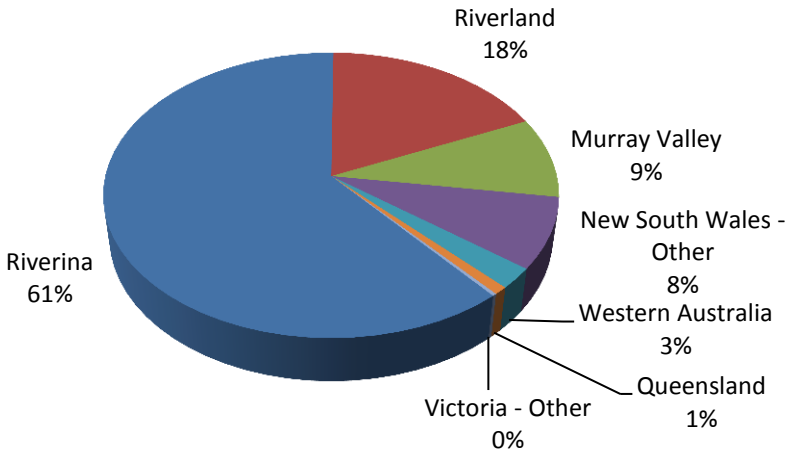
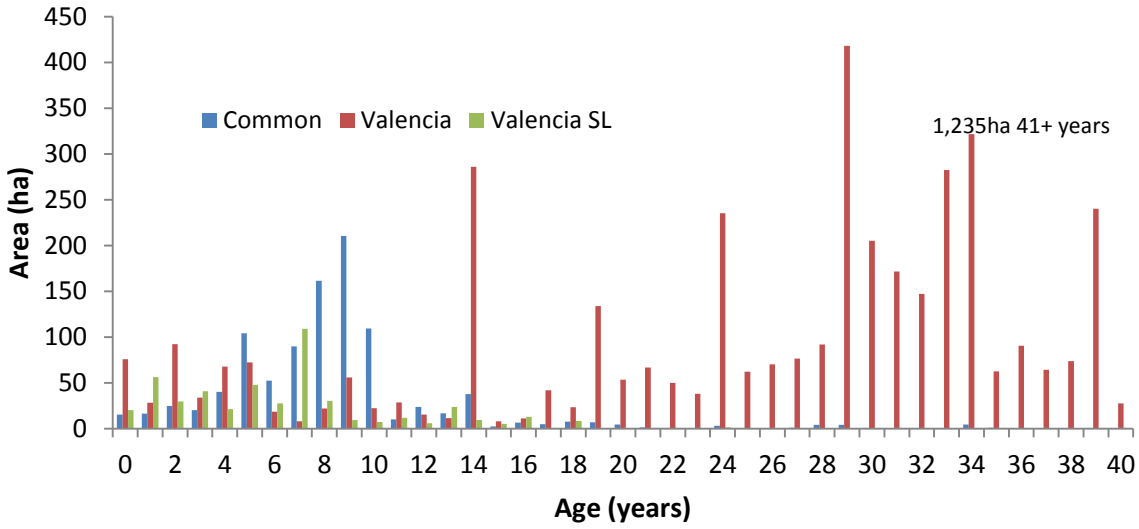


Figure 17: Australia's juicing orange tree age distribution



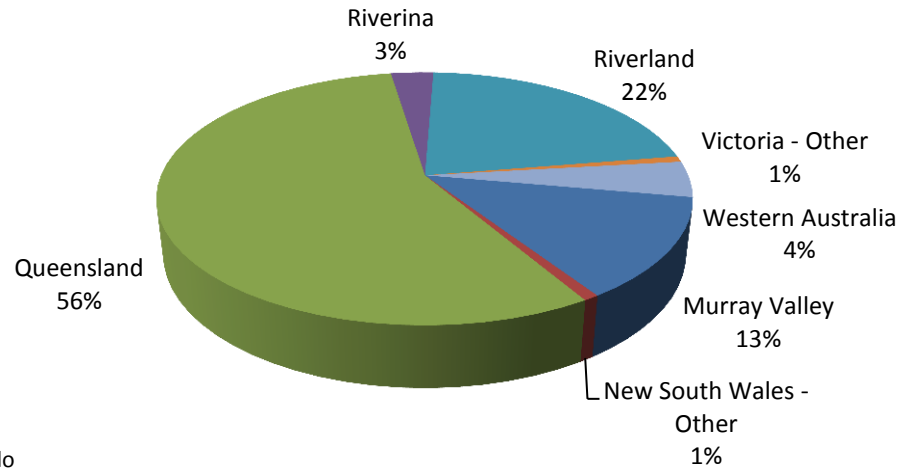
Australian citrus - mandarin

Table 11: Australia's mandarin* production regions

Production region	Area (ha)
Murray Valley	702
New South Wales - Other	43
Queensland	3,058
Riverina	166
Riverland	1,190
Victoria - Other	40
Western Australia	251
Total	**5,451**

*including Tangelo

Figure 18: Australia's mandarin* production regions



*including Tangelo

Table 12: Australia's major mandarin varieties

Variety	Area (ha)
Afourer	998
Imperial	1,602
Murcott	1,139
Murcott Low Seeded	480
Other*	1,232
Total	**5,451**

*includes Tangelo

Figure 19: Australia's major mandarin* varieties

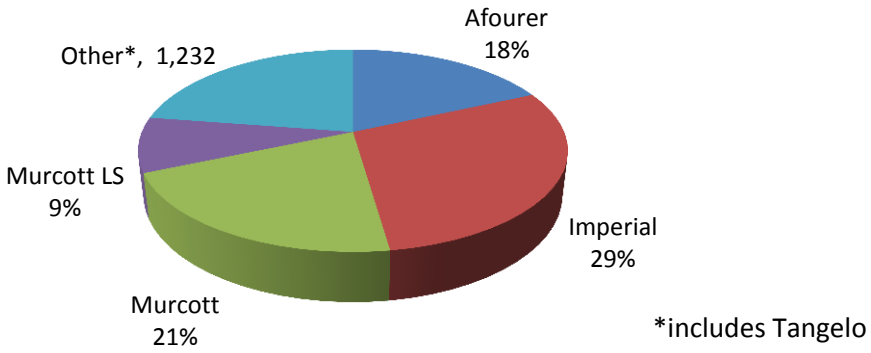


Table 13: Australia's Imperial mandarin production regions

Region	Area(ha)
Queensland	884
Riverland	316
Murray Valley	263
Western Australia	68
Riverina	64
Other	6
Total	**1,602**

Figure 20: Australia's Imperial mandarin production regions

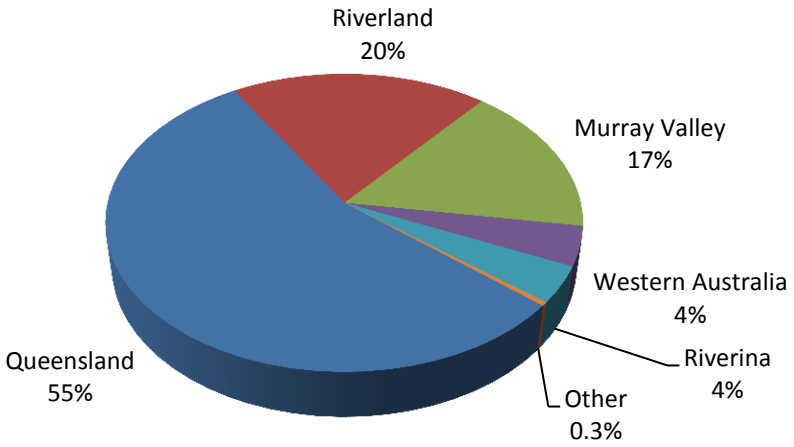


Figure 21: Australia's Imperial mandarin tree age distribution

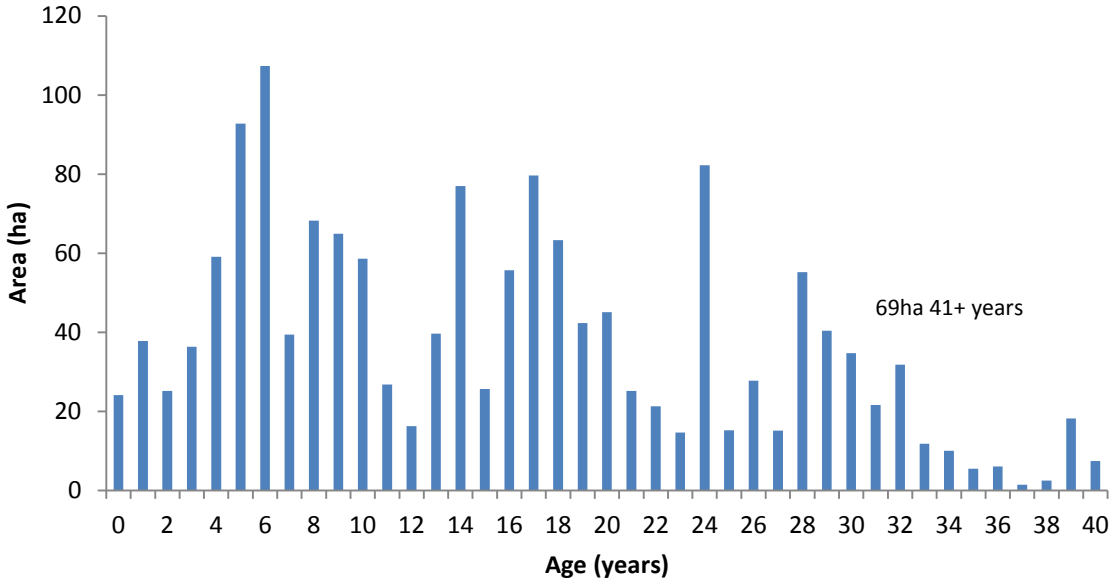


Table 14: Australia's Murcott mandarin production regions

Region	Area (ha)
Queensland	1,049
Riverland	74
Other	16
Total	**1,139**

Figure 22: Australia's Murcott mandarin production regions

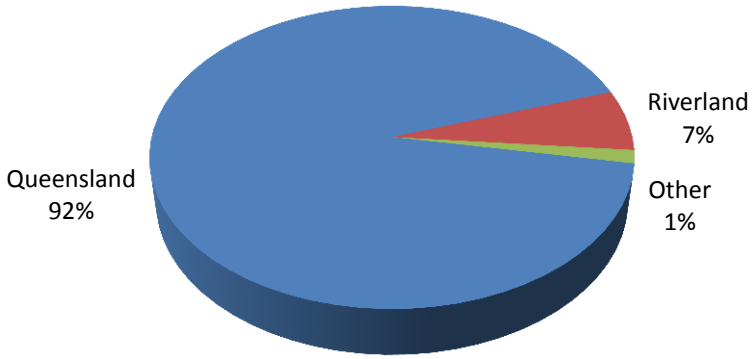


Table 15: Australia's Low Seeded Murcott mandarin production regions

Region	Area (ha)
Queensland	469
Riverland	10
Total	**480**

Figure 23: Australia's Low Seed Murcott mandarin production regions

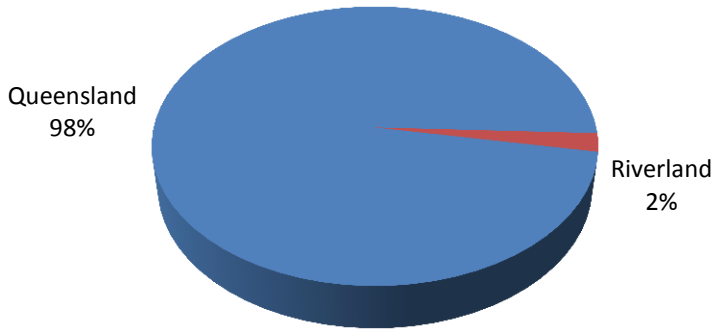


Figure 24: Australia's Murcott mandarin tree age distribution

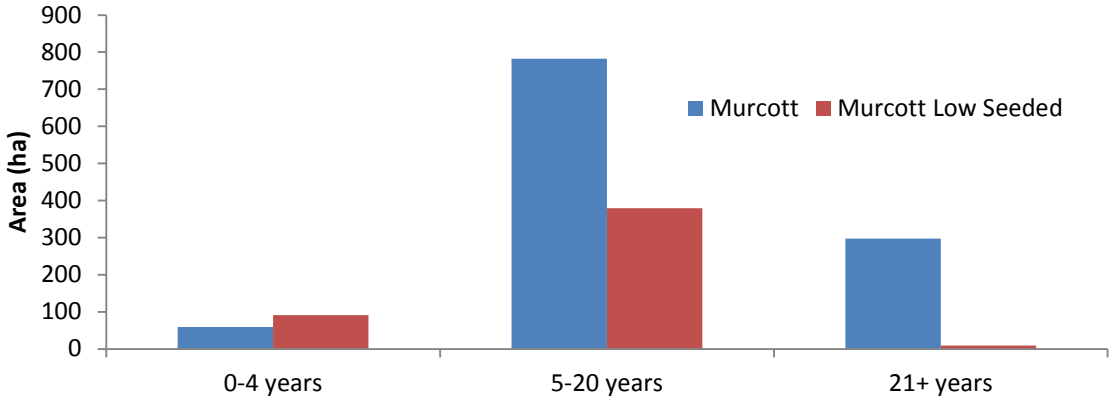


Table 16: Australia's Afourer mandarin production regions

Region	Area ha)
Murray Valley	331
Riverland	383
Queensland	147
Western Australia	58
Other	79
Total	**998**

Figure 25: Australia's Afourer mandarin production regions

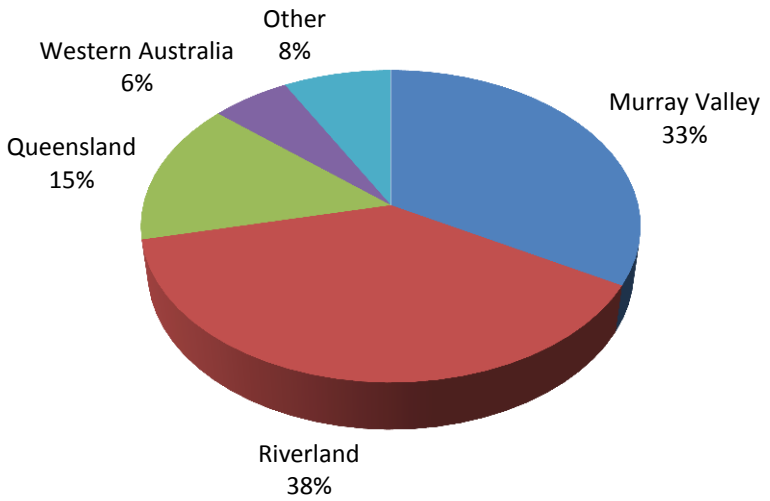


Figure 26: Australia's Afourer mandarin tree age distribution

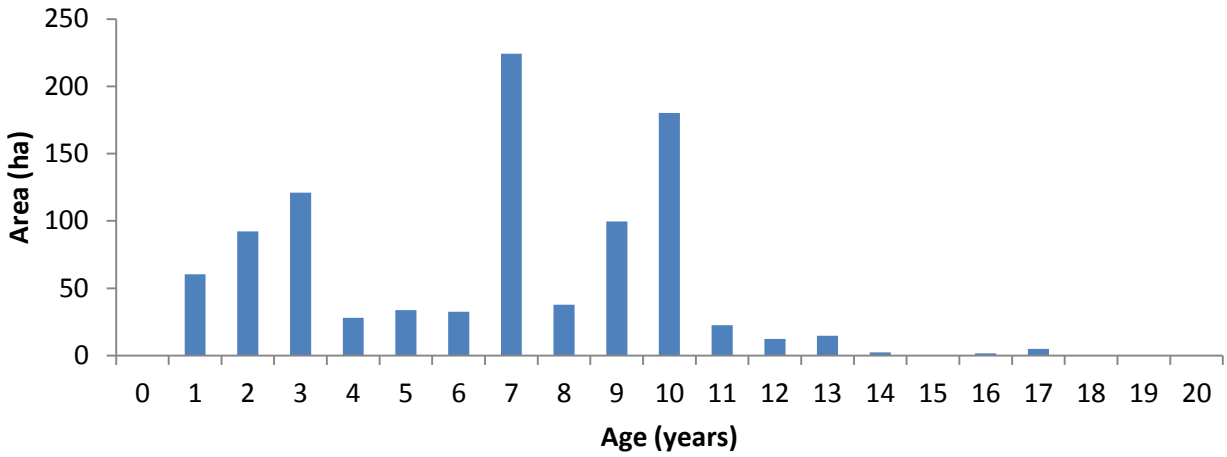


Figure 27: Australia's other mandarin* production area

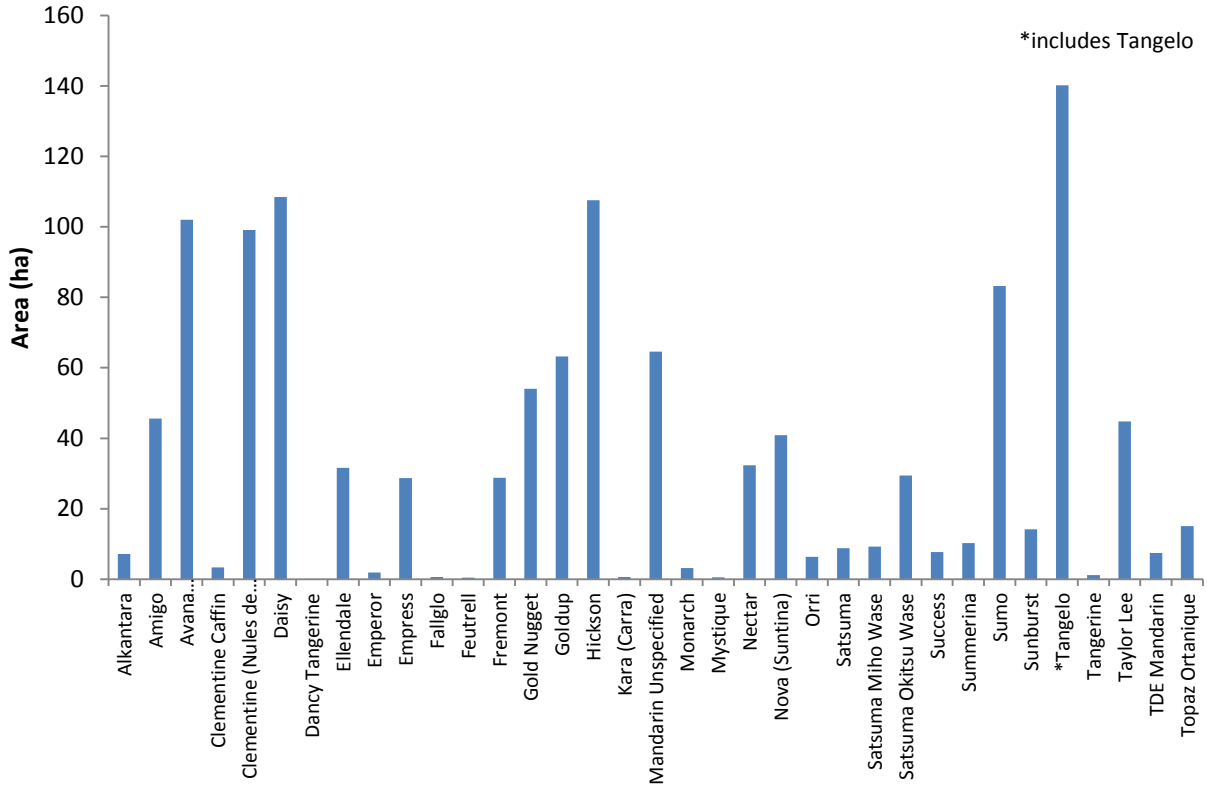
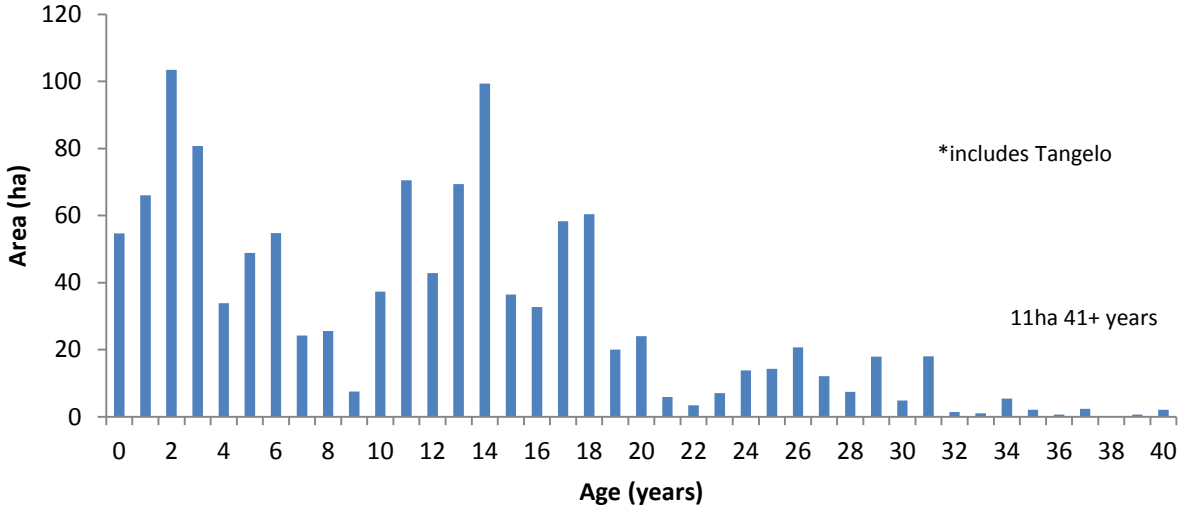


Figure 28: Australia's other mandarin* tree age distribution



Australian citrus - lemon and lime

Table 17: Australia's lemon and lime production regions

Region	Area (ha)
Queensland	683
Murray Valley	186
Riverland	141
Riverina	130
Western Australia	27
Other	102
Total	**1,268**

Figure 29: Australia's lemon and lime production regions

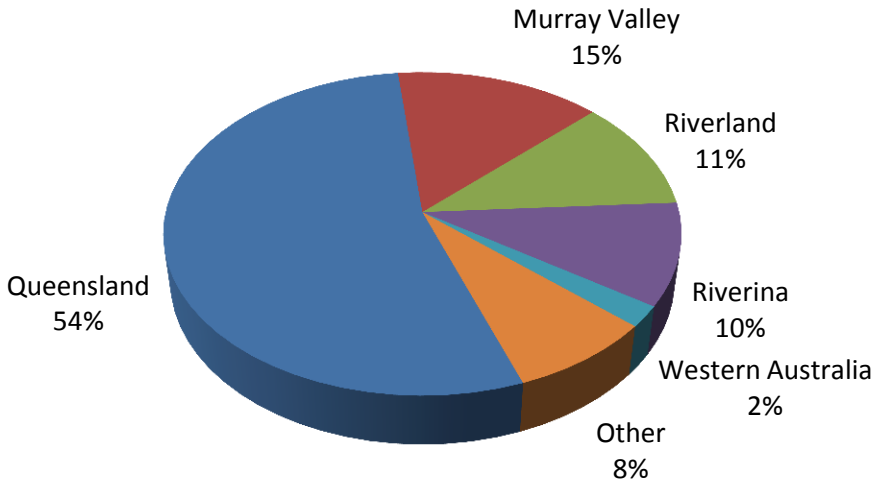


Figure 30: Australia's lemon and lime production area (ha)

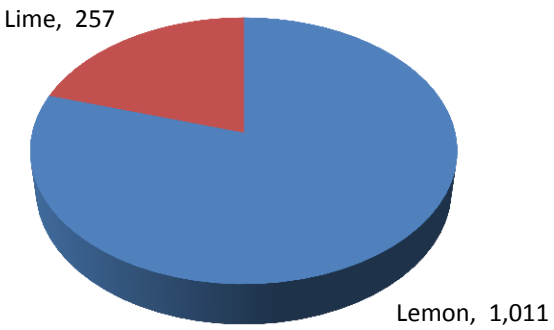


Figure 31: Australia's lemon tree age distribution

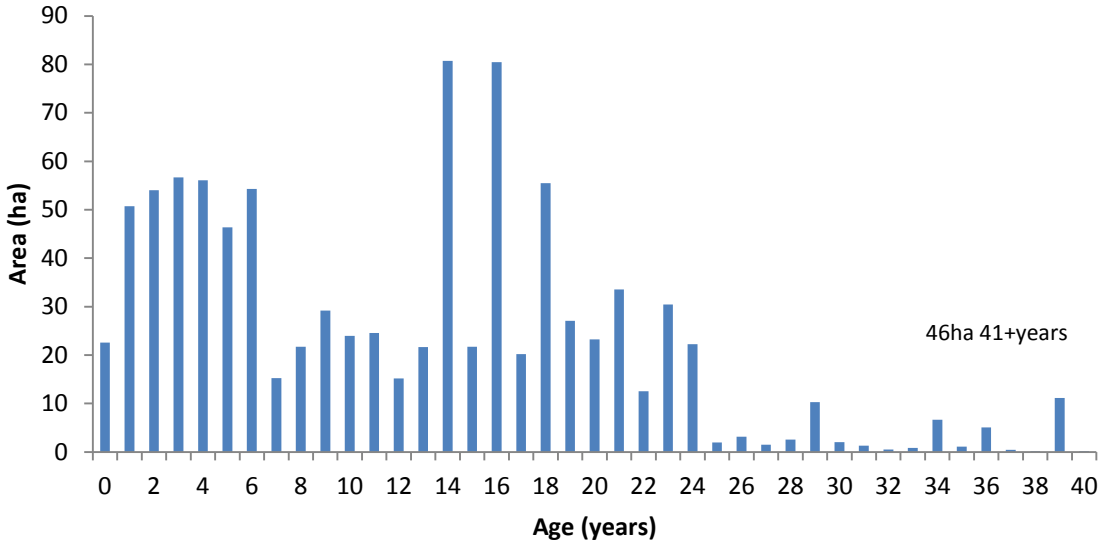
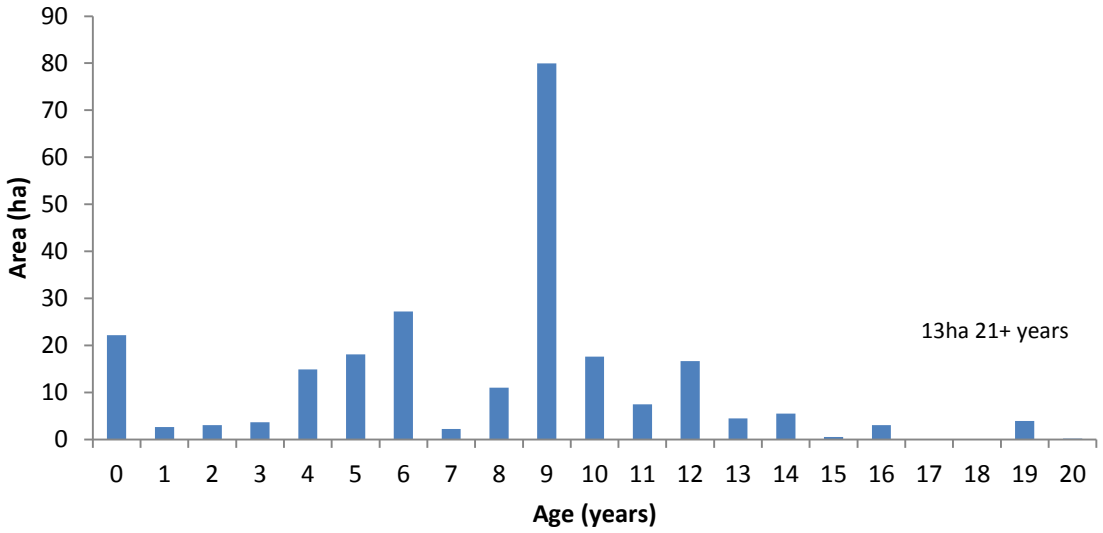


Figure 32: Australia's lime tree age distribution



Australian citrus - grapefruit, citron and pummelo

Table 18: Grapefruit, citron and pummelo production regions

Production region	Area (ha)
Riverina	79
Murray Valley	58
Riverland	54
Queensland	32
Western Australia	24
Northern Territory	9
Victoria - Other	8
New South Wales - Other	4
Total	**268**

Figure 33: Australia's grapefruit citron and pummelo production regions

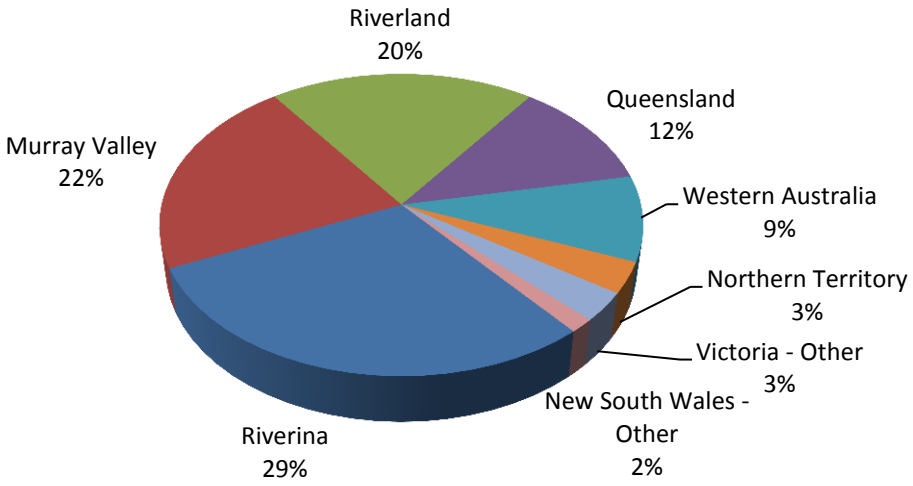


Table 19: Australia's grapefruit, citron and pummelo subcategories

Sub category	Area (ha)
Red Grapefruit	173
White Grapefruit	88
Citron	1
Pummelo	6
Total	**269**

Figure 34: Australia's grapefruit citron and pummelo production area

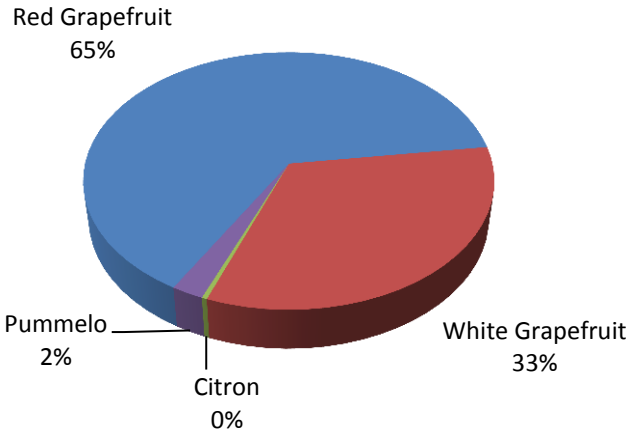
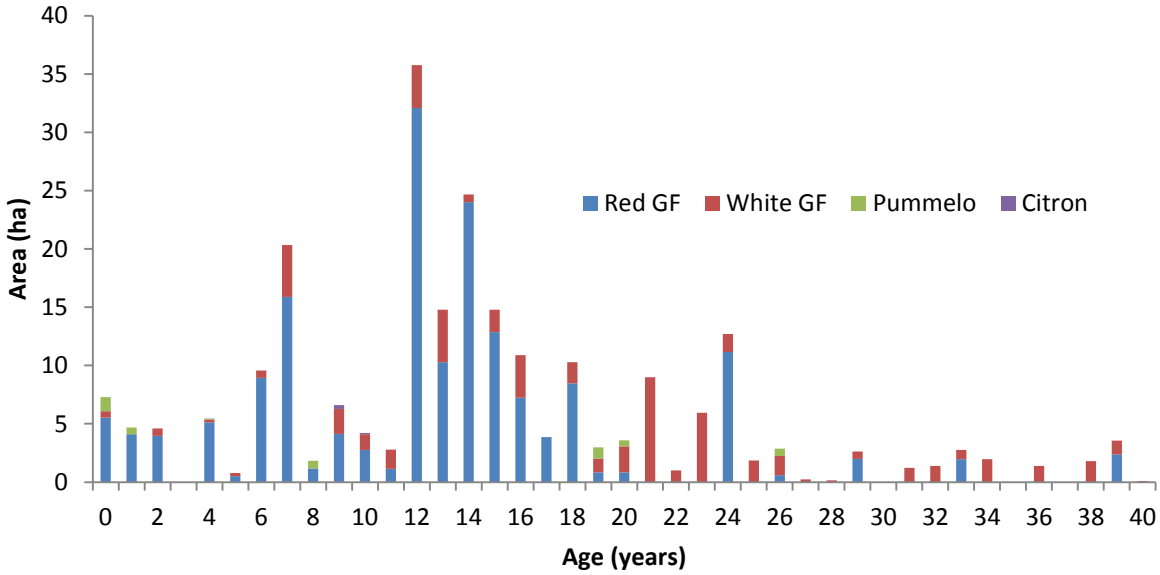


Figure 35: Australia's grapefruit, citron and pummelo tree age distribution



Citrus production by region

Riverina

In summary,

- the Riverina region (6,897 ha) is Australia's largest citrus production region
- 59% of the area of production is juicing orange varieties (4,050 ha)
- 37% of Riverina orchards are less than 10 ha, representing 11.5% of the production area
- the Valencia orange tree age distribution chart highlights the aging production base for the juice processing industry – 67% (2,708 ha) were 21 years or older in 2014
- recent plantings of common orange and Valencia seedless (Valencia SL) reflects the demand for year-round fresh juice supply to suit Australia's evolving juice category
- mid and late season navels (1,054 ha and 1,080 ha) are the Riverina's largest navel subcategories
- mandarin production area is just two percent (2%) of the Riverina's citrus production region

Table 20: Riverina orchard size and area of production

Area (ha)	Number of Orchards	Area (ha)	% Orchards	% Area
<2 ha	11	12	3.3	0.2
2 to 5 ha	33	125	9.8	1.8
5 to 10 ha	82	653	24.3	9.5
10 to 20 ha	121	1,833	35.9	26.6
20 to 40 ha	59	1,566	17.5	22.7
40 to 100 ha	26	1,589	7.7	23.0
100 to 200 ha	3	445	0.9	6.5
200 to 400 ha	2	674	0.6	9.8
Total	**337**	**6,897**	**100**	**100**

Average orchard size	Area (ha)
Riverina	20.5
National	21.0

Figure 36: Size of orchards – Riverina

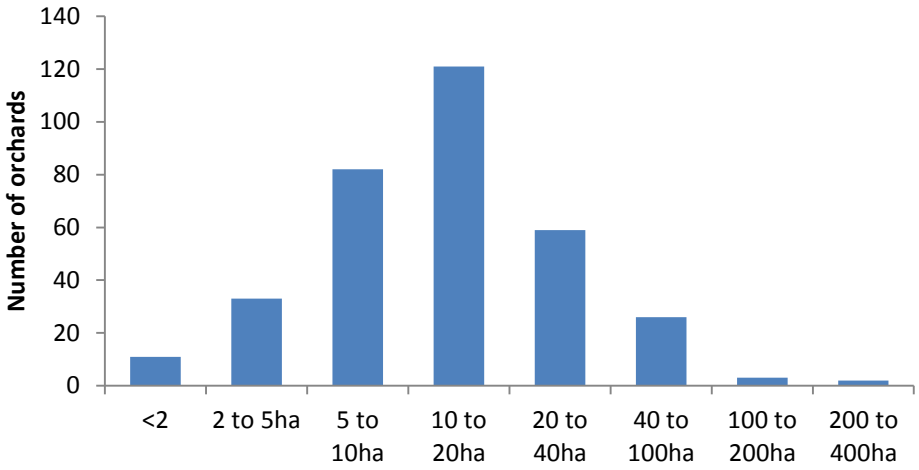


Figure 37: Riverina area of production by orchard size (ha)

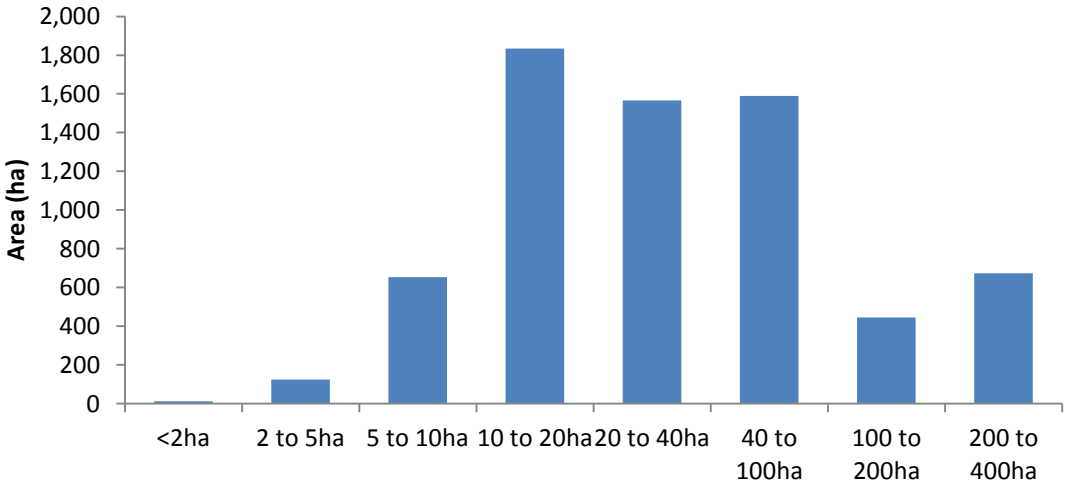
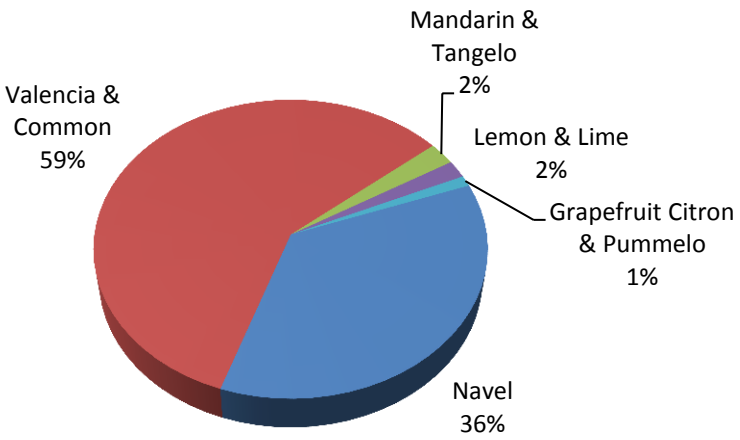


Table 21: Riverina citrus categories

Category	Area (ha)
Navel	2,471
Valencia & Common	4,050
Mandarin & Tangelo	167
Lemon & Lime	130
Grapefruit Citron & Pummelo	79
Total	**6,897**

Figure 38: Riverina citrus categories



Riverina navel oranges

Table 22: Riverina navel orange subcategories

Subcategory	Area (ha)
Early season navel	272
Mid season navel	1,054
Late season navel	1,080
Red flesh navel	64
Total	**2,471**

Figure 39: Riverina navel orange subcategories

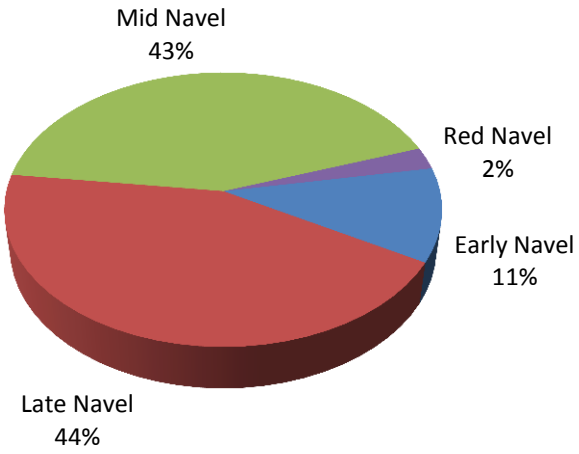


Figure 40: Riverina early season navel orange tree age distribution

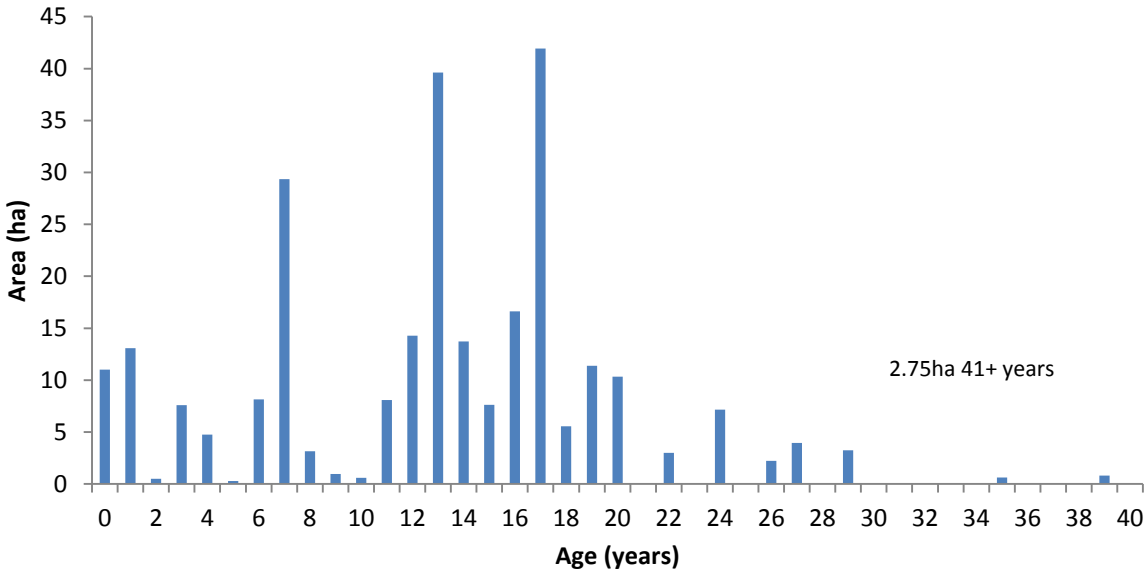


Figure 41: Riverina mid season navel orange tree age distribution

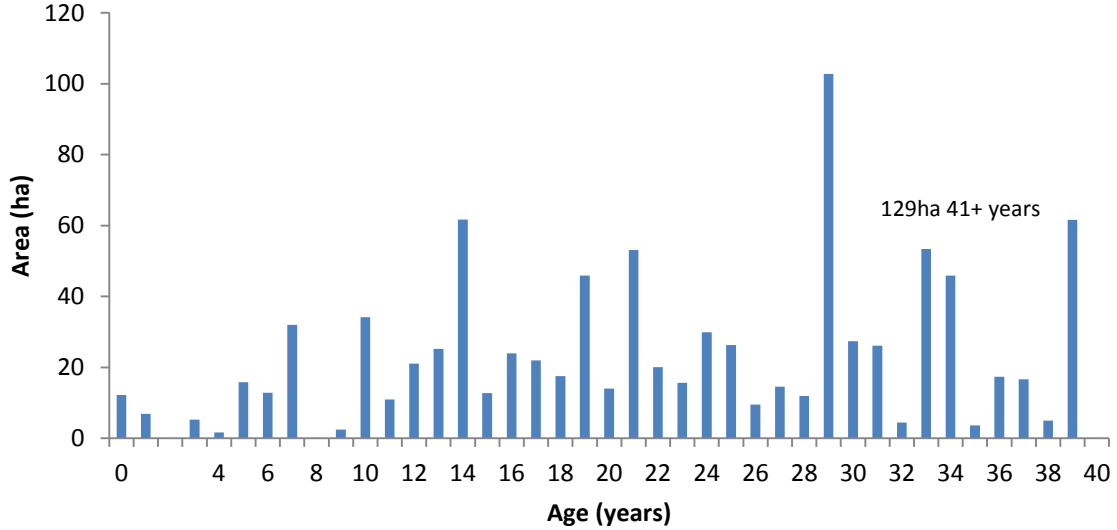


Figure 42: Riverina late season navel orange tree age distribution

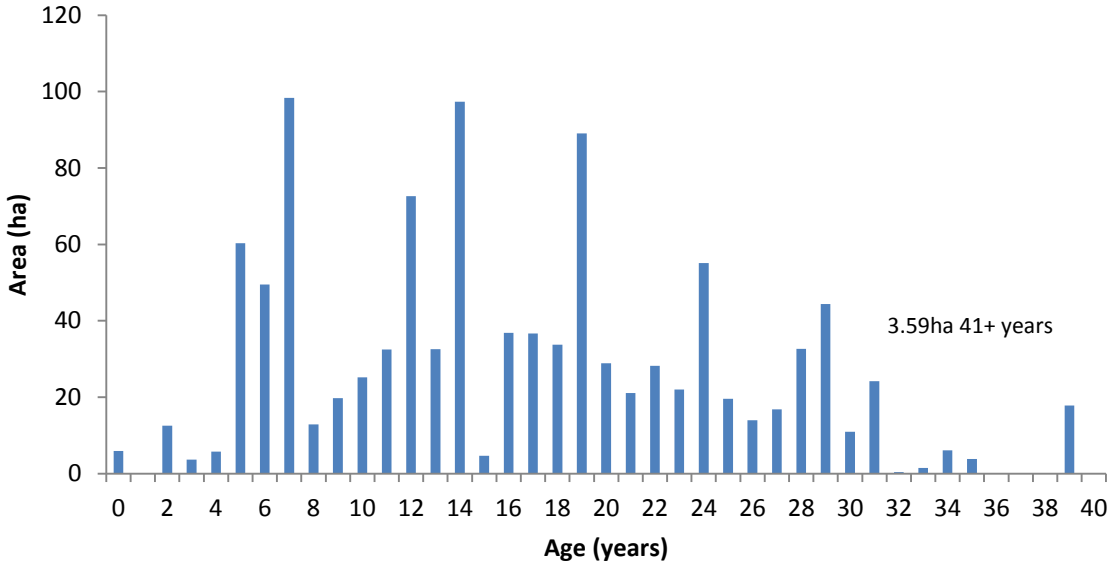


Figure 43: Riverina red flesh navel orange tree age distribution

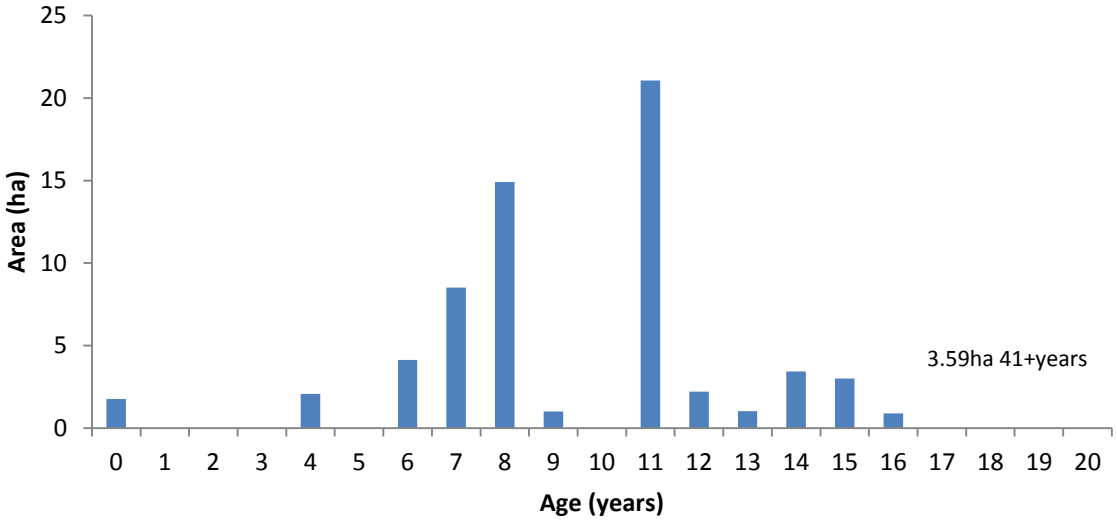
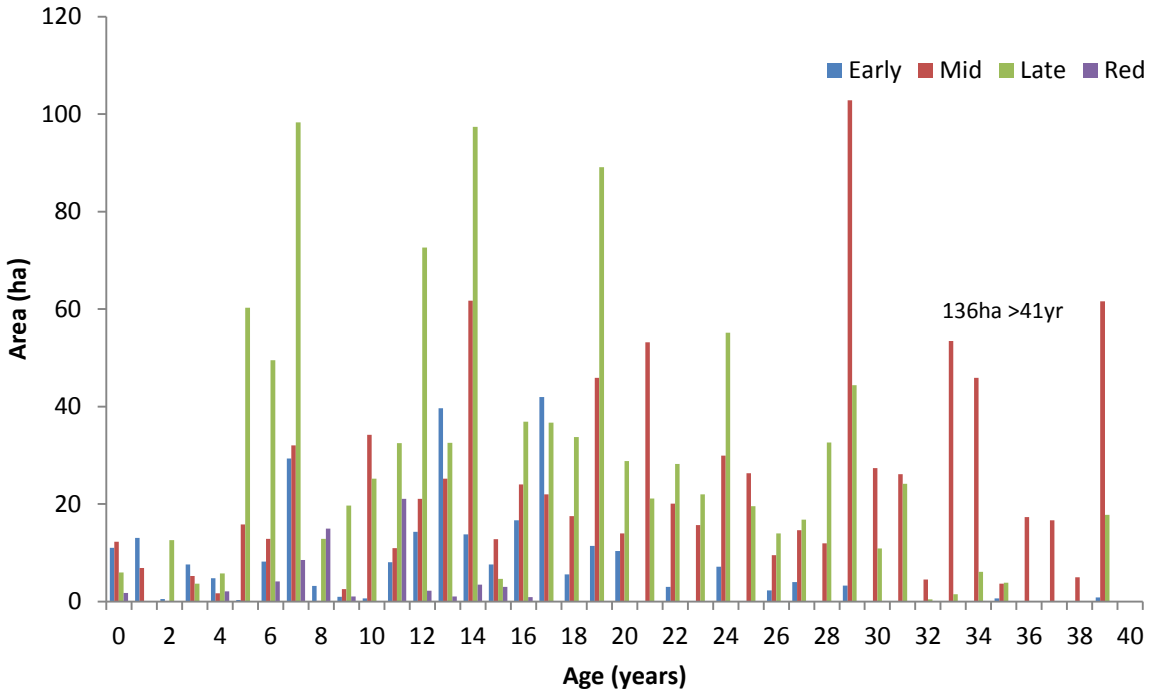


Figure 44: Riverina early, mid and late season navel orange tree age distribution



Riverina juicing oranges

Table 23: Riverina juicing orange subcategories

Subcategory	Area (ha)
Valencia	3,233
Valencia SL	303
Common orange	514
Total	**4,050**

Figure 45: Riverina juicing orange subcategories production area

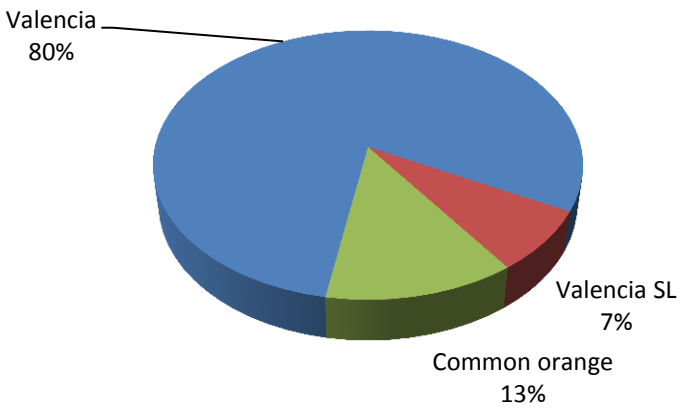


Figure 46: Riverina Valencia & Valencia SL orange tree age distribution

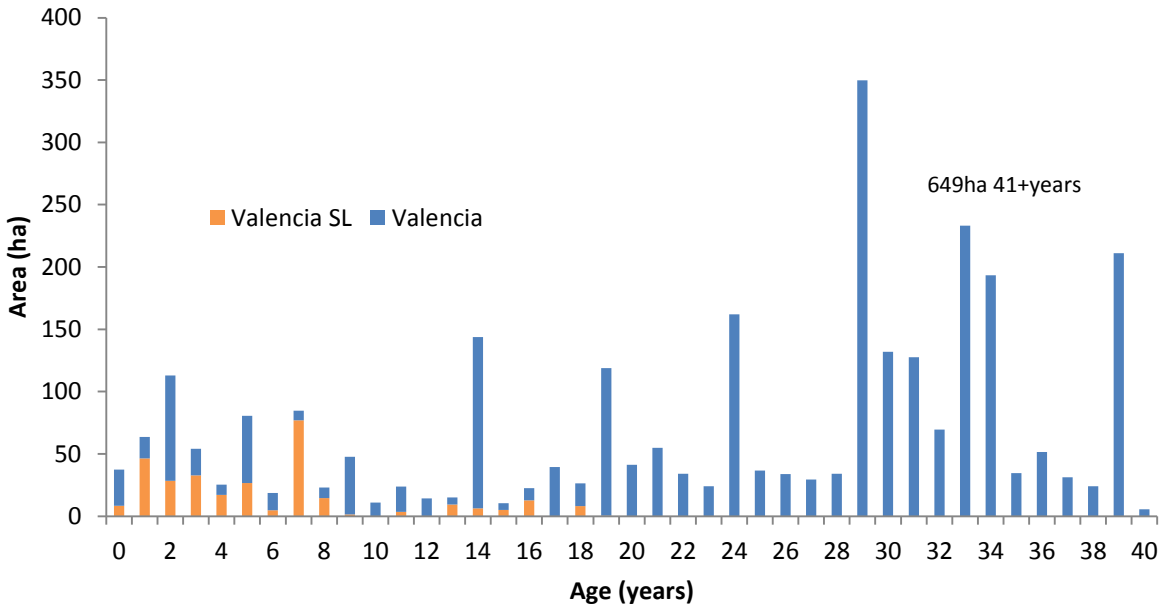
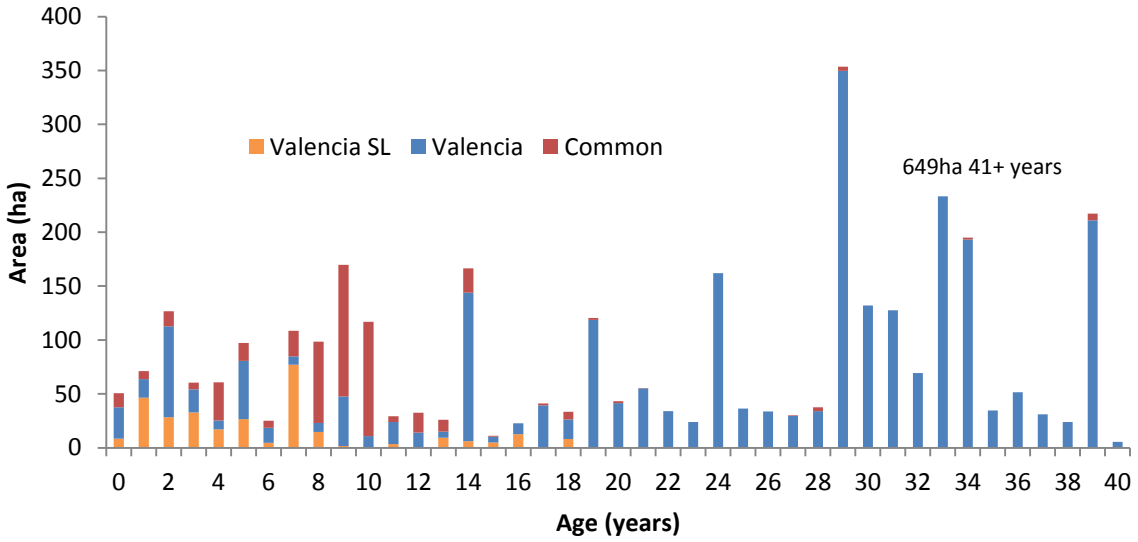


Figure 47: Riverina juicing orange tree age distribution



Riverland

In summary,

- the Riverland is Australia's second largest citrus production region, and is the largest region for the production of citrus for fresh consumption
- 18% of orchards account for 75% of production in the Riverland area
- late season navels (1,230 ha) are the Riverland's largest navel subcategory
- the Riverland is the largest mandarin producer in the tristate area (1,190 ha)
- Afourer (383 ha) and Imperial (316 ha) mandarins are the Riverland's dominant mandarin varieties
- In 2014, 20% (23 ha) of the Riverland's lemon plantings were up to six years old.

Table 24: Riverland orchard size and production area

Area (ha)	Number of Orchards	Area (ha)	%Orchards	% Area
<2 ha	52	60	18.9	1.2
2 to 5 ha	75	248	27.3	4.8
5 to 10 ha	61	430	22.2	8.4
10 to 20 ha	39	548	14.2	10.6
20 to 40 ha	26	680	9.5	13.2
40 to 100 ha	12	750	4.4	14.6
100 to 200 ha	4	471	1.5	9.2
200 to 400 ha	5	1,539	1.8	29.9
>400 ha	1	424	0.4	8.2
Total	**275**	**5,149**	**100**	**100**

Average orchard	Area (ha)
Riverland	18.7
National	21.0

Figure 48: Size of orchards - Riverland

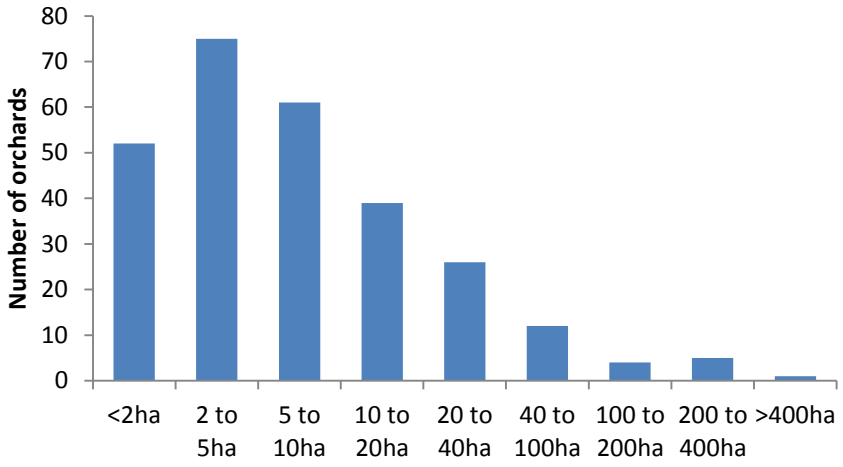


Figure 49: Riverland area of production by orchard size

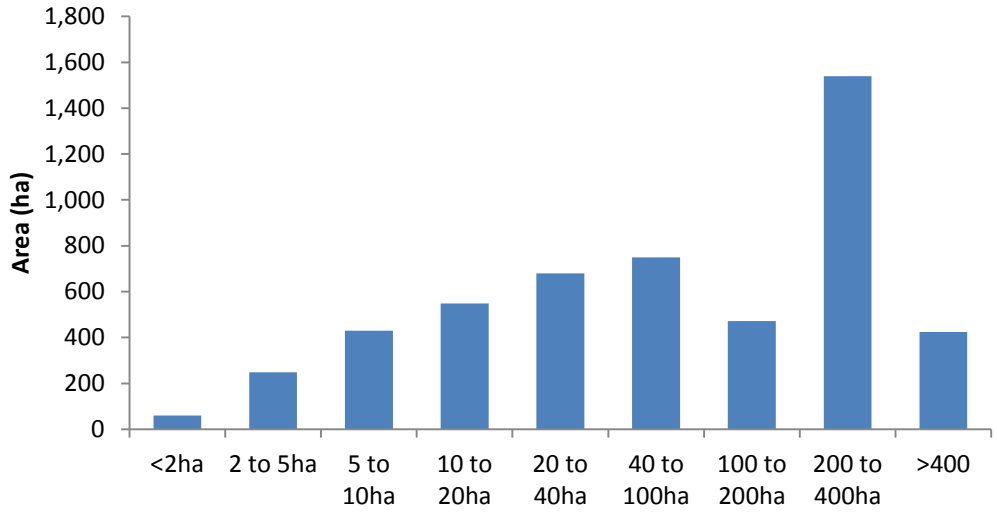
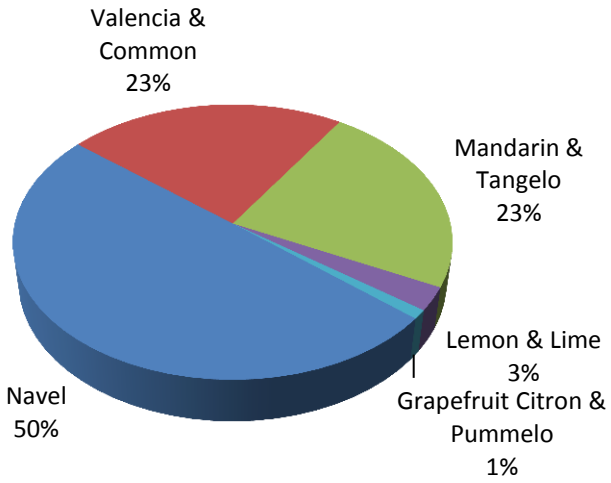


Table 25: Riverland citrus categories

Category	Area (ha)
Navel	2,568
Valencia & Common	1,196
Mandarin & Tangelo	1,191
Lemon & Lime	141
Grapefruit Citron & Pummelo	54
Total	**5,150**

Figure 50: Riverland citrus categories



Riverland navel oranges

Table 26: Riverland navel orange subcategories

Subcategory	Area (ha)
Early season navel	547
Mid season navel	740
Late season navel	1,230
Red flesh navel	52
Total	**2,570**

Figure 51: Riverland navel orange subcategories

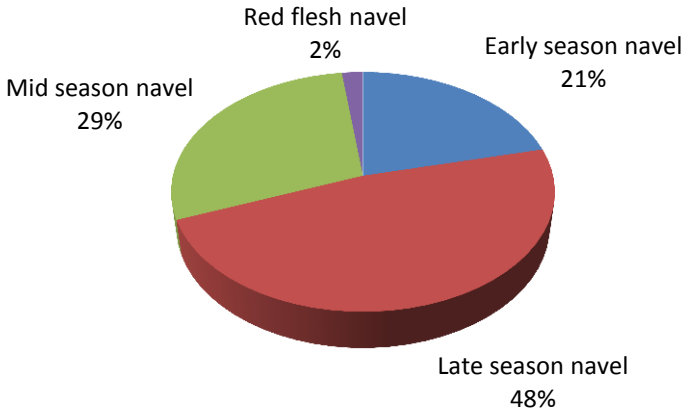


Figure 52: Riverland early season navel orange tree age distribution

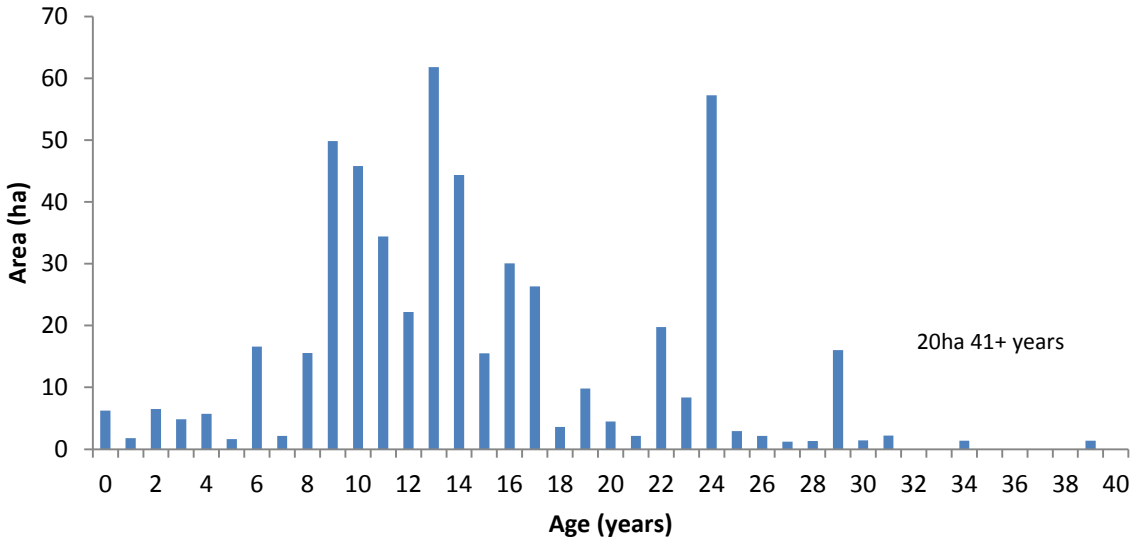


Figure 53: Riverland mid season navel orange tree age distribution

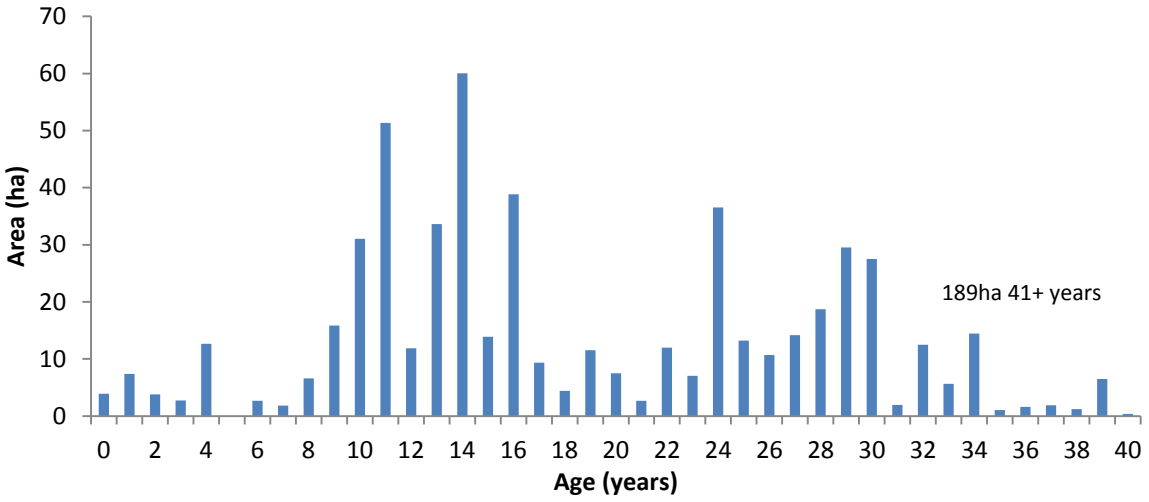


Figure 54: Riverland late season navel orange tree age distribution

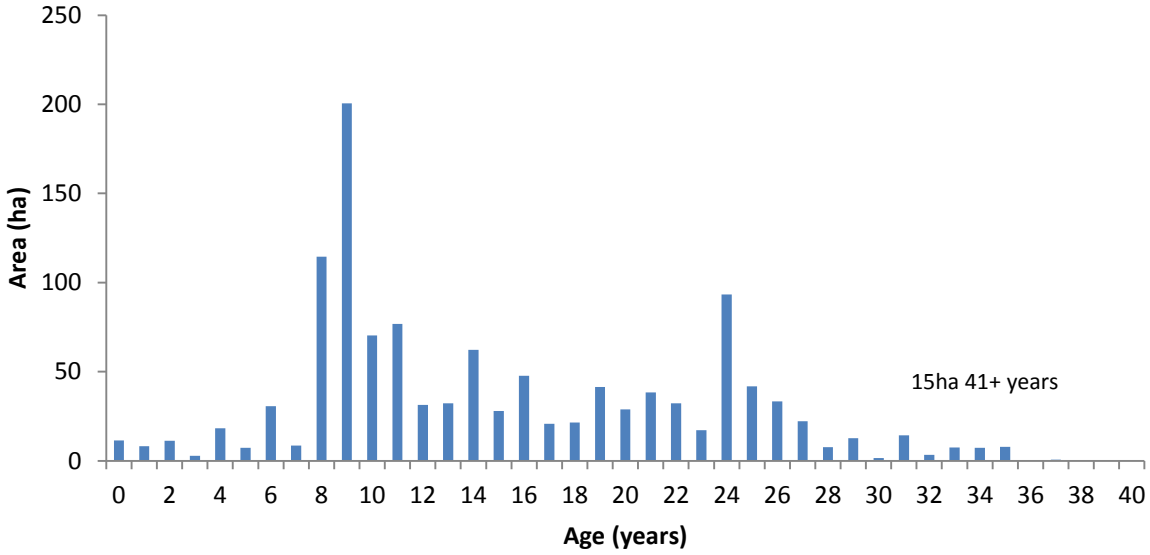


Figure 55: Riverland red flesh navel orange tree age distribution

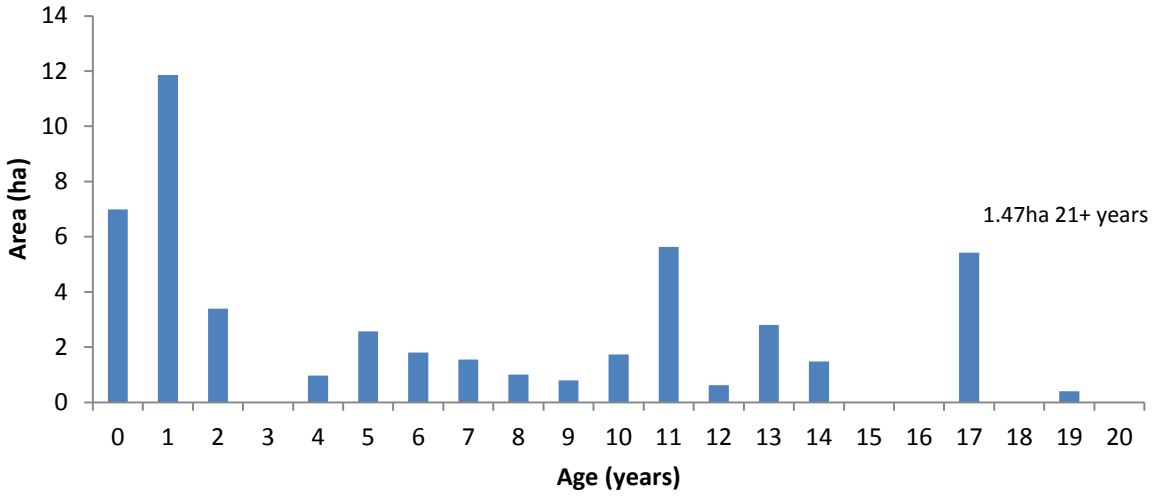
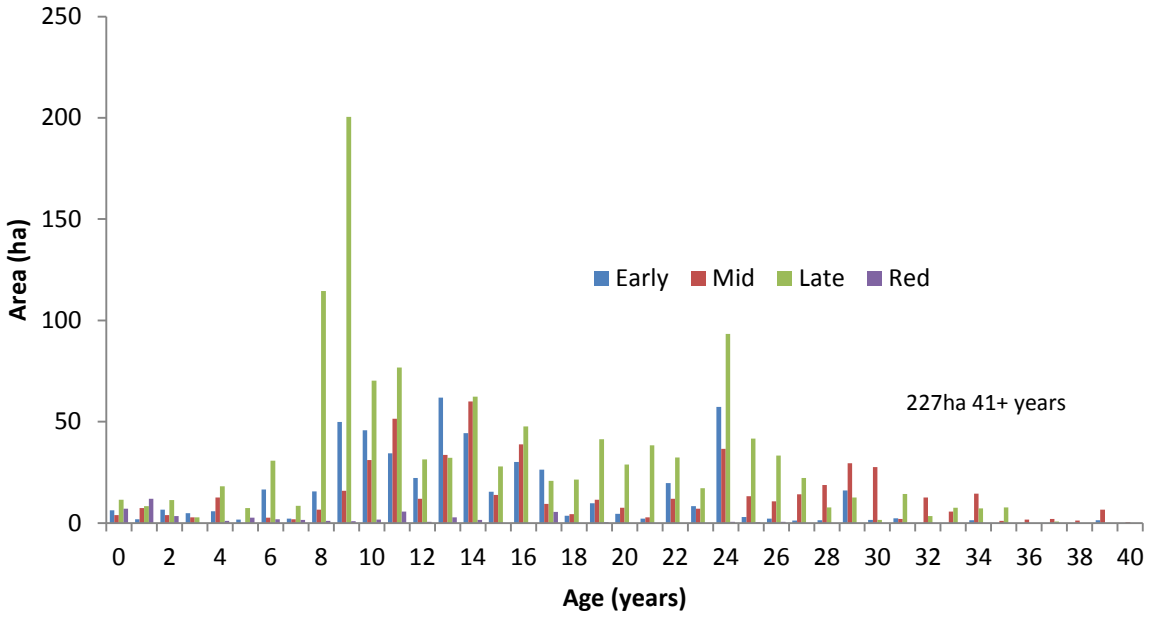


Figure 56: Riverland early, mid and late season navel orange tree age distribution



Riverland juicing orange

Table 27: Riverland juicing orange subcategories

Subcategory	Area (ha)
Common	79
Valencia	1,079
Valencia Seed Less	36
Total	**1,194**

Figure 57: Riverland juicing orange subcategories

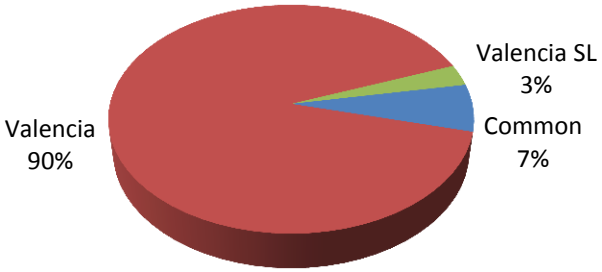
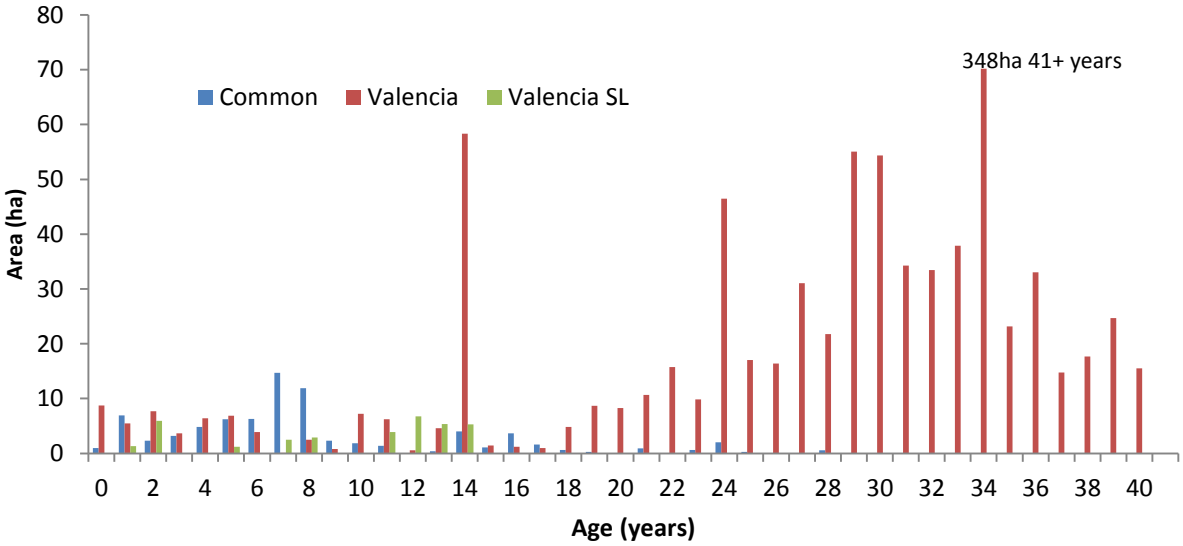


Figure 58: Riverland juice orange tree age distribution



Riverland mandarins

Table 28: Riverland major mandarin varieties

Variety	Area (ha)	%Total
Afourer	383	34.6
Imperial	316	28.6
Murcott	84	7.6
Other	324	29.3
Total	**1,108**	**100**

Figure 59: Riverland major mandarin varieties

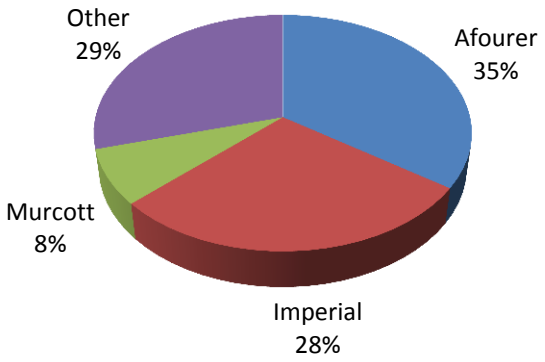


Figure 60: Riverland Imperial mandarin tree age distribution

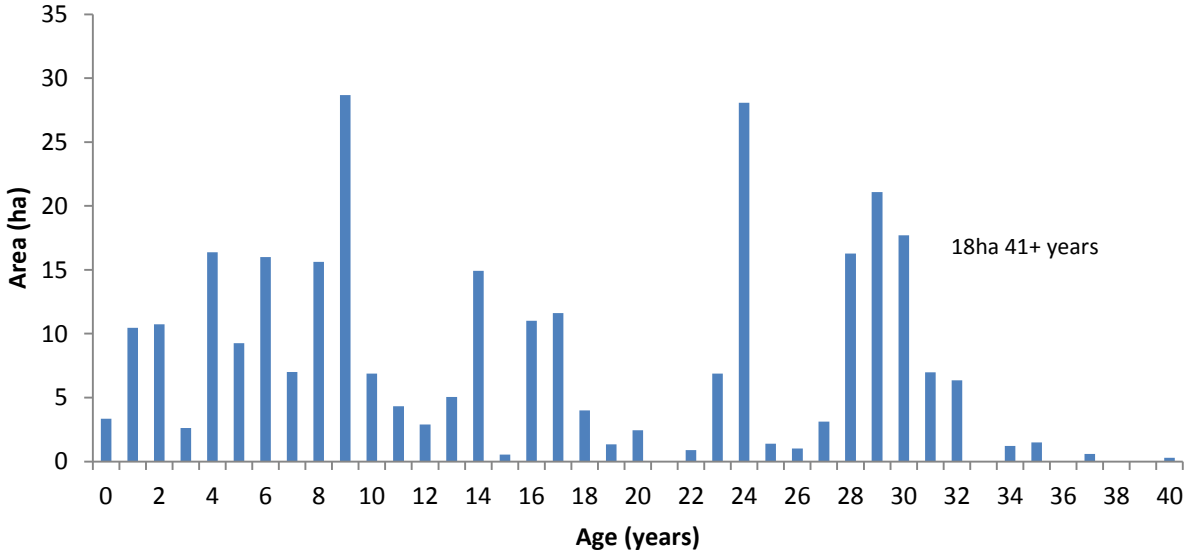
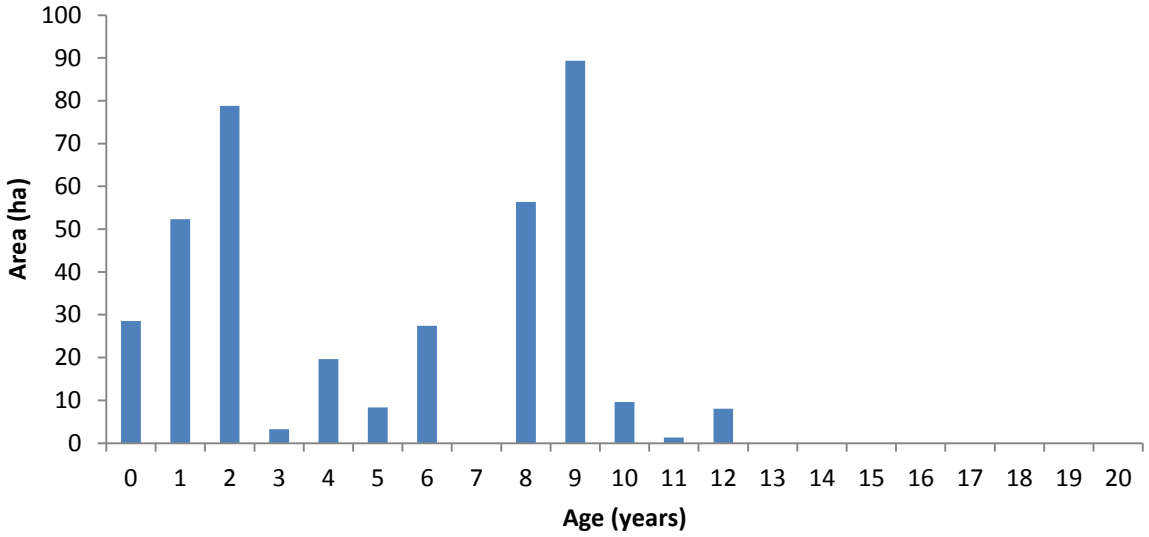
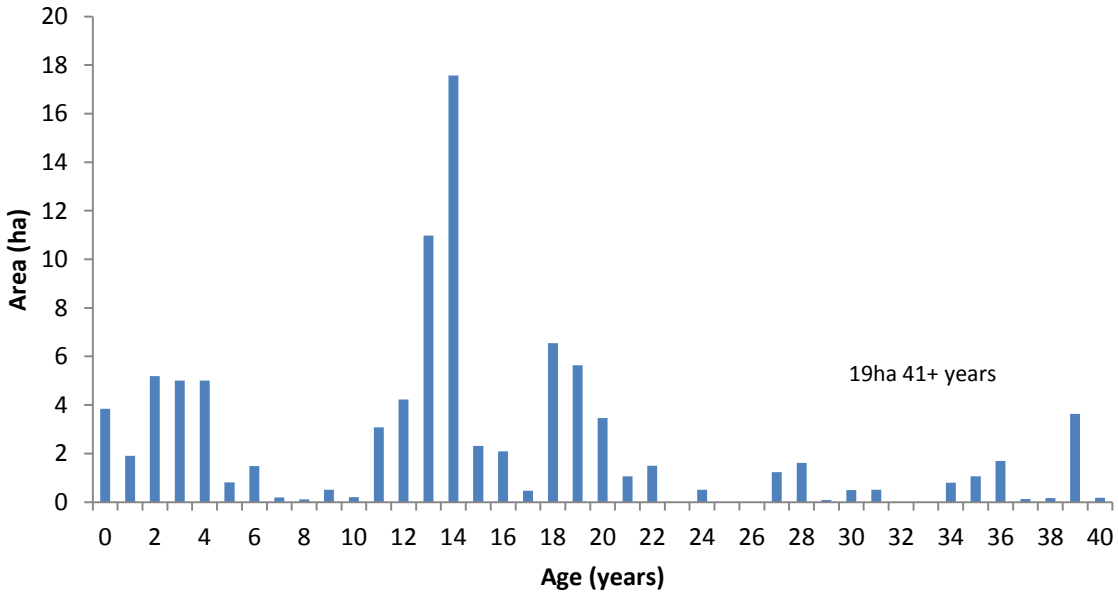


Figure 61: Riverland Afourer mandarin tree age distribution



Riverland lemons

Figure 62: Riverland lemon tree age distribution



Murray Valley

In summary,

- The Murray Valley is the largest navel orange (2,916 ha) production region in Australia.
- 42% of orchards were less than 10 ha, representing 11% of the Murray Valley production area.
- The Murray Valley has the largest production area for both early season (724 ha) and late season (1,631 ha) navel oranges in Australia.
- In 2014, the Murray Valley had 157 ha of non-bearing navel oranges, the largest of any region.
- Afourer (331 ha) and Imperial (263 ha) mandarins are the Murray Valley's dominant mandarin varieties.
- The Murray Valley is Australia's second largest lemon production region (186 ha).
- In 2014, 28% (53 ha) of the Murray Valley's lemon production was non-bearing.

Table 29: Murray Valley orchard size and area of production

Area (ha)	Number of Orchards	Area (ha)	% Orchards	% Area
<2 ha	25	24	10.1	0.5
2 to 5 ha	26	84	10.5	1.9
5 to 10 ha	53	394	21.4	8.8
10 to 20 ha	78	1,093	31.5	24.5
20 to 40 ha	48	1,381	19.4	30.9
40 to 100 ha	13	670	5.2	15.0
100 to 200 ha	4	554	1.6	12.4
200 to 400 ha	1	265	0.4	5.9
Total	**248**	**4,465**	**100**	**100**
Average orchard size	Area (ha)			
Murray Valley	17.9			
National	21			

Figure 63: Size of orchards - Murray Valley

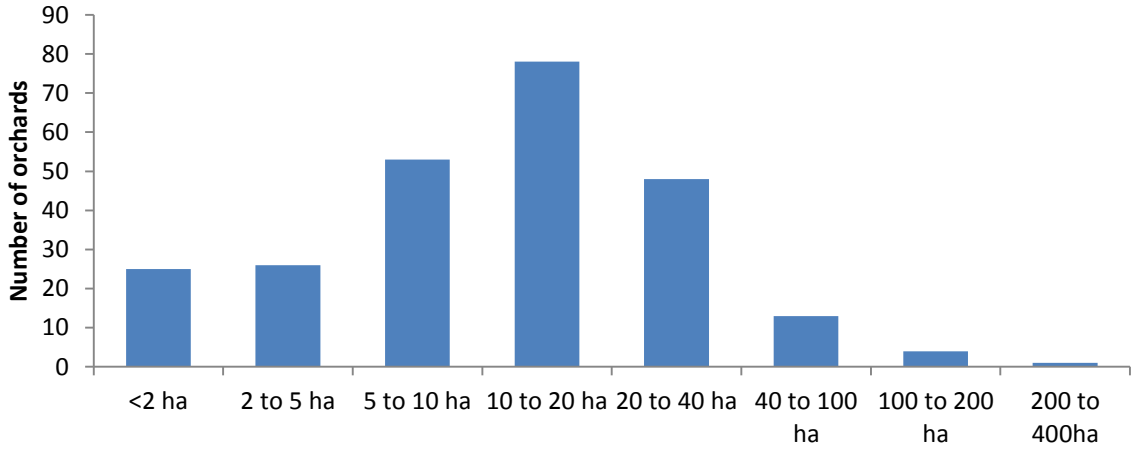


Figure 64: Murray Valley area of production by orchard size (ha)

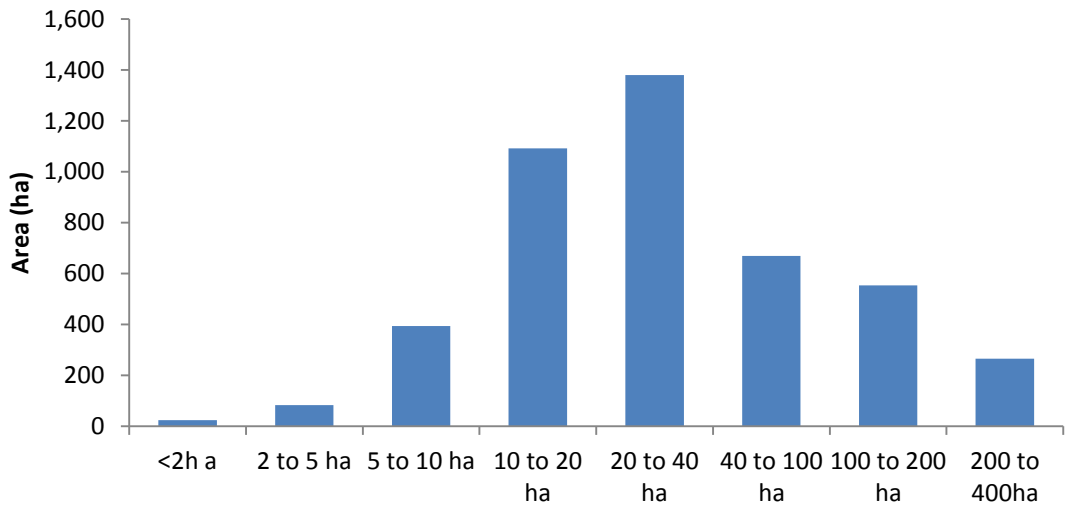
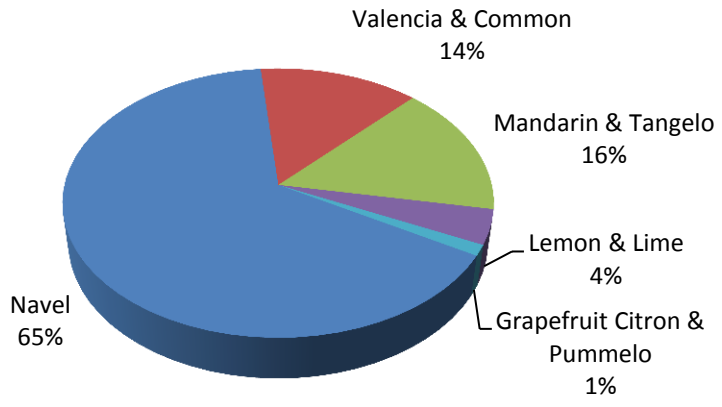


Table 30: Murray Valley citrus categories (ha)

Category	Area (ha)
Navel	2,910
Valencia & Common	609
Mandarin & Tangelo	702
Lemon & Lime	186
Grapefruit Citron & Pummelo	58
Total	**4,465**

Figure 65: Murray Valley citrus categories



Murray Valley navel oranges

Table 31: Murray Valley navel orange subcategories

Subcategory	Area (ha)
Early season navel	724
Mid season navel	507
Late season navel	1,631
Red flesh navel	54
Total	**2,916**

Figure 66: Murray Valley navel orange subcategories

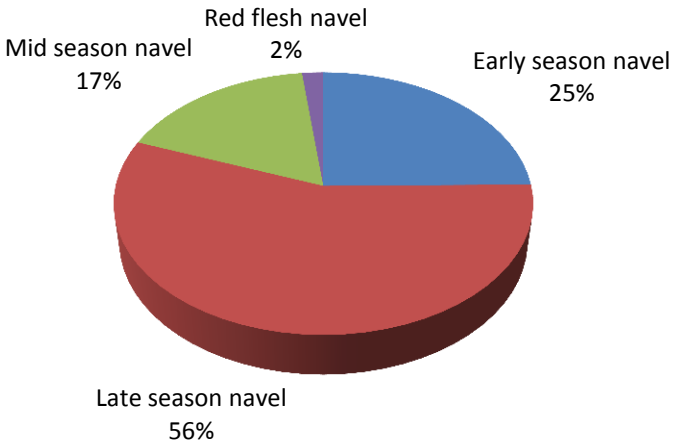


Figure 67: Murray Valley early season navel orange tree age distribution

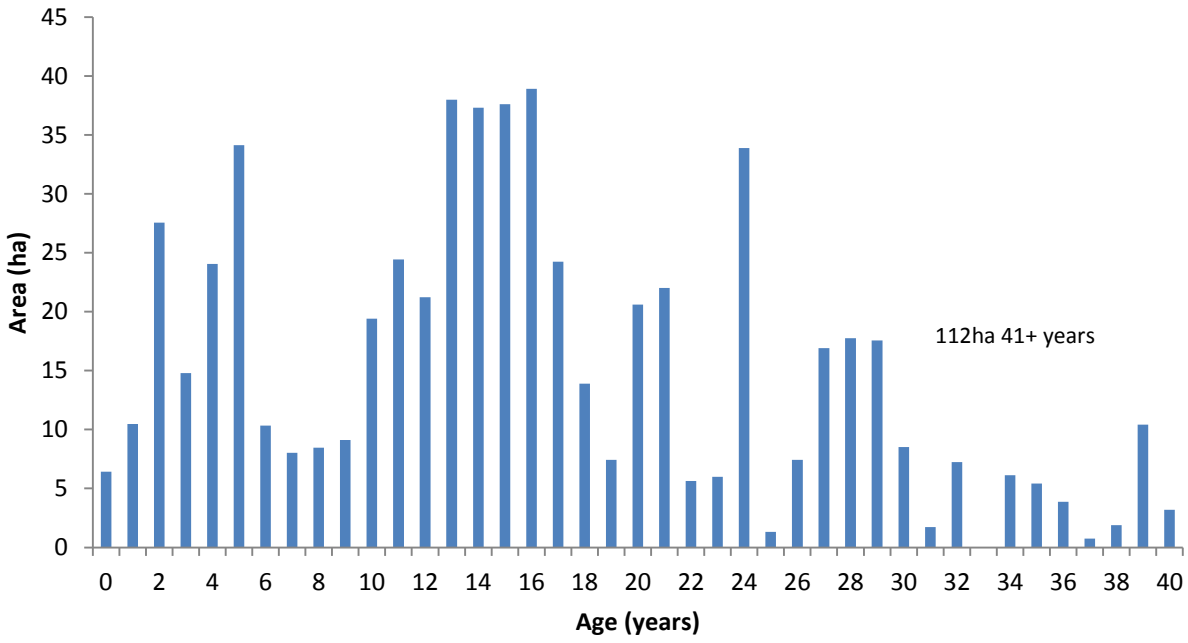


Figure 68: Murray Valley mid season navel orange tree age distribution

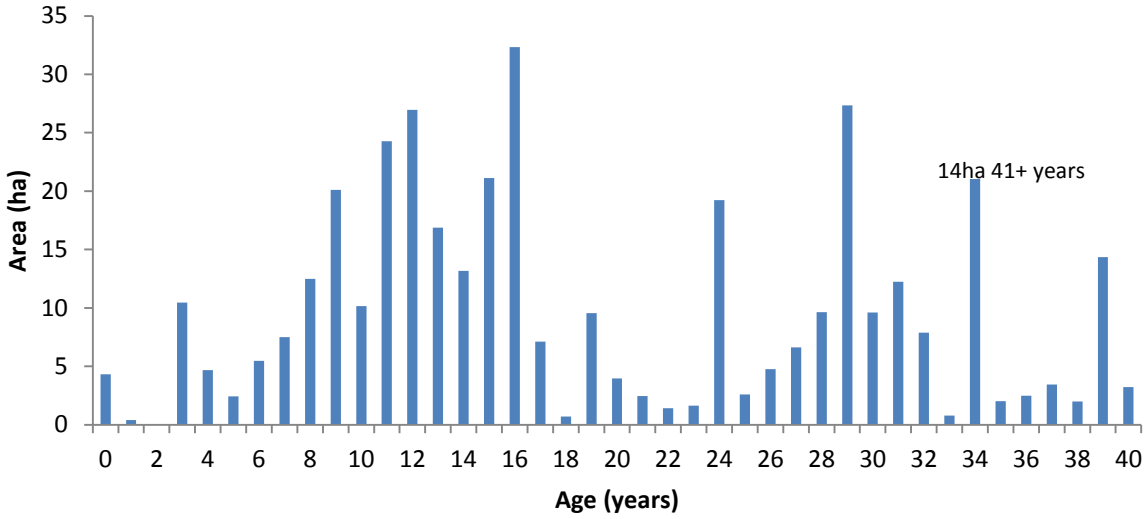


Figure 69: Murray Valley late season navel orange tree age distribution

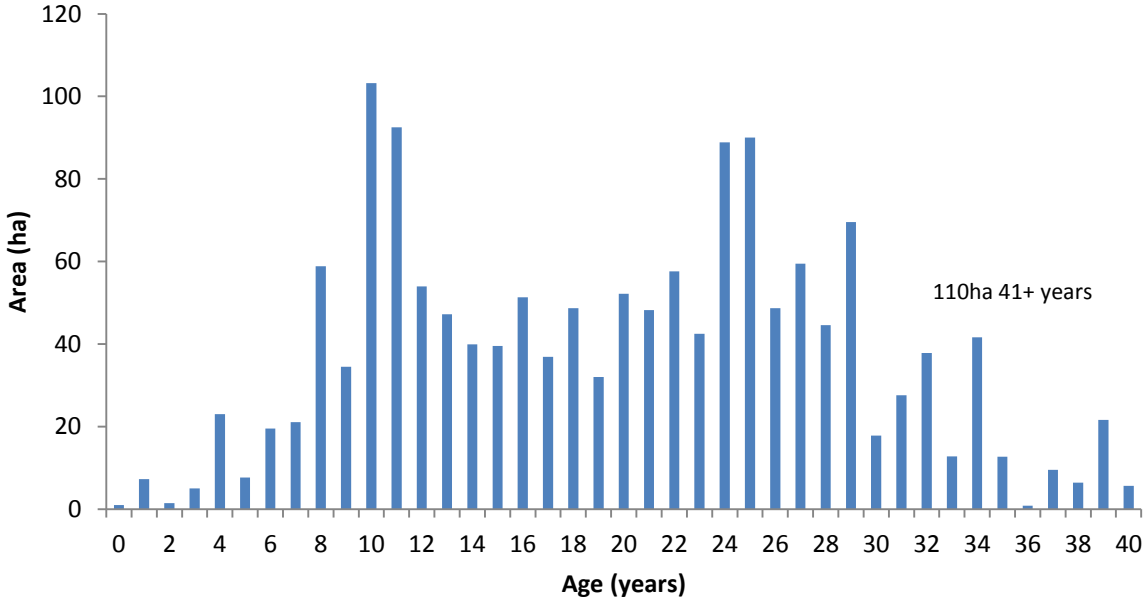


Figure 70: Murray Valley red flesh navel orange tree age distribution

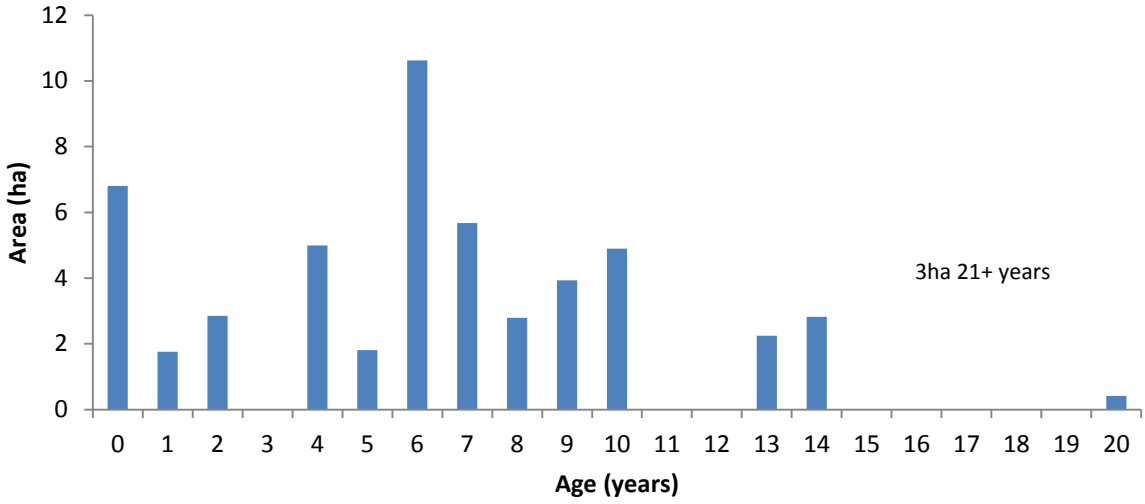
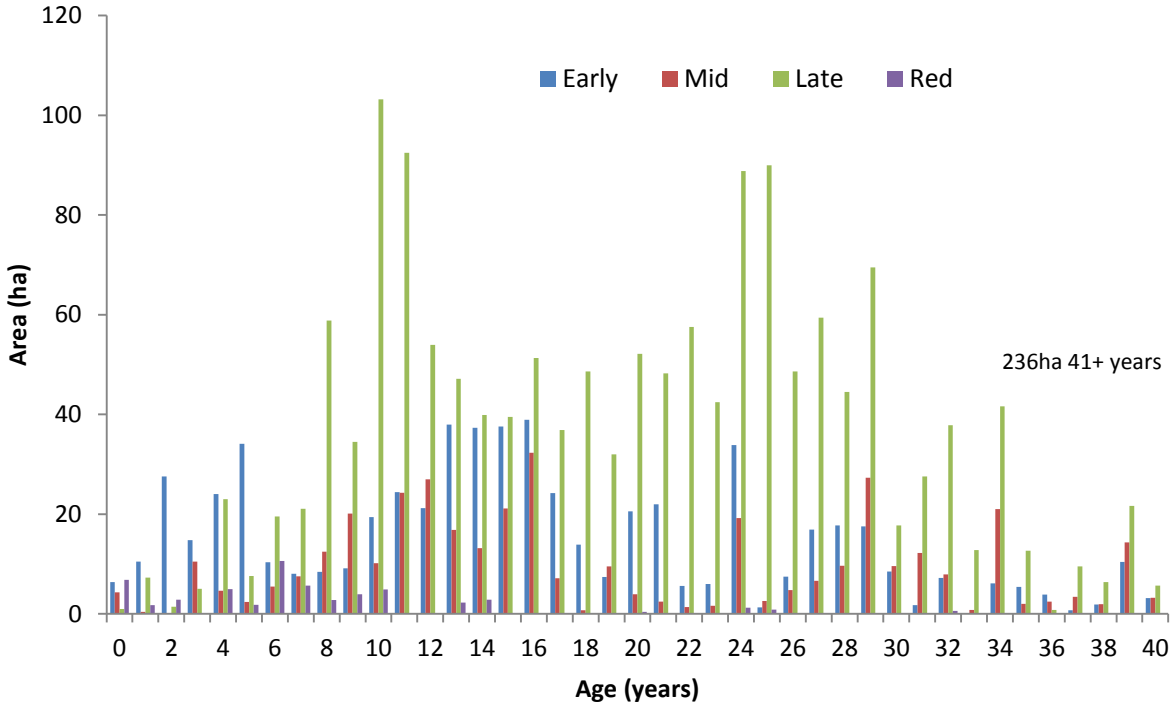


Figure 71: Murray Valley early, mid and late season navel orange tree age distribution



Murray Valley juicing oranges

Table 32: Murray Valley juicing orange subcategories

Subcategory	Area (ha)
Common	39
Valencia	547
Valencia SL	16
Total	**602**

Figure 72: Murray Valley juicing orange subcategories

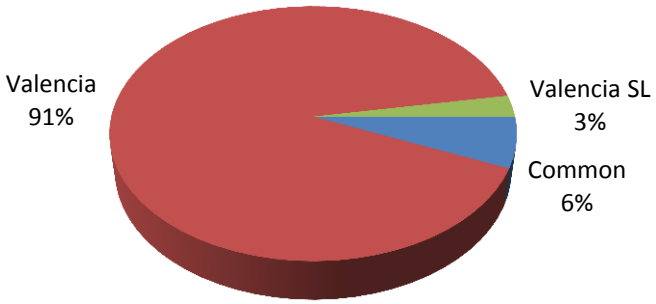
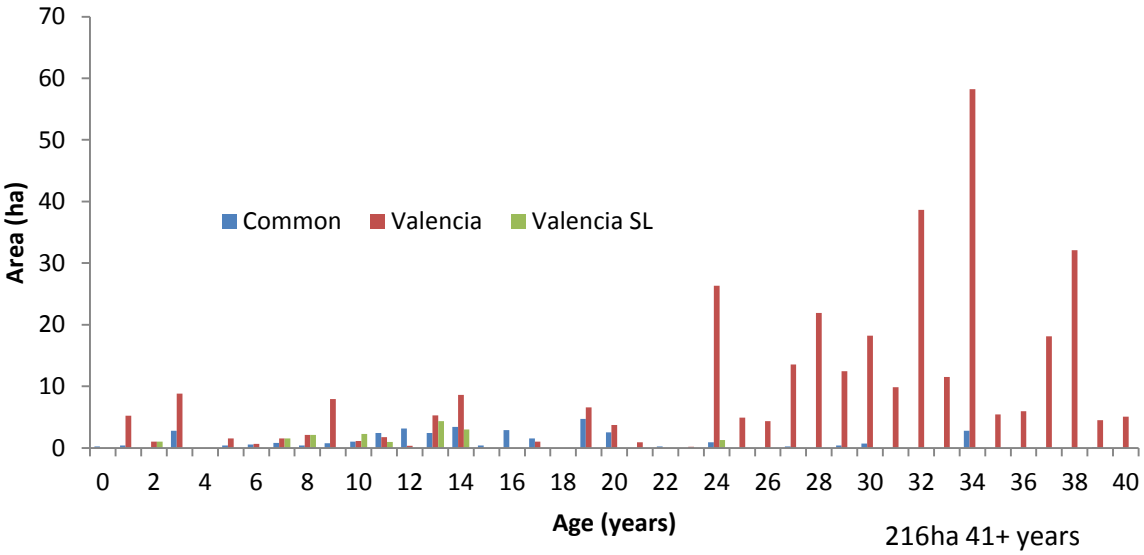


Figure 73: Murray Valley juice orange tree age distribution



Murray Valley mandarins

Table 33: Murray Valley major mandarin varieties

Variety	Area (ha)
Afourer	330.9
Imperial	262.8
Other	68.4
Total	**662.1**

Figure 74: Murray Valley major mandarin varieties

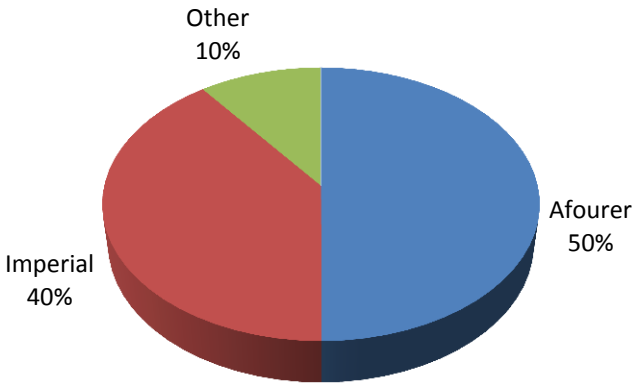


Figure 75: Murray Valley Imperial mandarin tree age distribution

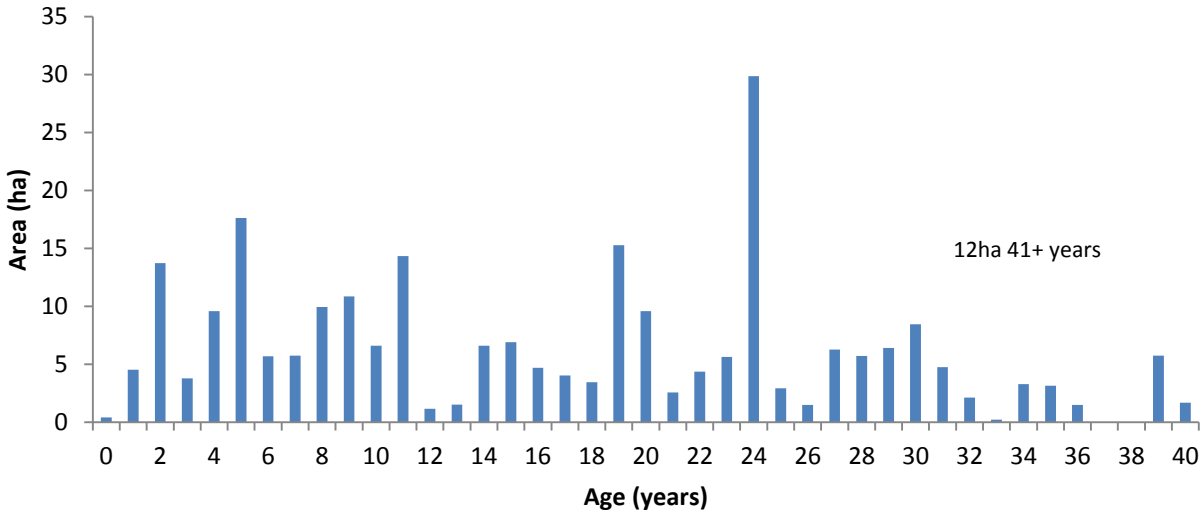
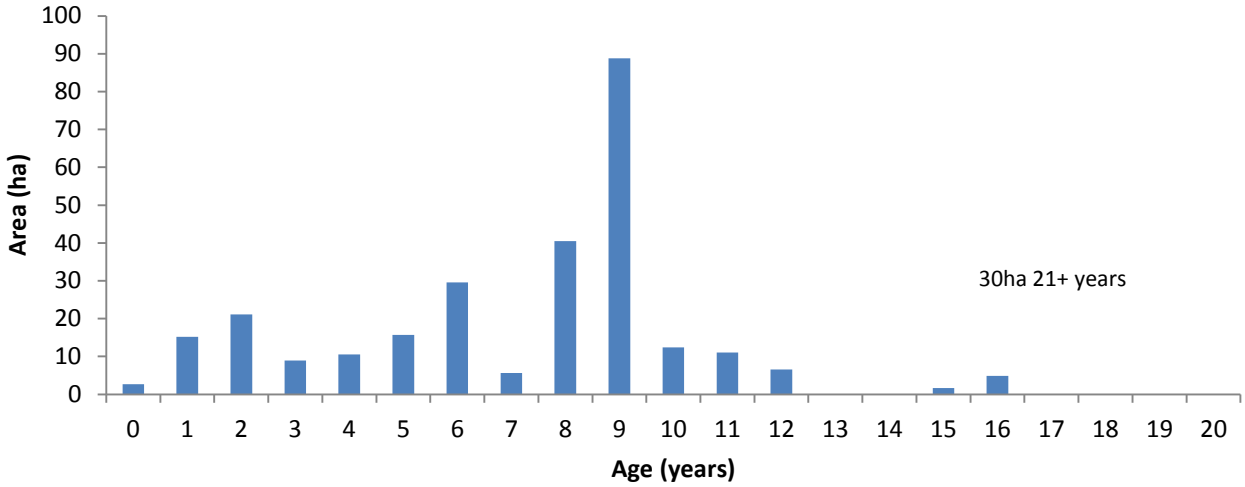
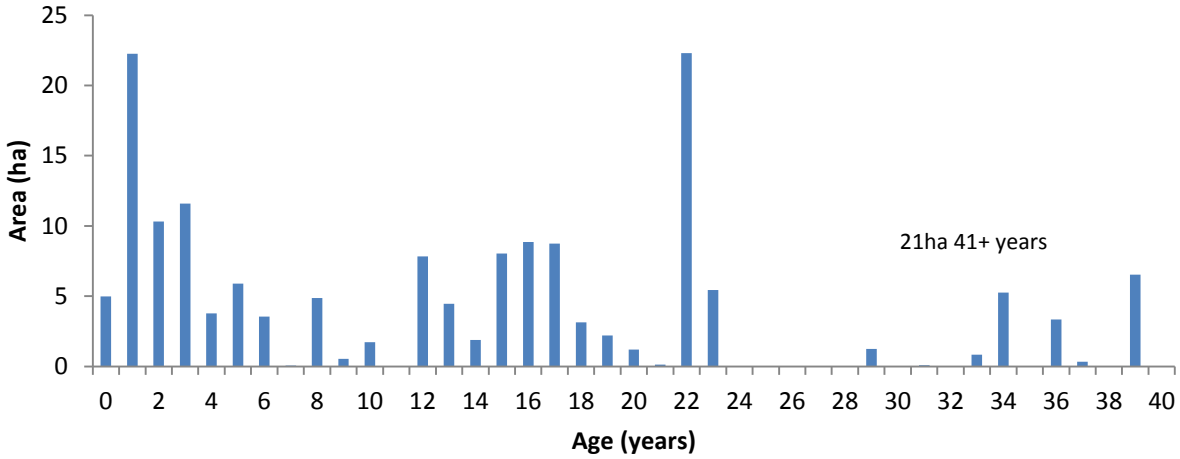


Figure 76: Murray Valley Afourer mandarin tree age distribution



Murray Valley lemons

Figure 77: Murray Valley lemon tree age distribution



Queensland

In summary,

- Queensland is Australia's largest mandarin production region (2,058 ha) and the largest lemon (469 ha) and lime (214 ha) production region.
- In 2014, 49% of orchards were 20 ha or larger representing 86% of citrus production in Queensland.
- Murcott (1,049 ha) Imperial (884 ha) and Low-Seeded Murcott (469 ha) mandarins are the largest mandarin plantings in Queensland.

Table 34: Queensland orchard size and area of production

Area (ha)	Number of Orchards	Area (ha)	% Orchards	% Area
<2ha	9	12	7.8	0.3
2 to 5 ha	11	35	9.6	0.9
5 to 10 ha	13	104	11.3	2.7
10 to 20 ha	26	404	22.6	10.3
20 to 40 ha	28	777	24.3	19.8
40 to 100 ha	23	1,414	20.0	36.1
100 to 200 ha	3	446	2.6	11.4
200 to 400 ha	2	725	1.7	18.5
Total	**115**	**3,917**	**100**	**100**

Average orchard size	Area (ha)
Queensland	34
National	21

Figure 78: Size of orchards - Queensland

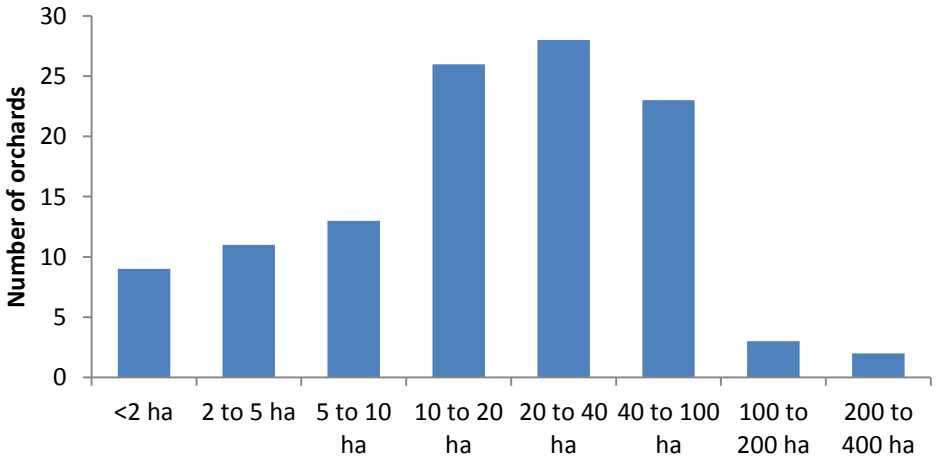


Figure 79: Queensland production area by orchard size

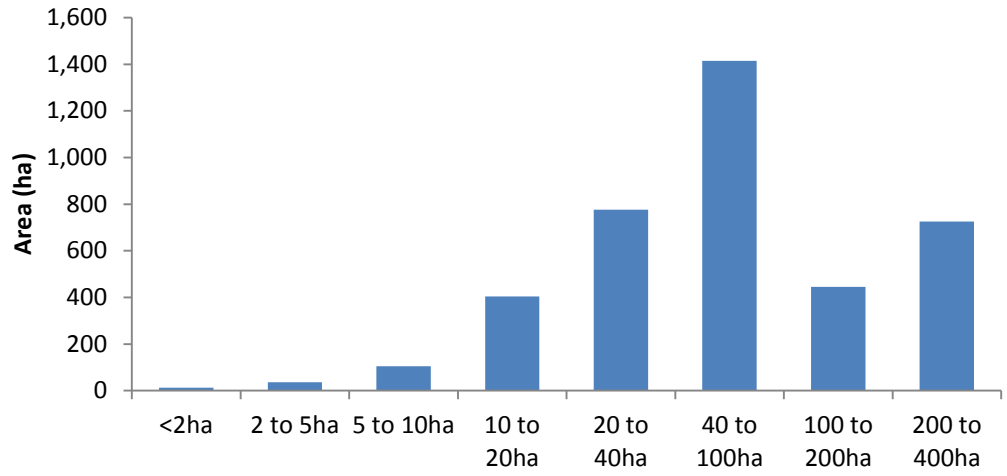


Table 35: Queensland citrus categories

Category	Area (ha)
Mandarin & Tangelo	3,058
Lemon & Lime	683
Navel	88
Valencia & Common	57
Grapefruit Citron & Pummelo	32
Total	**3,918**

Figure 80: Queensland citrus categories

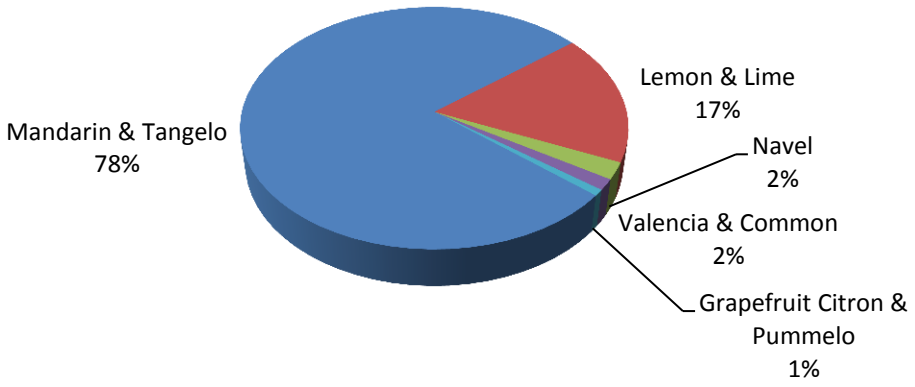


Table 36: Queensland major mandarin varieties

Variety	Area (ha)
Imperial	884
Murcott	1,049
Murcott LS	469
Other*	655
Total	**3,058**
*includes Tangelo	

Figure 81: Queensland major mandarin varieties

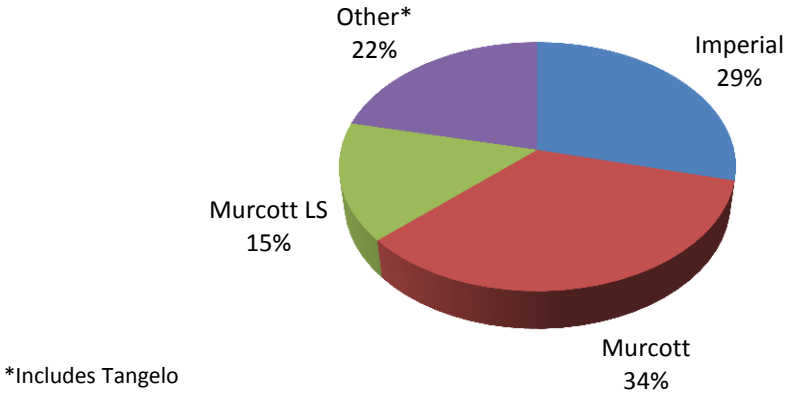


Figure 82: Queensland Imperial mandarin tree age distribution

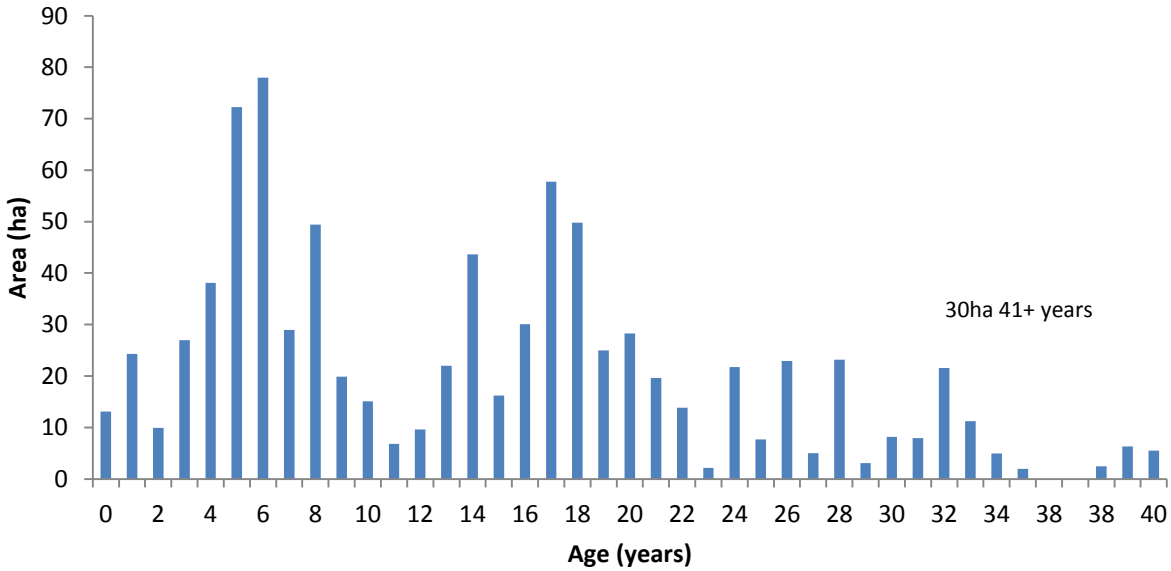


Figure 83: Queensland Murcott & Murcott LS tree age distribution

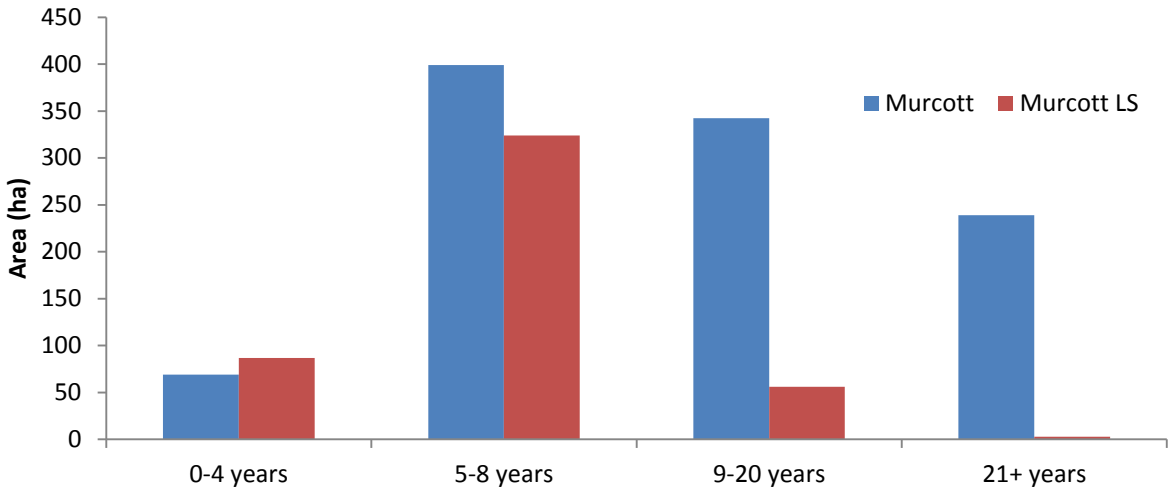
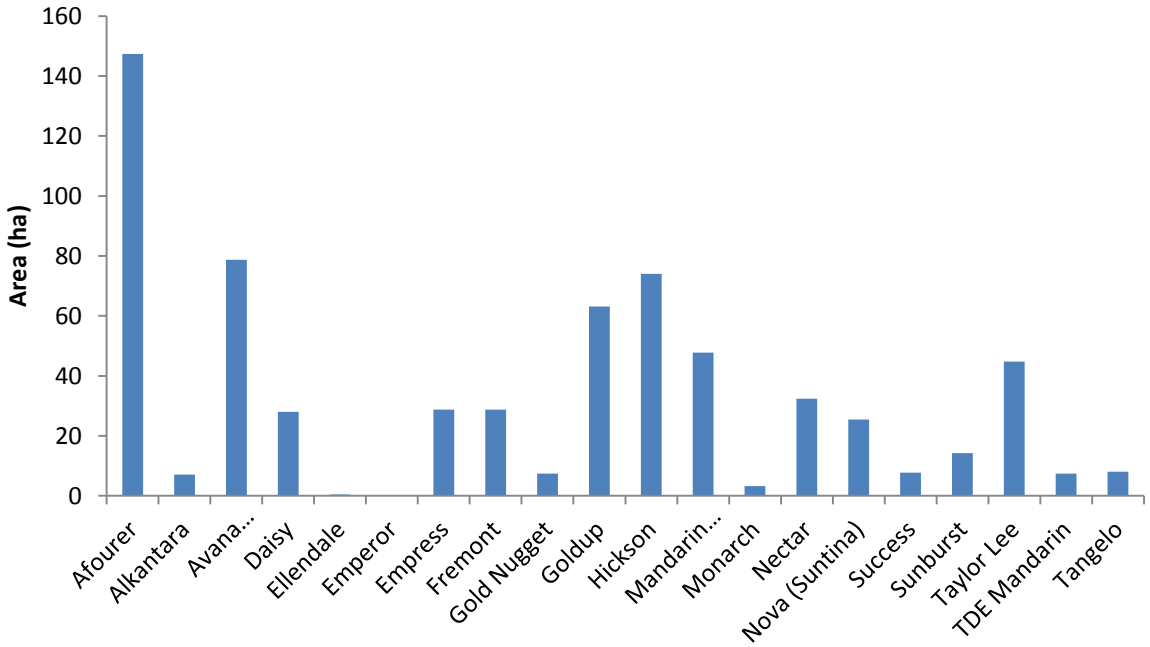


Figure 84: Queensland minor mandarin varieties (ha)



Queensland lemons and limes

Table 37: Queensland lemons and limes

Category	Area (ha)
Lemon	469
Lime	214
Total	**683**

Figure 85: Queensland lemons and limes

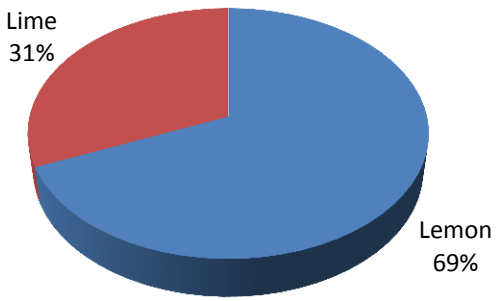
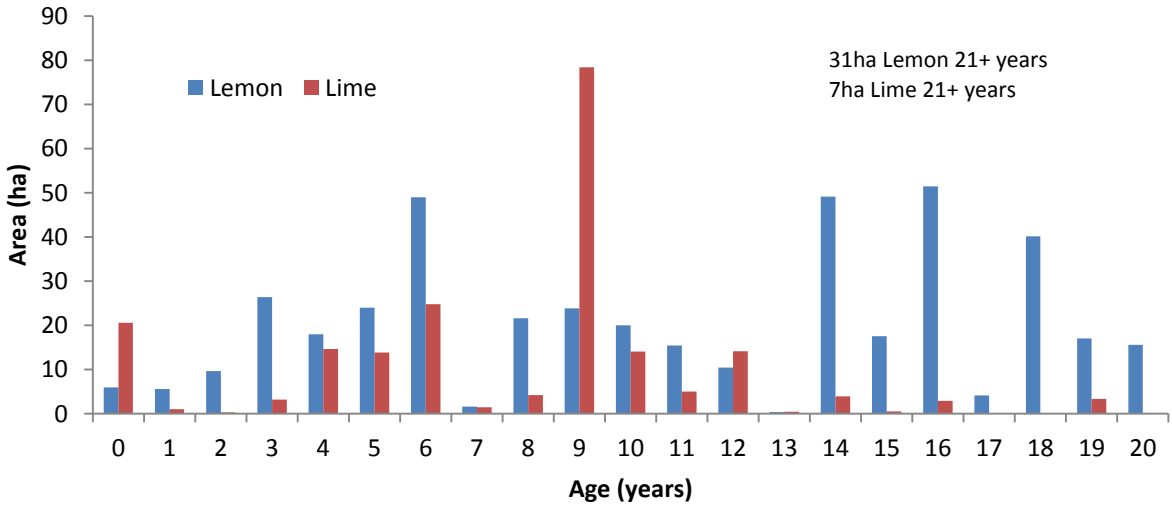


Figure 86: Queensland lemon and lime tree age distribution



Western Australia

In summary,

- 26% of orchards were 10 ha or larger in 2014, representing 88% of Western Australia's citrus plantings.
- Navel oranges (505 ha) are the largest citrus planting in Western Australia.
- Late season navel oranges are the largest navel subcategory planted in Western Australia.
- 23% (117 ha) of Western Australia's navel oranges were non-bearing in 2014.
- Imperial mandarins (68 ha) Afourer mandarins (58 ha) and Clementines (32 ha) are Western Australia's largest mandarin plantings.

Table 38: Western Australia orchard size and area of production

Area (ha)	Number of Orchards	Area (ha)	% Orchards	% Area
<2 ha	18	15	31.6	1.5
2 to 5 ha	18	57	31.6	5.9
5 to 10 ha	6	40	10.5	4.2
10 to 20 ha	4	71	7.0	7.4
20 to 40 ha	5	116	8.8	12.0
40 to 100 ha	4	251	7.0	26.1
100 to 400 ha	2	413	3.5	42.9
Total	**57**	**963**	**10**	**100**

Average orchard size	Area (ha)
West. Australia	17.2
National	21

Figure 87: Size of orchards - Western Australia

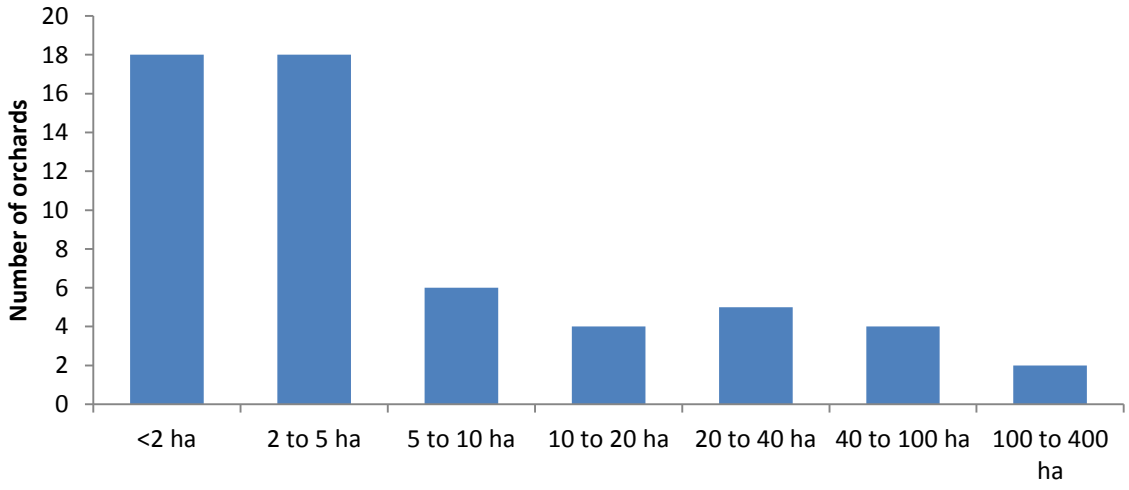


Figure 88: Western Australia production area by orchard size (ha)

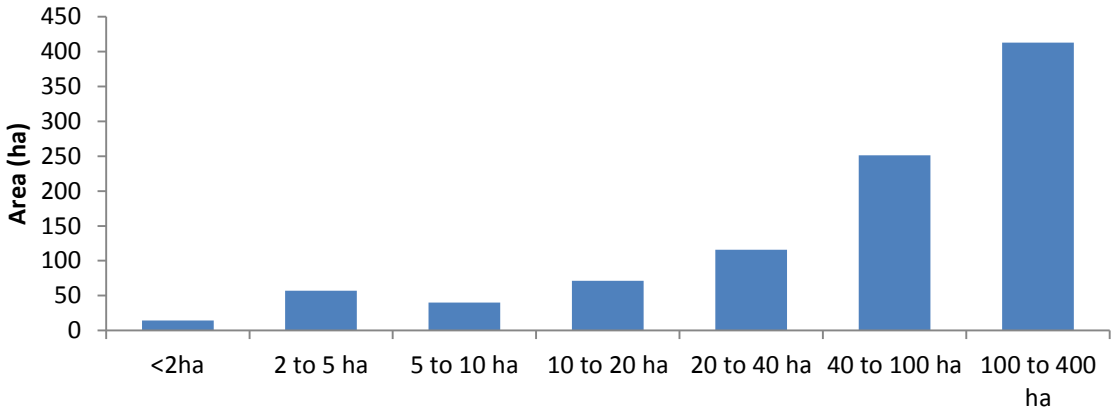
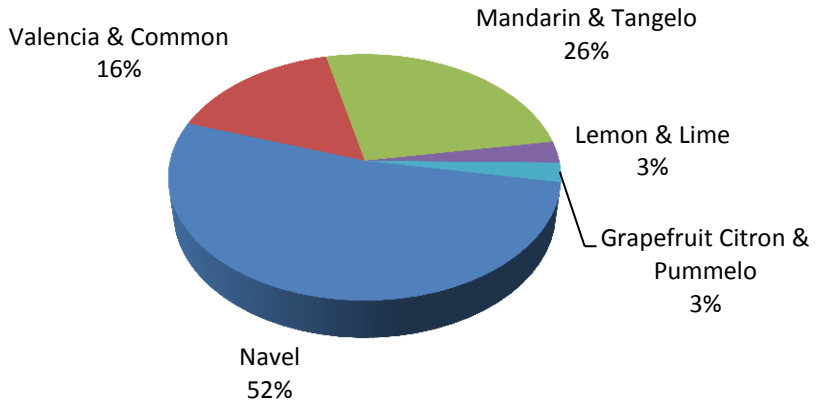


Table 39: Western Australia citrus categories

Category	Area (ha)
Navel	505
Valencia & Common	156
Mandarin & Tangelo	251
Lemon & Lime	27
Grapefruit Citron & Pummelo	25
Total	**963**

Figure 89: Western Australia citrus categories



Western Australia navel oranges

Table 40: Western Australia navel subcategories

Subcategory	Area	% Total
Early season navel	113	22.4
Late season navel	200	39.7
Mid season navel	162	32.1
Red flesh navel	29	5.8
Total	**505**	**100**

Figure 90: Western Australia navel subcategories (ha)

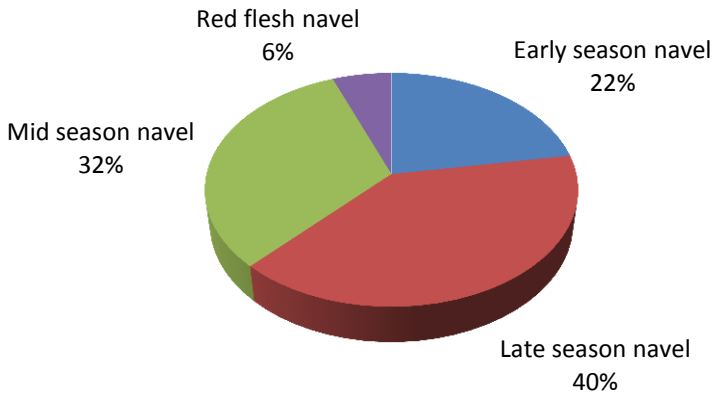


Figure 91: Western Australia early navel orange tree age distribution

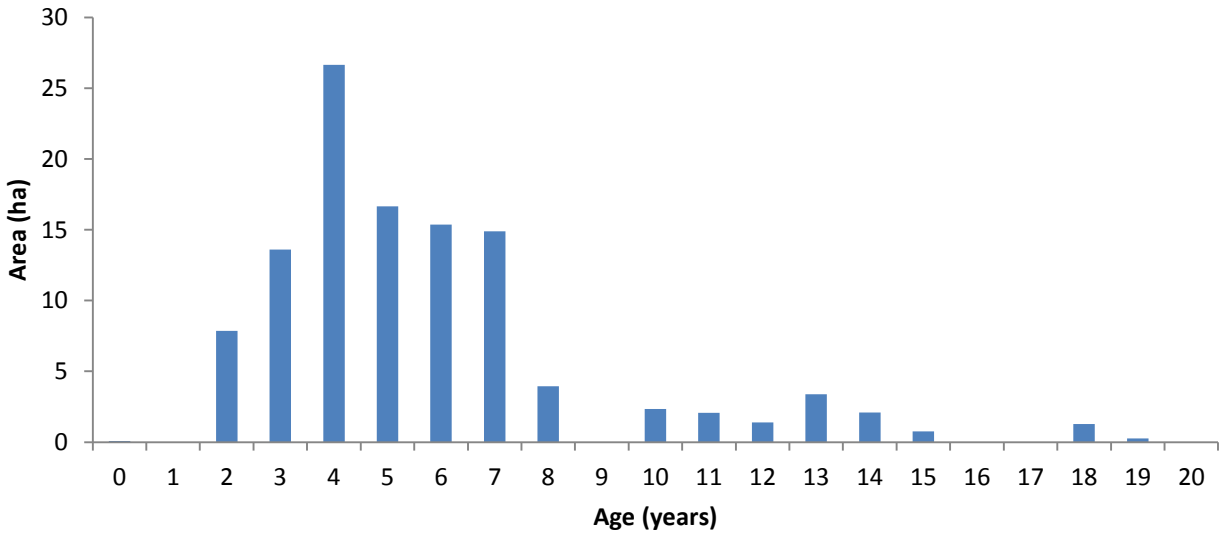


Figure 92: Western Australia mid season navel orange tree age distribution

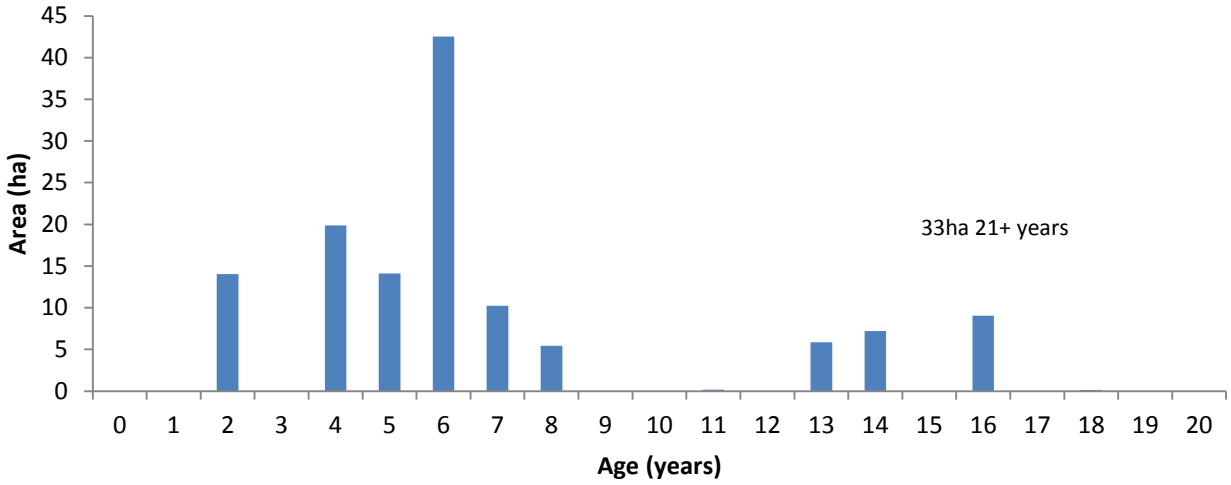


Figure 93: Western Australia late season navel orange tree age distribution

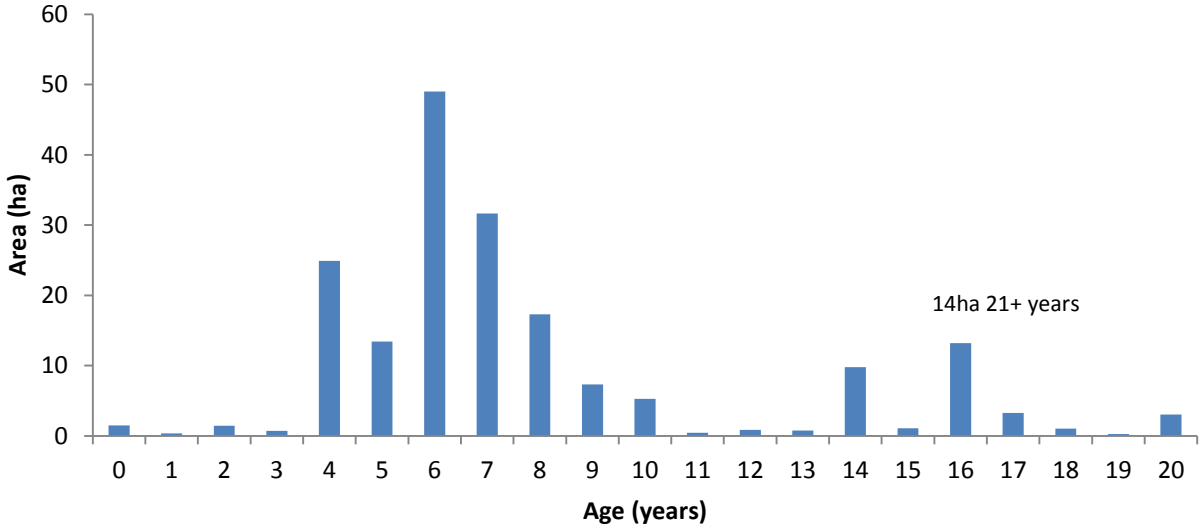
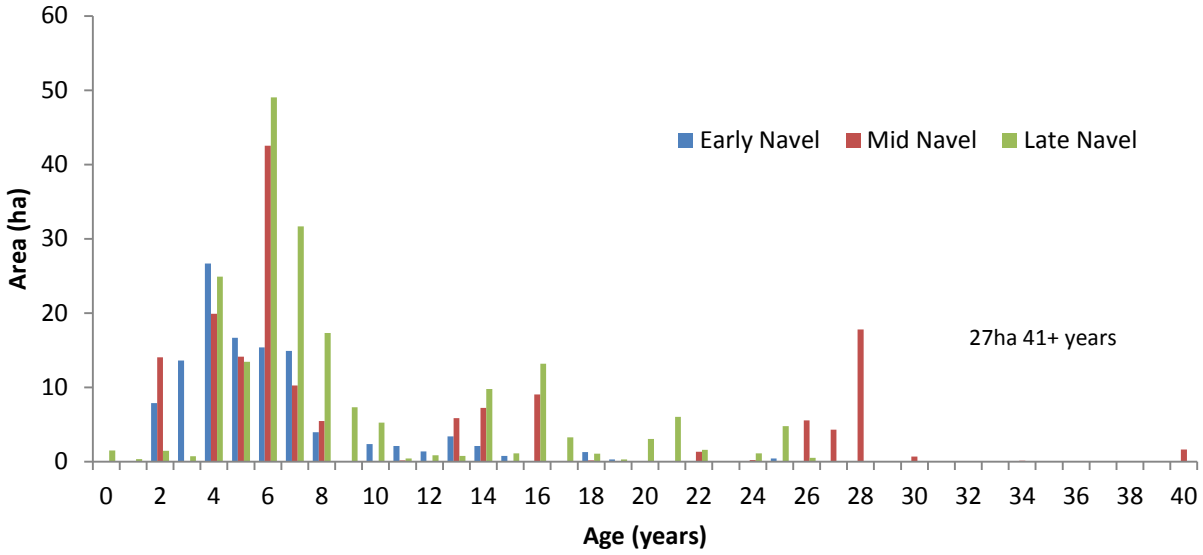


Figure 94: Western Australian early, mid and late season navel orange, tree age distribution



Western Australia mandarins

Table 41: Western Australia major mandarin varieties

Variety	Area (ha)
Afourer	58
Clementine	32
Imperial	68
Hickson	32
Mystique	23
Other	34
Total	**248**

Figure 95: Western Australia major mandarin varieties

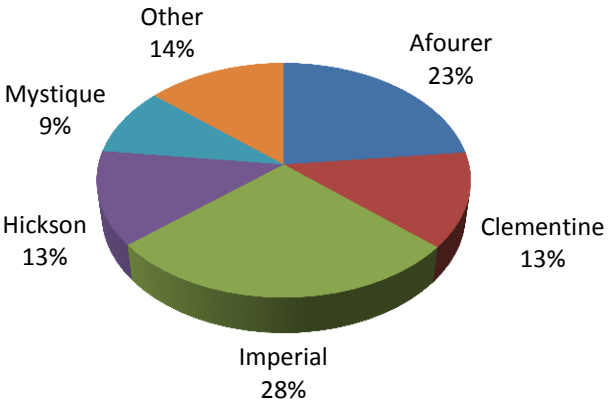
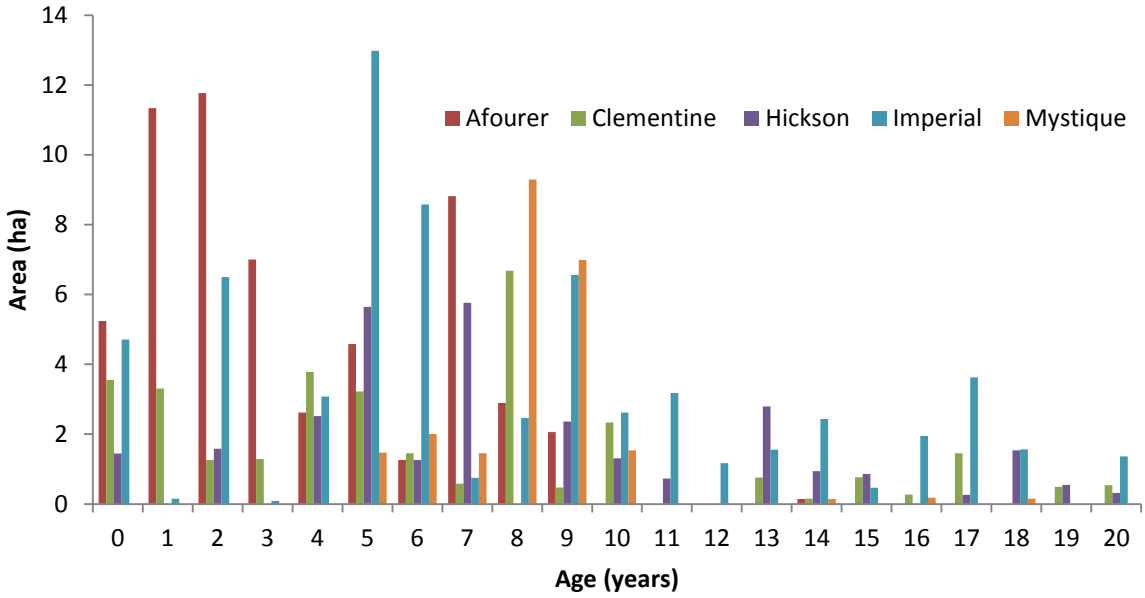


Figure 96: Western Australia major mandarin tree age distribution



Variety lists

Table 42: National variety list

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Citron		Buddha's Hand	0.48		0.48	0.00%
		Citron total	**0.48**	**0**	**0.48**	**0.00%**
Common orange	**Common orange**	Acidless (Non Acid)	0.56		0.56	0.00%
		Common orange unspecified	19.6	2.56	22.16	0.10%
		Hamlin	339.4	6.33	345.73	1.55%
		Joppa	4.68		4.68	0.02%
		Lima acidless	10.25		10.25	0.05%
		Parson Brown	30.43	14.17	44.6	0.20%
		Pera (Bianchi Limeria)	12.97		12.97	0.06%
		Pineapple	31.19	5.4	36.59	0.16%
		Salustiana	344.27	20.29	364.56	1.64%
		Seleta (Siletta)	0.21		0.21	0.00%
		Common orange total	**793.56**	**48.75**	**842.31**	**3.78%**
Grapefruit	**White flesh**	Eagle	1.59		1.59	0.01%
		Grapefruit white unspecified	19.77		19.77	0.09%
		Marsh	56.12	1.18	57.3	0.26%
		Oroblanco	0.7		0.7	0.00%
		Thompson	8.91		8.91	0.04%
		White flesh total	**87.09**	**1.18**	**88.27**	**0.40%**
Grapefruit	**Red flesh**	Flame	19.33	0.07	19.4	0.09%
		Ray Ruby	0.53		0.53	0.00%
		Rio Red (Rio Star)	24.06	0.6	24.66	0.11%
		Ruby (Red, Pink) Red, blush	27.7	3.38	31.08	0.14%
		Star Ruby (Sunrise)	90.5	7.24	97.74	0.44%
		Red flesh total	**162.12**	**11.29**	**173.41**	**0.78%**
Lemon		Eureka	535.19	40.52	575.71	2.58%
		Eureka Seedless	89.45	55.04	144.49	0.65%
		Fino	7.61	0.06	7.67	0.03%
		Lemon unspecified	67.96	3.88	71.84	0.32%
		Lemonade	0.91	0.15	1.06	0.00%
		Limoniera	1.26	0.87	2.13	0.01%
		Lisbon	160.5	39.04	199.54	0.90%
		Meyer	4.7	0.01	4.71	0.02%
		Verna	3.59		3.59	0.02%
		Villafranca (Francovielo)	0.3		0.3	0.00%
		Yen Ben	0.44		0.44	0.00%
		Lemon total	**871.91**	**139.57**	**1011.48**	**4.54%**
Lime		Finger	0.86	0.74	1.6	0.01%
		Kaffir	3.38		3.38	0.02%
		Lime unspecified	0.3		0.3	0.00%
		Sunrise	0.19		0.19	0.00%
		Tahitian (Persian)	226.07	25.18	251.25	1.13%
		West Indian (Mexican)	0.04		0.04	0.00%
		Lime total	**230.84**	**25.92**	**256.76**	**1.15%**
Mandarin	**Mandarin**	Mandarin unspecified	41.65	22.92	64.57	0.29%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
	misc.	Orri	1.21	5.09	6.3	0.03%
		Summerina		10.24	10.24	0.05%
		Tangerine	1.13		1.13	0.01%
		Mandarin misc. total	**43.99**	**38.25**	**82.24**	**0.37%**
Mandarin	**Mandarin early season**	Amigo	26.54	19.05	45.59	0.20%
		Clementine	0.89	1.32	2.21	0.01%
		Clementine (Nules de Nules)	93.06	3.87	96.93	0.43%
		Clementine Caffin	0.32	2.99	3.31	0.01%
		Fallglo	0.58		0.58	0.00%
		Feutrell	0.42		0.42	0.00%
		Fremont	25.73	3.06	28.79	0.13%
		Goldup	56	7.17	63.17	0.28%
		Imperial	1509.63	91.99	1601.62	7.18%
		Nova (Suntina)	40.83		40.83	0.18%
		Satsuma	3.13	5.68	8.81	0.04%
		Satsuma Miho Wase	9.25		9.25	0.04%
		Satsuma Okitsu Wase	22.25	8.96	31.21	0.14%
		Satsuma Silverhill	2.5		2.5	0.01%
		Mandarin early season total	**1791.13**	**144.09**	**1935.22**	**8.68%**
Mandarin	**Mandarin mid season**	Afourer (Nadorcott, W.Murcott)	740.42	257.92	998.34	4.48%
		Avana Late (AperinoTardivo)	88.75	13.29	102.04	0.46%
		Daisy	108.49		108.49	0.49%
		Dancy Tangerine	0.01		0.01	0.00%
		Dekopon (Sumo)	34.67	48.54	83.21	0.37%
		Ellendale	31.57		31.57	0.14%
		Empress	28.72		28.72	0.13%
		Hickson	102.89	4.68	107.57	0.48%
		Monarch	3.18		3.18	0.01%
		Nectar	30.31	4.64	34.95	0.16%
		Success	7.69		7.69	0.03%
		Sunburst	14.18		14.18	0.06%
		Taylor Lee	44.8		44.8	0.20%
		TDE Mandarin	7.43		7.43	0.03%
		Mandarin mid season total	**1243.11**	**329.07**	**1572.18**	**7.05%**
Mandarin	**Mandarin late season**	Alkantara	7.11		7.11	0.03%
		Emperor	1.85		1.85	0.01%
		Gold Nugget	7.43	46.65	54.08	0.24%
		Kara (Carra)	0.63		0.63	0.00%
		Murcott	781.82	3.81	785.63	3.52%
		Murcott Honey	327.29	25.89	353.18	1.58%
		Murcott Low Seeded	461.28	18.26	479.54	2.15%
		Mystique	23.21	0.5	23.71	0.11%
		Topaz Ortanique	15.15		15.15	0.07%
		Mandarin late season total	**1625.77**	**95.11**	**1720.88**	**7.72%**
Navel	**Navel**	Navel unspecified	189.83	13.77	203.88	0.91%
		Navel unspecified total	**189.83**	**13.77**	**203.88**	**0.91%**

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Navel	**Navel early season**	Atwood	51.93	0.24	52.17	0.23%
		Biggs Leng	1.91		1.91	0.01%
		Early Bird	0.29		0.29	0.00%
		Early navel unspecified	12.44	1.42	13.86	0.06%
		Fisher	33.1	0.9	34	0.15%
		Fukumoto	19.86		19.86	0.09%
		Fulwood	1.01		1.01	0.00%
		Golden Nugget	0.52		0.52	0.00%
		Leng	442.43	5.04	447.47	2.01%
		Lloyd Leng	0.05		0.05	0.00%
		M7 Navel	92.9	85.1	178	0.80%
		Navelina (Italian, Spanish)	751.24	14.58	765.82	3.44%
		Newhall (Naveline)	54.45		54.45	0.24%
		Nucellar Leng	15.7		15.7	0.07%
		Pasin	9.91		9.91	0.04%
		Pollock Early	4.51		4.51	0.02%
		Riverside	1.75		1.75	0.01%
		Ryan	66.82		66.82	0.30%
		Thomson	28.36		28.36	0.13%
		Whitely	3.11		3.11	0.01%
		Navel early season total	**1601.19**	**111.33**	**1712.52**	**7.68%**
Navel	**Navel mid season**	Bellamy	1.38		1.38	0.01%
		Hockney	7.01		7.01	0.03%
		Langdon	21.85		21.85	0.10%
		Navelate (Tardia)	33.81		33.81	0.15%
		Palmer	1.24		1.24	0.01%
		Sun Smooth		1.23	1.23	0.01%
		Washington	2229.33	44.32	2273.65	10.20%
		Winter navel	8.9	4.05	12.95	0.06%
		Navel mid season total	**2303.52**	**49.6**	**2353.12**	**10.55%**
Navel	**Navel late season**	Albanese	0.17		0.17	0.00%
		Autumn Gold (Pollock Late)	114.81	8	122.81	0.55%
		Barnfield	297.27	16.22	313.49	1.41%
		Chislett	571.43	17.51	588.94	2.64%
		Christensen	1.02		1.02	0.00%
		Clark (Doug Clarke)	12.61		12.61	0.06%
		Honey Gold	1.8		1.8	0.01%
		Hutton	40.05	1.81	41.86	0.19%
		Late Lane	2405.1	44.84	2449.94	10.99%
		Late navel unspecified	55.75	0.98	56.73	0.25%
		Powell	154.37	5.13	159.5	0.72%
		Ravens Choice	4.68		4.68	0.02%
		Rohde	62.93	2.81	65.74	0.29%
		Scopelliti	3.55		3.55	0.02%
		Summer Gold (Marrows)	203.39	8	211.39	0.95%
		Summer navel unspecified	150.41		150.41	0.67%
		Toc	14.38		14.38	0.06%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
		Toomey	3.46		3.46	0.02%
		Wiffen	5.49		5.49	0.02%
		Wilson	19.72		19.72	0.09%
		Navel late season total	**4122.39**	**105.3**	**4227.69**	**18.96%**
Navel	**Navel red flesh**	Cara Cara (Red navel)	142.03	37.77	179.8	0.81%
		Kirkwood Red		8.9	8.9	0.04%
		Rosey Red	23.62	0.55	24.17	0.11%
		Navel red flesh total	**165.65**	**47.22**	**212.87**	**0.95%**
Orange misc.	**Blood Orange**	Arnold (Moro)	51.33	7.29	58.62	0.26%
		Blood orange unspecified	22.55	5	27.55	0.12%
		Maltese	0.26		0.26	0.00%
		Tarocco	1.17	2.5	3.67	0.02%
		Blood orange total	**75.31**	**14.79**	**90.1**	**0.40%**
Orange misc.	**Orange**	Seville	10.55	0.1	10.65	0.05%
		Sour orange total	**10.55**	**0.1**	**10.65**	**0.05%**
Orange misc.	**Orange**	Orange unspecified	50.28	2.39	52.67	0.24%
		Orange unspecified	**50.28**	**2.39**	**52.67**	**0.24%**
Pummelo		Pummelo unspecified	4.22	1.8	6.02	0.03%
		Pummelo unspecified total	**4.22**	**1.8**	**6.02**	**0.03%**
Tangelo		Minneola	122.82	2.19	125.01	0.56%
		Seminole	0.07		0.07	0.00%
		Tangelo unspecified	15.13		15.13	0.07%
		Tangelo total	**138.02**	**2.19**	**140.21**	**0.63%**
Valencia		Ben Yenda	44.65		44.65	0.20%
		Berri	11.61		11.61	0.05%
		Casey	0.35		0.35	0.00%
		Dwarf	0.78		0.78	0.00%
		Honey Ball	10.74		10.74	0.05%
		Keenan	40.99	55.64	96.63	0.43%
		Newton	24.45		24.45	0.11%
		Pecta	1.69		1.69	0.01%
		Smith Red	4.04		4.04	0.02%
		Valencia	4724.54	163.59	4888.13	21.93%
		Valencia Late	48.18	5.17	53.35	0.24%
		Valencia total	**4912.02**	**224.4**	**5136.42**	23.04%
Valencia	**Valencia seedless**	Delta	79.92	39.87	119.79	0.54%
		McMahon	93.57	36.81	130.38	0.58%
		Midknight	65.29	2.98	68.27	0.31%
		Valencia seedless	93.05	66.76	159.81	0.72%
		Valencia seedless total	**331.83**	**146.42**	**478.25**	**2.15%**
		TOTAL	**20745.91**	**1548.49**	**22294.4**	**100%**

Table 43: Riverina variety list

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Common orange		Common orange unspecified	16.6	2.56	19.16	0.28%
		Hamlin	135.64	1.59	137.23	1.99%
		Lima acidless	10.25		10.25	0.15%
		Parson Brown	30.43	14.17	44.6	0.65%
		Pera (Bianchi Limeria)	12.97		12.97	0.19%
		Pineapple	31.19	5.4	36.59	0.53%
		Salustiana	188.81	9.74	198.55	2.88%
		Common orange total	**425.89**	**33.46**	**459.35**	**6.66%**
Lemon		Eureka	61.64	14.78	76.42	1.11%
		Lemon unspecified	26.06		26.06	0.38%
		Lisbon	2	19.58	21.58	0.31%
		Meyer	4.5		4.5	0.07%
		Lemon total	**94.2**	**34.36**	**128.56**	**1.86%**
Lime		Tahitian (Persian)	1.24		1.24	0.02%
		Lime total	**1.24**	**0**	**1.24**	**0.02%**
Mandarin	**Mandarin misc.**	Mandarin unspecified	0.34	2.13	2.47	0.04%
		Summerina		2.6	2.6	0.04%
		Tangerine	1.13		1.13	0.02%
		Mandarin misc. total	**7.2**	**6.53**	**13.73**	**0.20%**
Mandarin	**Mandarin early season**	Amigo	0.29	1.27	1.56	0.02%
		Imperial	53.16	10.36	63.52	0.92%
		Satsuma	1		1	0.01%
		Satsuma Okitsu Wase	2.19		2.19	0.03%
		Mandarin early season total	**56.64**	**11.63**	**68.27**	**0.99%**
Mandarin	**Mandarin mid season**	Afourer (Nadorcott, W.Murcott)	34.72	2.24	36.96	0.54%
		Daisy	1.01		1.01	0.01%
		Dekopon (Sumo)	22.7	19.37	42.07	0.61%
		Ellendale	0.8		0.8	0.01%
		Mandarin mid season total	**53.5**	**19.81**	**73.31**	**1.06%**
Mandarin	**Mandarin late season**	Murcott	1.8		1.8	0.03%
		Murcott Honey	3.53		3.53	0.05%
		Mandarin late season total	**5.33**	**0**	**5.33**	**0.08%**
Navel	**Navel misc.**	Navel unspecified	103.6	11.07	114.67	1.66%
		Navel misc. total	**103.6**	**11.07**	**114.67**	**1.66%**
Navel	**Navel early season**	Atwood	31.88		31.88	0.46%
		Early navel unspecified	12.26	1.42	13.68	0.20%
		Fukumoto	9.75		9.75	0.14%
		Leng	37.47		37.47	0.54%
		M7 Navel	5.97	17.29	23.26	0.34%
		Navelina (Italian, Spanish)	120.71	13.47	134.18	1.95%
		Nucellar Leng	0.69		0.69	0.01%
		Pasin	4.87		4.87	0.07%
		Ryan	16.22		16.22	0.24%
		Thomson	0.38		0.38	0.01%
		Navel early season total	**240.2**	**32.18**	**272.38**	**3.95%**
Navel	**Navel**	Bellamy	1.18		1.18	0.02%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
	mid season	Langdon	12.8		12.8	0.19%
		Navelate (Tardia)	30.59		30.59	0.44%
		Palmer	0.48		0.48	0.01%
		Washington	872.03	9.25	881.28	12.78%
		Winter Navel	8.88	4.05	12.93	0.19%
		Navel mid season total	**925.96**	**13.3**	**939.26**	**13.62%**
Navel	**Navel late season**	Autumn Gold (Pollock Late)	1.94		1.94	0.03%
		Barnfield	26.52	0.4	26.92	0.39%
		Chislett	118.64	10.94	129.58	1.88%
		Clark (Doug Clarke)	4.61		4.61	0.07%
		Late Lane	648.2	5.7	653.9	9.48%
		Late navel unspecified	43.21		43.21	0.63%
		Powell	62.46	5.13	67.59	0.98%
		Rohde	1		1	0.01%
		Summer Gold (Marrows)	12.67		12.67	0.18%
		Summer navel unspecified	128.4		128.4	1.86%
		Toc	10.64		10.64	0.15%
		Navel late season total	**1058.29**	**22.17**	**1080.46**	**15.67%**
Navel	**Red flesh**	Rosey Red	13.35		13.35	0.19%
		Cara Cara (Red navel)	48.88	1.75	50.63	0.73%
		Navel red flesh total	**62.23**	**1.75**	**63.98**	**0.93%**
Orange misc.	**Blood orange**	Arnold (Moro)	35.1	4	39.1	0.57%
		Blood orange unspecified	7.28	1.13	8.41	0.12%
		Maltese	0.26		0.26	0.00%
		Tarocco	1.17	2.5	3.67	0.05%
		Blood orange total	**43.81**	**7.63**	**51.44**	**0.75%**
Orange misc.	**Orange**	Orange unspecified	4.06		4.06	0.06%
		Orange unspecified total	**4.06**	**0**	**4.06**	**0.06%**
Tangelo		Minneola	0.94		0.94	0.01%
		Tangelo unspecified	4.83		4.83	0.07%
		Tangelo total	**5.77**	**0**	**5.77**	**0.08%**
Valencia		Dwarf	0.78		0.78	0.01%
		Keenan	20.07	15.5	35.57	0.52%
		Pecta	1.69		1.69	0.02%
		Valencia	3050.47	132.17	3182.64	46.15%
		Valencia Late	7.54	4.42	11.96	0.17%
		Valencia total	**3080.55**	**152.09**	**3232.64**	**46.87%**
Valencia	**Valencia seedless**	Delta	60.84	15.32	76.16	1.10%
		McMahon	44.33	33.24	77.57	1.12%
		Midknight	4.15	0.6	4.75	0.07%
		Valencia seedless unspecified	78.04	66.76	144.8	2.10%
		Valencia seedless total	**187.36**	**115.92**	**303.28**	**4.40%**
		TOTAL	**6432.88**	**463.85**	**6896.73**	**100%**

Table 44: Riverland variety list

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Citron		Buddha's Hand	0.38		0.38	0.01%
		Citron total	**0.38**	**0**	**0.38**	**0.01%**
Common orange		Common orange unspecified	2.47		2.47	0.05%
		Hamlin	21.73	3.26	24.99	0.49%
		Salustiana	28.96	3.43	32.39	0.63%
			53.16	**6.69**	**59.85**	**1.16%**
Grapefruit	**White flesh**	Marsh	11.2		11.2	0.22%
		White flesh total	**11.2**	**0**	**11.2**	**0.22%**
Grapefruit	**Red flesh**	Ray Ruby	0.53		0.53	0.01%
		Rio Red (Rio Star)	1.1		1.1	0.02%
		Ruby (Red, Pink) Red blush	9.76		9.76	0.19%
		Star Ruby (Sunrise)	26.92	2.39	29.31	0.57%
		Red flesh total	**38.31**	**2.39**	**40.7**	**0.79%**
Lemon		Eureka	45.69	5.97	51.66	1.00%
		Eureka Seedless	7.5	6.82	14.32	0.28%
		Fino	3.57		3.57	0.07%
		Lemon unspecified	18.07		18.07	0.35%
		Lemonade	0.04	0.15	0.19	0.00%
		Lisbon	22.43	3.29	25.72	0.50%
		Verna	2.07		2.07	0.04%
		Villafranca (Francovielo)	0.3		0.3	0.01%
		Lemon total	**99.67**	**16.23**	**115.9**	**2.25%**
Lime		Kaffir	3.3		3.3	0.06%
		Lime unspecified	0.07		0.07	0.00%
		Tahitian (Persian)	20.63	1.23	21.86	0.42%
		Lime total	**24**	**1.23**	**25.23**	**0.49%**
Mandarin	**Mandarin misc.**	Mandarin unspecified	2.74	7.5	10.24	0.20%
		Orri		5.09	5.09	0.10%
		Summerina		7.64	7.64	0.15%
		Mandarin misc. total	**2.74**	**20.23**	**22.97**	**0.45%**
Mandarin	**Mandarin early season**	Amigo	22.94	7.63	30.57	0.59%
		Clementine (Nules de Nules)	68.38		68.38	1.33%
		Imperial	291.33	25.07	316.4	6.14%
		Nova (Suntina)	15.39		15.39	0.30%
		Satsuma	2.13	5.68	7.81	0.15%
		Satsuma Miho Wase	8.41		8.41	0.16%
		Satsuma Okitsu Wase	17.44	8.96	26.4	0.51%
		Mandarin early season total	**426.02**	**47.34**	**473.36**	**9.19%**
Mandarin	**Mandarin mid season**	Afourer (Nadorcott, W.Murcott)	244.19	138.83	383.02	7.44%
		Avana Late (AperinoTardivo)	14.42	8.21	22.63	0.44%
		Daisy	48.53		48.53	0.94%
		Dancy Tangerine	0.01		0.01	0.00%
		Dekopon (Sumo)	5.72	12.88	18.6	0.36%
		Ellendale	17.99		17.99	0.35%
		Gold Nugget		20	20	0.39%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
		Hickson	1.47		1.47	0.03%
		Mandarin mid season total	**331.13**	**177.67**	**508.8**	**9.88%**
Mandarin	**Mandarin late season**	Kara (Carra)	0.13		0.13	0.00%
		Murcott	13.54		13.54	0.26%
		Murcott Honey	60.22		60.22	1.17%
		Murcott Low Seeded		10.15	10.15	0.20%
		Topaz Ortanique	15.06		15.06	0.29%
		Mandarin late season total	**88.95**	**10.15**	**99.1**	**1.92%**
Navel	**Navel misc.**	Navel unspecified	51.52	1.16	52.68	1.02%
		Navel misc. total	**51.52**	**1.16**	**52.68**	**1.02%**
Navel	**Navel early season**	Atwood	1.43	0.24	1.67	0.03%
		Early navel unspecified	0.18		0.18	0.00%
		Fisher	6.64		6.64	0.13%
		Fukumoto	1.4		1.4	0.03%
		Fulwood	1.01		1.01	0.02%
		Leng	139.76	0.36	140.12	2.72%
		M7 Navel	13.59	15.92	29.51	0.57%
		Navelina (Italian, Spanish)	323.19	0.38	323.57	6.28%
		Newhall (Naveline)	12.77		12.77	0.25%
		Pasin	1.86		1.86	0.04%
		Ryan	13.49		13.49	0.26%
		Thomson	15.26		15.26	0.30%
		Navel early season total	**530.58**	**16.9**	**547.48**	**10.63%**
Navel	**Navel mid season**	Hockney	5.08		5.08	0.10%
		Navelate (Tardia)	1.65		1.65	0.03%
		Sun Smooth		1.23	1.23	0.02%
		Washington	666.87	12.93	679.8	13.20%
		Navel mid season total	**673.6**	**14.16**	**687.76**	**13.36%**
Navel	**Navel late season**	Albanese	0.17		0.17	0.00%
		Autumn Gold (Pollock Late)	65.03		65.03	1.26%
		Barnfield	128.83	7.82	136.65	2.65%
		Chislett	145.72	1.16	146.88	2.85%
		Hutton	39.36	1.81	41.17	0.80%
		Late Lane	636.69	18.61	655.3	12.73%
		Late navel unspecified	9.35	0.98	10.33	0.20%
		Powell	22.41		22.41	0.44%
		Rohde	6.14	1.02	7.16	0.14%
		Summer Gold (Marrows)	102.67		102.67	1.99%
		Summer navel unspecified	14.01		14.01	0.27%
		Toomey	3.46		3.46	0.07%
		Wiffen	5.49		5.49	0.11%
		Wilson	19.72		19.72	0.38%
		Navel late season total	**1199.05**	**31.4**	**1230.45**	**23.90%**
Navel	**Red flesh**	Cara Cara (Red navel)	29.67	19.54	49.21	0.96%
		Kirkwood Red		2.7	2.7	0.05%
		Navel red flesh total	**29.67**	**22.24**	**51.91**	1.01%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Orange	**Blood Orange**	Arnold (Moro)	6.6	3.29	9.89	0.19%
		Blood Orange unspecified	4.54	0.32	4.86	0.09%
		Blood orange total	**11.14**	**3.61**	**14.75**	**0.29%**
Orange misc.		Seville	2.1	0.1	2.2	0.04%
		Orange unspecified	2	0.64	2.64	0.05%
		Orange misc. total	**4.1**	**0.74**	**4.84**	**0.09%**
Pummelo		Pummelo unspecified	1.65		1.65	0.03%
		Pummelo total	**1.65**	**0**	**1.65**	**0.03%**
Tangelo		Minneola	80.22		80.22	1.56%
		Tangelo unspecified	2.48		2.48	0.05%
		Tangelo total	**82.7**	**0**	**82.7**	**1.61%**
Valencia		Keenan		2.1	2.1	0.04%
		Valencia	1022.66	18.17	1040.83	20.21%
		Valencia Late	35.68		35.68	0.69%
		Valencia total	**1058.34**	**20.27**	**1078.61**	**20.95%**
Valencia	**Valencia seedless**	Delta	9	1.34	10.34	0.20%
		McMahon		3.57	3.57	0.07%
		Midknight	7.85	2.38	10.23	0.20%
		Valencia seedless	11.41		11.41	0.22%
		Valencia seedless total	**28.26**	**7.29**	**35.55**	**0.69%**
		TOTAL	**4747.37**	**401.95**	**5149.32**	**100%**

Table 45: Murray Valley variety list

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Citron		Buddha's Hand	0.1		0.1	0.00%
		Citron total	**0.1**	**0**	**0.1**	**0.00%**
Common orange		Common orange unspecified	0.53		0.53	0.01%
		Hamlin	8.68		8.68	0.19%
		Common orange total	**9.21**	**0**	**9.21**	**0.21%**
Grapefruit	**White flesh**	Grapefruit white unspecified	4.86		4.86	0.11%
		Marsh	13.5	1.18	14.68	0.33%
		Oroblanco	0.7		0.7	0.02%
		Thompson	2.34		2.34	0.05%
		White flesh total	**21.4**	**1.18**	**22.58**	**0.51%**
Grapefruit	**Red flesh**	Flame	0.39	0.07	0.46	0.01%
		Rio Red (Rio Star)	3.23	0.59	3.82	0.09%
		Ruby (Red, Pink) Red blush	4.84	0.5	5.34	0.12%
		Star Ruby (Sunrise)	21.35	0.03	21.38	0.48%
		Red flesh total	**29.81**	**1.19**	**31**	**0.69%**
Lemon		Eureka	51.72	10.37	62.09	1.39%
		Eureka Seedless		18.93	18.93	0.42%
		Fino	0.31	0.06	0.37	0.01%
		Lemon unspecified	21.57	3.88	25.45	0.57%
		Lisbon	58.77	15.48	74.25	1.66%
		Verna	1.27		1.27	0.03%
		Yen Ben	0.44		0.44	0.01%
		Lemon total	**134.08**	**48.72**	**182.8**	**4.09%**
Lime		Lime unspecified	0.21		0.21	0.00%
		Tahitian (Persian)	2.21	0.49	2.7	0.06%
		Lime total	**2.42**	**0.49**	**2.91**	**0.07%**
Mandarin	**Mandarin misc.**	Mandarin unspecified	3.86		3.86	0.09%
		Orri	1.21		1.21	0.03%
		Mandarin misc. total	**5.07**	**0**	**5.07**	**0.11%**
Mandarin	**Mandarin early season**	Amigo	3.31	10.15	13.46	0.30%
		Clementine	0.08	1.32	1.4	0.03%
		Clementine Caffin	0.32		0.32	0.01%
		Fallglo	0.58		0.58	0.01%
		Feutrell	0.42		0.42	0.01%
		Imperial	249.68	13.14	262.82	5.89%
		Satsuma Miho Wase	0.84		0.84	0.02%
		Satsuma Okitsu Wase	0.83		0.83	0.02%
		Mandarin early season total	**256.06**	**24.61**	**280.67**	**6.29%**
Mandarin	**Mandarin mid season**	Afourer (Nadorcott, W.Murcott)	262.78	68.08	330.86	7.41%
		Avana Late (AperinoTardivo)	0.15	0.18	0.33	0.01%
		Daisy	17.12		17.12	0.38%
		Dekopon (Sumo)	6.25	2.25	8.5	0.19%
		Ellendale	11.54		11.54	0.26%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
		Mandarin mid season total	**297.84**	**70.51**	**368.35**	**8.25%**
Mandarin	**Mandarin late season**	Emperor	0.24		0.24	0.01%
		Kara (Carra)	0.5		0.5	0.01%
		Murcott	6.79		6.79	0.15%
		Mystique		0.5	0.5	0.01%
		Mandarin late season total	**7.53**	**0.5**	**8.03**	**0.18%**
Navel	**Navel misc.**	Navel unspecified	34.53	1.54	36.07	0.81%
		Navel misc. total	**34.53**	**1.54**	**36.07**	**0.81%**
Navel	**Navel early season**	Atwood	18.62		18.62	0.42%
		Biggs Leng	1.91		1.91	0.04%
		Early Bird	0.29		0.29	0.01%
		Fisher	25.06	0.4	25.46	0.57%
		Fukumoto	8.71		8.71	0.20%
		Leng	241.06	4.6	245.66	5.50%
		Lloyd Leng	0.05		0.05	0.00%
		M7 Navel	58.51	49.99	108.5	2.43%
		Navelina (Italian, Spanish)	237.65	0.73	238.38	5.34%
		Newhall (Naveline)	1.68		1.68	0.04%
		Nucellar Leng	14.51		14.51	0.32%
		Pasin	2.44		2.44	0.05%
		Pollock Early	4.51		4.51	0.10%
		Riverside	1.75		1.75	0.04%
		Ryan	35.94		35.94	0.80%
		Thomson	12.72		12.72	0.28%
		Whitely	3.11		3.11	0.07%
		Navel early season total	**668.52**	**55.72**	**724.24**	**16.22%**
Navel	**Navel mid season**	Bellamy	0.2		0.2	0.00%
		Hockney	1.93		1.93	0.04%
		Langdon	9.05		9.05	0.20%
		Navelate (Tardia)	1.57		1.57	0.04%
		Palmer	0.76		0.76	0.02%
		Washington	443.92	13.64	457.56	10.25%
		Navel mid season total	**457.43**	**13.64**	**471.07**	**10.55%**
Navel	**Navel late season**	Autumn Gold (Pollock Late)	38.98		38.98	0.87%
		Barnfield	135.31		135.31	3.03%
		Chislett	263.42	3.58	267	5.98%
		Christensen	1.02		1.02	0.02%
		Clark (Doug Clarke)	8		8	0.18%
		Honey Gold	1.8		1.8	0.04%
		Hutton	0.69		0.69	0.02%
		Late Lane	944.15	8.53	952.68	21.34%
		Late navel unspecified	3.19		3.19	0.07%
		Powell	68.7		68.7	1.54%
		Ravens Choice	4.68		4.68	0.10%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
		Rohde	45.61	1.79	47.4	1.06%
		Scopelliti	3.55		3.55	0.08%
		Summer Gold (Marrows)	85.9		85.9	1.92%
		Summer navel unspecified	8		8	0.18%
		Toc	3.74		3.74	0.08%
		Navel late season total	**1616.74**	**13.9**	**1630.64**	**36.52%**
Navel	**Red flesh**	Cara Cara (Red navel)	42.99	4.66	47.65	1.07%
		Kirkwood Red		6.2	6.2	0.14%
		Rosey Red		0.55	0.55	0.01%
			42.99	**11.41**	**54.4**	**1.22%**
Orange	**Blood Orange**	Arnold (Moro)	7.11		7.11	0.16%
		Blood orange unspecified	10.2	1.12	11.32	0.25%
		Blood orange total	**17.31**	**1.12**	**18.43**	**0.41%**
Orange misc.		Seville	8.45		8.45	0.19%
		Orange unspecified	0.96	1.75	2.71	0.06%
		Orange misc. total	**9.41**	**1.75**	**11.16**	**0.25%**
Pummelo		Pummelo unspecified	2.57	1.8	4.37	0.10%
		Pummelo total	**2.57**	**1.8**	**4.37**	**0.10%**
Tangelo		Minneola	32.61		32.61	0.73%
		Seminole	0.07		0.07	0.00%
		Tangelo unspecified	7.22		7.22	0.16%
		Tangelo total	**39.9**	**0**	**39.9**	**0.89%**
Valencia		Berri	10.66		10.66	0.24%
		Newton	17.45		17.45	0.39%
		Smith Red	4.04		4.04	0.09%
		Valencia	499.38	13.25	512.63	11.48%
		Valencia Late	1.8	0.75	2.55	0.06%
		Valencia total	**533.33**	**14**	**547.33**	12.26%
Valencia	**Valencia seedless**	Delta	9.93	1.01	10.94	0.25%
		Midknight	1.89		1.89	0.04%
		Valencia seedless unspecified	3.6		3.6	0.08%
		Valencia seedless total	**15.42**	**1.01**	**16.43**	**0.37%**
		TOTAL	**4201.67**	**263.09**	**4464.76**	**100%**

Table 46: Queensland variety list

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Common orange	**Sweet Orange**	Joppa	4.68		4.68	0.12%
		Common orange total	**4.68**	**0**	**4.68**	**0.12%**
Grapefruit	**White Flesh**	Marsh	4.57		4.57	0.12%
		White flesh total	**4.57**	**0**	**4.57**	**0.12%**
Grapefruit	**Red flesh**	Rio Red (Rio Star)	6.37		6.37	0.16%
		Ruby (Red, Pink) Red blush	1.05	2.1	3.15	0.08%
		Star Ruby (Sunrise)	13.83	3.65	17.48	0.45%
		Red flesh total	**21.25**	**5.75**	**27**	**0.69%**
Lemon		Eureka	303.5	6.44	309.94	7.91%
		Eureka Seedless	78.75	5.14	83.89	2.14%
		Fino	3.73		3.73	0.10%
		Lemonade	0.11		0.11	0.00%
		Limoniera	1.26		1.26	0.03%
		Lisbon	69.57		69.57	1.78%
		Lemon total	**456.92**	**11.58**	**468.5**	**11.96%**
Lime		Kaffir	0.07		0.07	0.00%
		Sunrise	0.19		0.19	0.00%
		Tahitian (Persian)	192.33	21.6	213.93	5.46%
		Lime total	**192.59**	**21.6**	**214.19**	**5.47%**
Mandarin	**Mandarin misc.**	Mandarin unspecified	34.46	13.29	47.75	1.22%
		Mandarin misc. total	**34.46**	**13.29**	**47.75**	**1.22%**
Mandarin	**Mandarin early season**	Fremont	25.73	3.06	28.79	0.73%
		Goldup	56	7.17	63.17	1.61%
		Imperial	849.66	34.56	884.22	22.57%
		Nova (Suntina)	25.44		25.44	0.65%
		Mandarin early season total	**956.83**	**44.79**	**1001.62**	**25.57%**
Mandarin	**Mandarin mid season**	Afourer (Nadorcott, W.Murcott)	147.41		147.41	3.76%
		Avana Late (AperinoTardivo)	73.86	4.9	78.76	2.01%
		Daisy	27.99		27.99	0.71%
		Ellendale	0.42		0.42	0.01%
		Empress	28.72		28.72	0.73%
		Hickson	70.82	3.24	74.06	1.89%
		Monarch	3.18		3.18	0.08%
		Nectar	27.69	4.64	32.33	0.83%
		Success	7.69		7.69	0.20%
		Sunburst	14.18		14.18	0.36%
		Taylor Lee	44.8		44.8	1.14%
		TDE Mandarin	7.43		7.43	0.19%
		Mandarin mid season total	**454.19**	**12.78**	**466.97**	**11.92%**
Mandarin	**Mandarin late season**	Alkantara	7.11		7.11	0.18%
		Emperor	0.27		0.27	0.01%
		Gold Nugget	7.43		7.43	0.19%
		Murcott	756.62	3.81	760.43	19.41%
		Murcott Honey	262.88	25.89	288.77	7.37%
		Murcott Low Seeded	461.28	8.11	469.39	11.98%
		Mandarin late season total	**1495.59**	**37.81**	**1533.4**	**39.14%**

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Navel	**Navel**	Navelina (Italian, Spanish)	19.91		19.91	0.51%
	early season	Pasin	0.48		0.48	0.01%
		Navel early season total	**20.39**	**0**	**20.39**	**0.52%**
Navel	**Navel**	Washington	64.84		64.84	1.66%
	mid season	**Navel mid season total**	**64.84**	**0**	**64.84**	**1.66%**
Navel	**Navel**	Chislett	1.69		1.69	0.04%
	late season	Late Lane	0.84		0.84	0.02%
		Navel late season total	**2.53**	**0**	**2.53**	**0.06%**
Orange	**Blood**	Arnold (Moro)	2.18		2.18	0.06%
	orange	Blood orange unspecified	0.52		0.52	0.01%
		Blood orange total	**2.7**	**0**	**2.7**	**0.07%**
Tangelo		Minneola	8.05		8.05	0.21%
		Tangelo total	**8.05**	**0**	**8.05**	**0.21%**
Valencia		Ben Yenda	1.13		1.13	0.03%
Valencia		Valencia	16.17		16.17	0.41%
		Honey Ball	10.74		10.74	0.27%
		Valencia total	**28.04**	**0**	**28.04**	**0.72%**
Valencia	**Valencia seedless**	Midknight	22.03		22.03	0.56%
		Valencia seedless total	**22.03**	**0**	**22.03**	**0.56%**
		TOTAL	**3769.66**	**147.6**	**3917.26**	**100%**

Table 47: Western Australia variety list

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
Common orange		Acidless (Non Acid)	0.56		0.56	0.06%
		Salustiana	1.18		1.18	0.12%
		Seleta (Siletta)	0.21		0.21	0.02%
		Common orange total	**1.95**	**0**	**1.95**	**0.20%**
Grapefruit	**White flesh**	Marsh	0.48		0.48	0.05%
		White flesh total	**0.48**	**0**	**0.48**	**0.05%**
Grapefruit	**Red flesh**	Flame	10.03		10.03	1.04%
		Rio Red (Rio Star)	12.73	0.01	12.74	1.32%
		Star Ruby (Sunrise)	1.22		1.22	0.13%
		Red flesh total	**23.98**	**0.01**	**23.99**	**2.49%**
Lemon		Eureka	14.89	0.21	15.1	1.57%
		Eureka Seedless		1.23	1.23	0.13%
		Limoniera		0.87	0.87	0.09%
		Lisbon	2	0.69	2.69	0.28%
		Meyer	0.08	0.01	0.09	0.01%
		Lemon total	**16.97**	**3.01**	**19.98**	**2.08%**
Lime		Finger		0.6	0.6	0.06%
		Kaffir	0.01		0.01	0.00%
		Lime unspecified	0.02		0.02	0.00%
		Tahitian (Persian)	5.78	0.28	6.06	0.63%
		West Indian (Mexican)	0.04		0.04	0.00%
		Lime total	**5.85**	**0.88**	**6.73**	**0.70%**
Mandarin	**Mandarin early season**	Clementine	0.81		0.81	0.08%
		Clementine (Nules de Nules)	24.68	3.87	28.55	2.97%
		Clementine Caffin		2.99	2.99	0.31%
		Imperial	63.45	4.86	68.31	7.10%
		Satsuma Okitsu Wase	1.79		1.79	0.19%
		Satsuma Silverhill	2.5		2.5	0.26%
		Mandarin early season total	**93.23**	**11.72**	**104.95**	**10.90%**
Mandarin	**Mandarin mid season**	Afourer (Nadorcott, W.Murcott)	41.14	16.58	57.72	6.00%
		Avana Late (AperinoTardivo)	0.32		0.32	0.03%
		Daisy	13.84		13.84	1.44%
		Ellendale	0.82		0.82	0.09%
		Hickson	30.6	1.44	32.04	3.33%
		Nectar	2.62		2.62	0.27%
		Mandarin mid season total	**89.34**	**18.02**	**107.36**	**11.15%**
Mandarin	**Mandarin late season**	Emperor	1.34		1.34	0.14%
		Gold Nugget		6.99	6.99	0.73%
		Murcott	3.07		3.07	0.32%
		Murcott Honey	0.66		0.66	0.07%
		Mystique	23.21		23.21	2.41%
		Topaz Ortanique	0.09		0.09	0.01%
		Mandarin late season total	**28.37**	**6.99**	**35.36**	**3.67%**
Navel	**Navel misc.**	Navel unspecified	0.18		0.18	0.02%
		Navel misc. total	**0.18**	**0**	**0.18**	**0.02%**
Navel	**Navel**	Leng	10.9	0.08	10.98	1.14%

Category	Sub Category	Variety	Bearing ha	Non-Bearing ha	Total ha	% Total
	early season	M7 Navel	14.83		14.83	1.54%
		Navelina (Italian, Spanish)	46.88		46.88	4.87%
		Newhall (Naveline)	39.37		39.37	4.09%
		Pasin	0.26		0.26	0.03%
		Ryan	0.69		0.69	0.07%
		Navel early season total	**112.93**	**0.08**	**113.01**	**11.74%**
Navel	**Navel**	Washington	161.77		161.77	16.81%
	mid season	**Navel mid season total**	**161.77**	**0**	**161.77**	**16.81%**
Navel	**Navel late season**	Autumn Gold (Pollock Late)	6		6	0.62%
		Barnfield	2.23		2.23	0.23%
		Chislett	29.36	1.83	31.19	3.24%
		Late Lane	150.63		150.63	15.65%
		Powell	0.8		0.8	0.08%
		Rohde	9.58		9.58	1.00%
		Navel late season total	**198.6**	**1.83**	**200.43**	**20.82%**
Navel	**Red flesh**	Rosey Red	10.27		10.27	1.07%
		Cara Cara (Red Navel)	16.79	2.34	19.13	1.99%
		Navel red flesh total	**27.06**	**2.34**	**29.4**	3.05%
Orange	**Blood Orange**	Blood Orange unspecified		2.43	2.43	0.25%
		Blood orange total	**0**	**2.43**	**2.43**	**0.25%**
Tangelo		Minneola	1	2.17	3.17	0.33%
		Tangelo total	**1**	**2.17**	**3.17**	**0.33%**
Valencia		Ben Yenda	0.21		0.21	0.02%
		Berri	0.65		0.65	0.07%
		Valencia	121.29		121.29	12.60%
		Valencia total				
Valencia	**Valencia seedless**	Midknight	29.23		29.23	3.04%
		Valencia seedless total	**29.23**	**0**	**29.23**	**3.04%**
		TOTAL	**913.09**	**49.48**	**962.57**	**100%**