South Australian Citrus Industry Situational Analysis

RURAL SOLUTIONS SA

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Contents

1. Introduction

The following Citrus Industry Situational Analysis has been prepared with the aim of providing the citrus industry with information to assist in medium and long term strategic planning. It delivers a 'snapshot' overview of the citrus industry with first a global, then national and finally South Australian perspective.

It should be noted that in 2001, the Productivity Commission released an extensive report 'Citrus Growing and Processing', with significant industry consultation. The inquiry arose out of concerns about the commercial outlook for the Australian citrus growing and processing industry. The concerns are that some sectors of the industry are vulnerable to strong competition from imports, particularly of frozen concentrate orange juice (FCOJ), and that many growers have recently experienced low returns.

This Situational Analysis has not tried to replicate the work previously done, but update information where possible and encourage strategic thinking.

The key messages from the Productivity Commission report were:

Citrus Growing and Processing Productivity Commission 2002 Key Messages

- The citrus growing and processing industry has been expanding while experiencing significant change.
- Demand for fresh fruit and fresh juice has increased strongly. These products absorb 85 per cent of total orange production.
- The industry has become more export-oriented, with exports now representing one-quarter of total citrus production and almost half of the total value of production.
- At the same time, a substantial increase in low cost, high quality frozen concentrate orange juice from Brazil has resulted in reduced returns and financial problems for some local growers.
- Financial performance and competitiveness within the industry varies.
- Growers who have adapted well to market developments have had the foresight and ability to invest in varieties of citrus or other horticultural products that are in demand.
- Those who have found it more difficult to adapt have typically been those with significant proportions of oranges processed into concentrate. Many have small orchards and limited resources.
- Like many other agricultural enterprises, citrus growers face a number of risks — in particular, fluctuations in their income and lengthy payback periods on investment.
- Certain characteristics of the industry, including the prevalence of non-citrus production on many farms, off-farm income and the increasing use of medium-term supply contracts, provide scope to manage many of these risks.
- The citrus industry's growth is impeded by some regulatory factors — such as high trade barriers in some overseas markets and costly labour market arrangements.
- The benefits of the sole importer arrangement in the United States tend to be overstated, because of the influence of other factors on returns from that market.
- It is important that reviews of this and similar export control arrangements be conducted in a genuinely independent and transparent manner.
- The citrus industry has access to a range of general government support programs to improve its performance and facilitate adjustment to economic change.
- The Commission considers that additional industry-specific assistance is not justified: much of the industry is already adapting successfully to change; and the diverse nature and performance of farm households which grow citrus mean that such assistance would not target low-income problems efficiently or equitably.
- For these reasons and because a tariff increase would not provide much assistance to growers in difficulty, the Commission also considers that a safeguards investigation is not warranted.

Source: Citrus Growing and Processing, Productivity Commission 2002, Report No. 20, Australia, Canberra

2. Global Situation

Citrus Industry Snapshot

World production of citrus fruit has experienced steady and continuous growth in the last decades of the twentieth century. Total annual citrus production was estimated by the Food and Agriculture Organisation of the United Nations (FAO), at over 105 million tonnes in the period 2000-2004. Oranges constitute the bulk of citrus fruit production, accounting for more than half of global citrus production in 2004.[1]

Citrus fruits are produced in warm temperate to tropical areas of the world. According to *Projections of World Production and Consumption of Citrus to 2010,*[2] FAO report, the major citrus producing countries are as follows:[3]

Oranges	Brazil, United States, Mexico, India, Spain, China, Iran, Italy, Egypt, Indonesia.
Small citrus (eg: mandarins)	Nigeria, China, Syria, Guinea, Japan, Saudi Arabia, India, Sierra Leone, Angola, Tunisia.
Lemons and limes	Mexico, India, Iran, Spain, Argentina, Brazil, United States, China, Italy, Turkey.
Grapefruit	United States, China, South Africa, Mexico, Israel, Cuba, Argentina, India, Turkey, Tunisia.

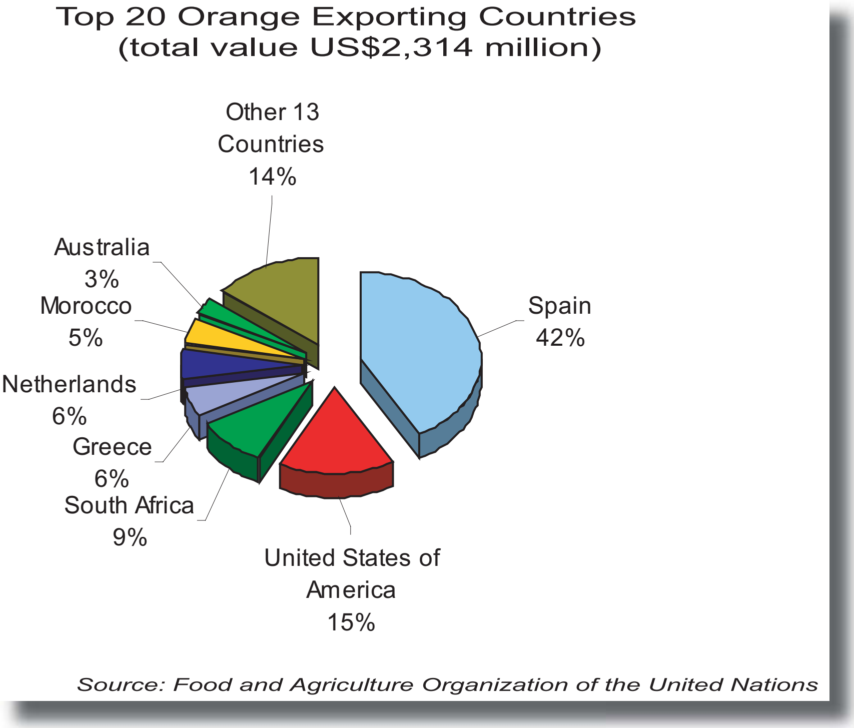
According to FAO data, in 2004, 140 countries produced citrus fruits. However, most production is concentrated in certain areas. Most citrus fruits are grown in the Northern Hemisphere, accounting for around 70% of total citrus production. Main citrus fruit producing countries are Brazil, the Mediterranean countries, the United States (where citrus fruits for consumption as fresh fruit are mainly grown in California, Arizona and Texas, while most orange juice is produced in Florida) and China. These countries represent more than two thirds of global citrus fruit production.

In the Mediterranean countries, citrus fruits are produced mainly for fresh fruit consumption. Spain is the leading producing country in the area. USA and Brazil are the leading producing countries of processed citrus fruits. In the United States most of the production is consumed domestically.

The Northern Hemisphere accounted for around 62% of world fresh citrus exports in 2003. The Mediterranean, as a region, is a prominent fresh citrus exporter, providing nearly 60% of global fresh citrus fruits exports.

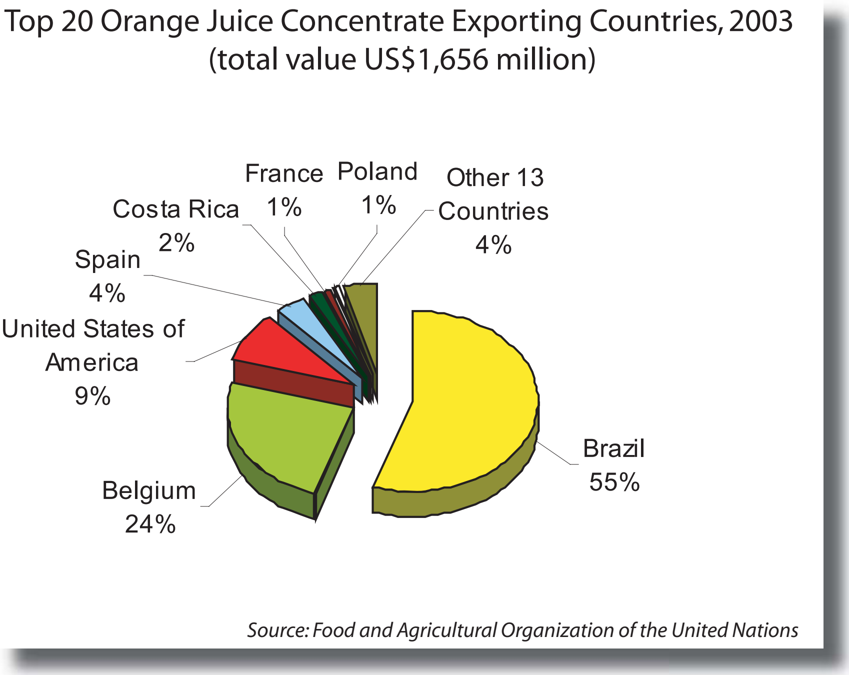
Citrus fruits processing accounts for approximately one third of total world citrus fruit production. More than 80% of it is orange processing, mostly for orange juice. The major feature of the world market for orange juice is the geographical concentration of production with just two main players: the State of Florida in the United States and the State of Sao Paulo in Brazil. Production of orange juice between these two players makes up roughly 85 percent of the world market.[4]

Global Orange Exports



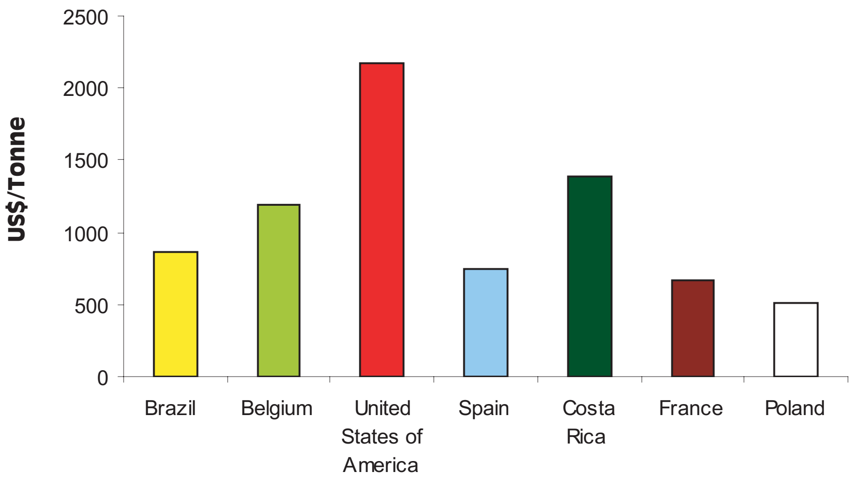
In 2003-04 the top twenty orange exporting countries exported US$2.31 billion worth of oranges globally. Of these Spain dominated, exporting 42 percent or US$972 million worth, with the United States of America being the second biggest at 15% or US$347 million. Australia contributed 3 percent or $69 million to global orange exports. The Netherlands at 6% is believed to be a secondary exporter and is a non-producer country.

Orange Juice Concentrate Exports



During the same period the top twenty countries exporting orange juice concentrate exported US$1.66 million worth of concentrate globally. Brazil led the way with 55% or US$911 million worth with Belgium contributing around one quarter or US$414 million. Australia is a net importer of orange juice concentrate. Belgium is not believed to be a producer but is a secondary exporter of concentrate sourced elsewhere.

Comparison of Price for World Leading Orange Juice Concentrate Exporters, 2003



Source: Food and Agricultural Organization of the United Nations

The previous graph shows that the United States exports orange juice concentrate at the highest price, in excess of US$2,000 per tonne, where the leading exporters in Brazil and Belgium export at half that price or less.

Consumer trends, behaviour and product demands

It is important to monitor consumption patterns and consumer trends to better understand the way in which consumers make decisions about their food purchases and usage, to help maximise opportunities by meeting consumer needs.

According to AC Neilsens' '*What's Hot Around the Globe: Insights on growth in Food and Beverage 2004*', three key trends have driven growth within food and beverages in the past 12 months:

- A continued focus on health
- The need for convenience
- The growing impact of private label products

The last of these trends is yet to have a significant impact here in Australia, but with both the major supermarkets launching a significant drive in this direction, it is felt to be just a matter of time before the shift toward private labels makes its presence known in our marketplace.

The former two trends, for health and convenience have been strong for some time. Consumers are consistently sending the message that they want "...*Products that are healthy, convenient and provide them with good value for money.*" [5]

The AC Nielsen report looks at growth trends in terms of sales value and reported that the aggregated sales value of 89 Food and Beverage categories, across 59 countries, grew by just 4% over the previous year. Some categories showed a decline, while some had outstanding growth. One of the fastest growing categories, up 5%, and certainly the largest by value, was Non-Alcoholic Beverages, valued at 150.4 billion Euro. This is encouraging news for those with a vested interest in the citrus juice market. That is until you dig a little deeper into the category of Non-Alcoholic Beverages itself. The products within the category that would seem to be driving the growth are soy-based drinks, drinkable yoghurts and sports/energy drinks.

Despite the fact that fresh citrus juice easily satisfies the market trends and consumer desires for healthy and convenient products **and** that it falls within the fastest growing Food and Beverage category globally, **citrus juice barely rates a mention**, recording just 2% growth alongside products like soy-based drinks that managed an impressive 31% growth. One of the messages here is that any marketing that is being conducted is less effective than it should be. Beverage consumption is growing, but competitors in the same category with products that satisfy the same consumer needs, are enjoying significantly greater growth. Citrus juice may be able to meet a number of consumer demands and satisfy growing purchasing trends, but it would appear not to be the first choice of many consumers.

There was some promising news within the Fruit and Vegetable category of the AC Nielsen report. Consumers are eating more fruit and vegetables and some new opportunities could be opening up with significant growth in the frozen fruit market. While starting from a tiny base and only being measurable in 14 countries, it still enjoyed a growth rate of 9% from 2003 to 2004.[6] The frozen fruit market seems to be made up predominantly of ingredient-ready frozen fruits for manufacturers to process into new food products. It does, however, include retail packaged, ingredient-ready frozen fruits such as berries and citrus segments, frozen fruit smoothies and shelf-ready frozen desserts such as peaches in syrup and frozen fruit salad.

Global consumption and consumption trends[7]

The FAO report, *Projections of World Production and Consumption of Citrus to 2010*, states that world consumption of oranges grew at a compound rate of 3.5 percent over the period ranging from 1986-88 to 1996-98. While consumption of fresh oranges grew at an annual rate of 2.9 percent, this was superseded by growth in processed orange consumption, which grew 4.2 percent per annum. Increased consumption of processed oranges in Europe was one of the primary forces supporting expanded world consumption. Even though per capita consumption of fresh oranges in the EU declined from 13 to 9.7 kg, per capita processed orange consumption nearly doubled to 30 kg (fresh fruit equivalent).[8] Per capita consumption of processed oranges also grew in Canada and the United States, offsetting decreases in fresh orange consumption.

Processed orange consumption, however, is still concentrated in the developed countries of North America and Europe. These two regions collectively account for over 88 percent of world consumption. In other regions, particularly Latin America, markets for processed orange products appear to be evolving. Processed orange consumption in Mexico more than doubled and Brazilian consumption increased by 50 percent over the period from 1986-88 to 1996-98.[9]

Fresh Oranges

While fresh orange consumption has declined in many of the developed countries, it has also expanded in many developing countries, especially in the emerging economies of Mexico, India, Argentina and Brazil. Strong consumption growth was also observed in China. According to *Projections of World Production and Consumption of Citrus to 2010,*[10] a FAO report, fresh orange consumption is declining in the developed countries for two reasons. Firstly, it is being replaced by orange juice consumption. The evolution of not-from-concentrate (NFC) orange juice in both North America and Europe has been supported by the perception that NFC closely duplicates fresh-squeezed in flavour but offers greater convenience. Second, with advancements in transportation and storage, fresh citrus is now confronted with more competition from other fruits such as bananas, grapes and strawberries.

Citrus is a product that can meet the needs of consumers who are health conscious, demand convenience, and place a premium on food safety. Continuing improvements in transportation logistics will allow exporters to provide year-round supplies of high quality fresh citrus products, and also allow processed citrus producers to provide convenient, reasonably priced products to consumers throughout the world.

"These observations mean that world demand for citrus products should continue to expand, and that the long-run outlook for citrus producers remains positive." [11]

Orange Juice

Consumer research conducted by the respected, United Kingdom based Campden and Chorleywood Food Research Institute in conjunction with the Swedish Research Institute for Food and Biotechnology, gave interesting results that showed a divide between the taste perceptions of the elderly and younger people.

Two groups of consumers, the first group ranging in age from 65 to 85 years and the second from 24 to 32 years, were provided samples of different orange juices and asked to judge the intensity of flavour characteristics.

Overall, the elderly group found flavours to be less intense, whether sweet or bitter, and while both groups agreed on the sample they liked the most and the one they liked the least, everything in between was ranked differently. In fact, the elderly group liked every sample while the young group disliked a number of them.[12]

This research indicates that the elderly perceived flavours to be less intense than younger consumers and therefore were less sensitive to taste modifications. This could have implications for the Australian marketplace where our population is aging at a rapid rate. According to the Australian Bureau of Statistics, the Australian population aged 65 years and over is projected to increase to between 6.1 and 11.7 million in 2101. As a proportion of the population, this is an increase to between 29% and 32%.[13]

New Citrus Products

In a number of overseas markets there have been new citrus-based products developed with the aim of better meeting consumer demands and securing a more solid hold in the marketplace.

CitraPac's ' CitraBits™' is a new product designed to satisfy the snacking market and do away with messy, inconvenient peel. It is pure juice and pulp, the frozen juice cells of fresh Florida oranges and grapefruit, packaged in a convenient, ready-to-eat pocket, designed to appeal to children. There is also a premium version of the product, CitrusPearls™.[14]

According to a publication called '*Healthy Insights Issue 6*', put out by Rath Design Communications in the UK, a juice manufacturer has entered the 'functional' category by adding fish oil to fresh OJ. Called 'Supajus', the product is being marketed as a 'think drink' and being sold in 150 vending machines in British schools. The product carries the line "*Omega-3 DHA is essential for a healthy mind and body*."

In the USA, the soft drinks industry has been hit by a consumer shift away from sugary carbonated beverages towards healthier options, such as fruit juices and bottled water. Making up for lost market share the soft drinks makers need to respond by diversifying their core brands.

Confirming the growing appeal of citrus flavours, even soft drinks giant Coca Cola Amatil has launched both lemon and lime flavoured versions of its flagship beverage.

Quest International has launched a range of citrus flavours for the beverage industry that uses cold-pressed ingredients, including orange, lemon, lime, mandarin and grapefruit with improved stability on previous citrus flavours in the portfolio. Cold-pressed citrus fruit oils are more aromatic than their distilled equivalents.[15]

Not only are there opportunities for citrus to develop products to meet consumer demands for healthy and convenient food, but also to take advantage of the preference consumers at large have for citrus flavours.

Production Forecast

Projections of World Production and Consumption of Citrus to 2010 indicates that world citrus production and consumption has witnessed a period of strong growth since the mid-1980s. Production of oranges, tangerines, and lemons and limes have all expanded rapidly. Larger production levels have enabled higher levels of total as well as per capita consumption of citrus. Even faster growth has been realised for processed citrus products as improvements in transportation and packaging have lowered costs and improved quality.

With rapid output expansion and slower demand growth for some citrus products, however, has come lower prices for both fresh and processed citrus products, especially at the grower level. As a result, the rate of new plantings has slowed. Hence, projected growth rates in both production and consumption over the next ten years are expected to be lower than those realized over the last ten years.

Projections of World Production and Consumption of Citrus to 2010 identifies the two largest citrus producing countries as Brazil and the United States, indicating they are expected to retain their leadership in global production. Sao Paulo, Brazil and Florida, United States are the largest processed orange producing regions in the world.

With the growth of clementine consumption, Spain is expected to expand its production of tangerines. China is expected to realise expanded production and consumption of oranges and tangerines and it has been suggested may become an important market for processed citrus and fresh grapefruit.

Other Latin American producing countries such as Argentina, Mexico, Cuba, Belize and Costa Rica are also expected to continue to expand production, but at a slower rate. Apart from Spain, European producing countries are expected to continue to experience small declines in production.

Citrus production and consumption in Asia is also expected to expand, but consumption will be supported primarily from domestic production. Many of these countries maintain high tariffs on the importation of citrus.

Given the uncertain political and economic environment in Africa, production is expected to expand only in those countries along the Mediterranean Sea and in South Africa.

References

[1] *Citrus Fruit*, Info Comm report, United Nations Conference on Trade and Development (UNCTAD), www.unctad.org, accessed 6/7/05

[2] Thomas Spreen, *Projections of World Production and Consumption of Citrus to 2010,* Food and Agriculture Organisation of the United Nations (FAO) website. Economic and Social Department., www.fao.org

[3] See Appendix A, 'Global Production', for more detailed information on a country-by-country basis.

[4] ibid.

[5] ACNielsen, *What's Hot Around the Globe: Insights on Growth in Food and Beverage 2004,* AC Nielsen Global Services, December 2004, p.2.

[6] ACNielsen, *What's Hot Around the Globe: Insights on Growth in Food and Beverage 2004,* AC Nielsen Global Services, December 2004, p.28.

[7] See Appendix B for country-by-country consumption information.

[8] Thomas Spreen, Projections of World Production and Consumption of Citrus to 2010, op cit.

[9] ibid

[10] Thomas Spreen, *Projections of World Production and Consumption of Citrus to 2010,* Food and Agriculture Organisation of the United Nations (FAO) website. Economic and Social Department. Http://www.fao.org/DOCREP/003/X6732E/x6732e02.htm

[11] ibid

[12] 'Sensory perception and Aging', Swedish Research Institute for Food and Biotechnology and Campden and Charleywood Food Research Institute, no date provided.

[13] *Australian Social Trends: Populations, Scenarios for Australia's Aging Population*, Australian Bureau of Statistics, 2004. www.abs.gov.au accessed 28/6/05

[14] See www.citrapac.com

[15] *Quest product manager explains new citrus range*, 12/1/05, foodnavigator-usa.com accessed 28/6/05

3. National Situation

a) Industry Snapshot

Production

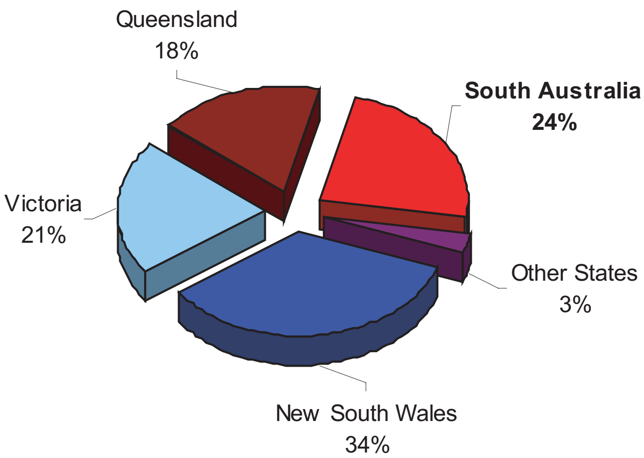
According to the *Productivity Commission 2002, Citrus Growing and Processing Report,* the citrus industry represents approximately 14.6 per cent of the total value of fruit produced in Australia and 1.3 per cent of the total value of agricultural production.[16] The citrus industry is the second largest horticultural industry after the wine grape industry. The range of citrus fruits grown in Australia includes oranges, mandarins, lemons, limes and grapefruit. The main markets for citrus are fresh fruit (domestic and export), fresh juice (domestic and export), and juice drinks manufactured from frozen concentrated orange juice (FCOJ).

Two dominant varieties of orange are grown — Navel and Valencia. The navel variety is largely consumed as fresh fruit in domestic and export markets (80 per cent), with the lower quality fruit is mostly processed for FCOJ. Valencias are consumed as fresh fruit in domestic and export markets (around 35 per cent) and as fresh juice (55 per cent), with the remainder (10 per cent) processed into FCOJ. Mandarins are predominantly consumed as fresh fruit in domestic and export markets, with a small proportion processed into juice. Navels and mandarins attract higher prices than Valencias because of their superior eating qualities.[17]

Almost all of Australia's citrus is grown in the irrigation areas in South Australia around Berri and Renmark (Riverland), the Murrumbidgee Irrigation Area (MIA) of New South Wales around Griffith (Riverina), along the Murray River in southern New South Wales and northern Victoria (Sunraysia and Mid-Murray), and the Central-Burnett and Emerald regions of Queensland.

The pie chart below breaks down citrus production by state. In the charts New South Wales produced the largest quantity of around one third of the nations production, with South Australia being the second biggest producer, closely followed by Victoria and Queensland.

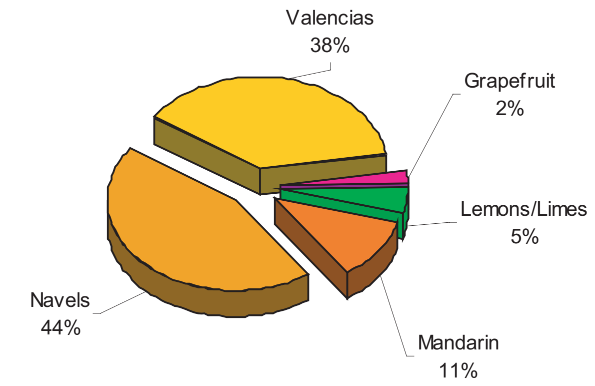
Australian Citrus Production, 2003/04
(544 kilotonnes)



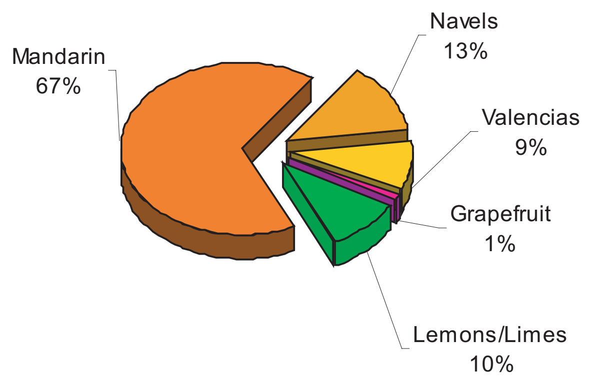
Overview of the citrus producing states

The charts below give a breakdown of each Australian State's citrus production by variety. For Victoria, NSW and South Australia the dominant citrus are Navel and Valencia oranges. In Queensland, mandarins are the dominant type. South Australia has a close balance of production of Navels and Valencia's , while navels dominate in Victoria and Valencia's in NSW.

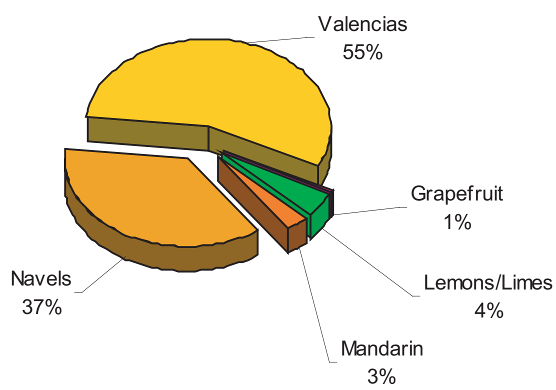
South Australian Citrus Production, by Variety, 2003-04
(129 kilotonnes)

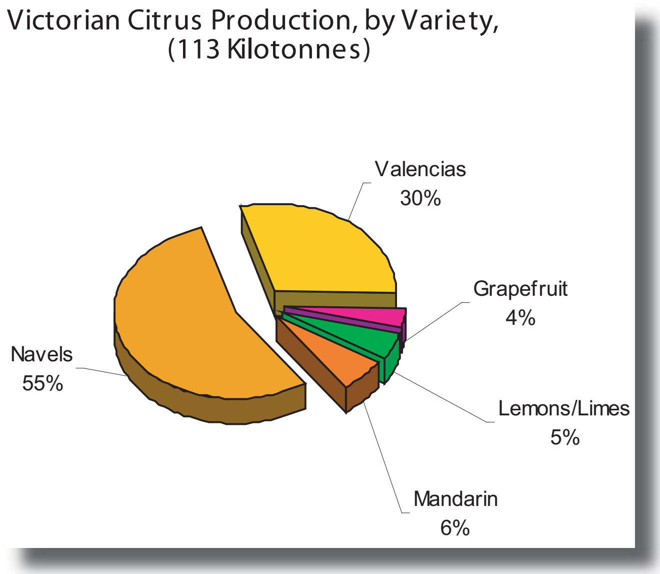


Queensland Citrus Production, by Variety, 2003-04
(99 kilotonnes)



NSW Citrus Production, by Variety, 2003-04
(188 kilotonnes)





Tree Productivity

A typical citrus tree can live for 75 years, though commercial citrus tend to produce for a maximum of 45 years, however fruit production will have declined considerably towards the end of the tree's life. Most citrus growers prefer to turn their block over (replace trees) every 30 years. Trees can take up to six years of growth before they are considered to be 'bearing' by commercial standards. Commercial growers utilise rootstock plants to help reduce the non-bearing period. Optimal bearing age is typically between 16 – 25 years. There are a large number of rootstocks for growers to choose from, with each variety having an impact on yields, fruit quality, tree size and tolerance to salts and diseases.

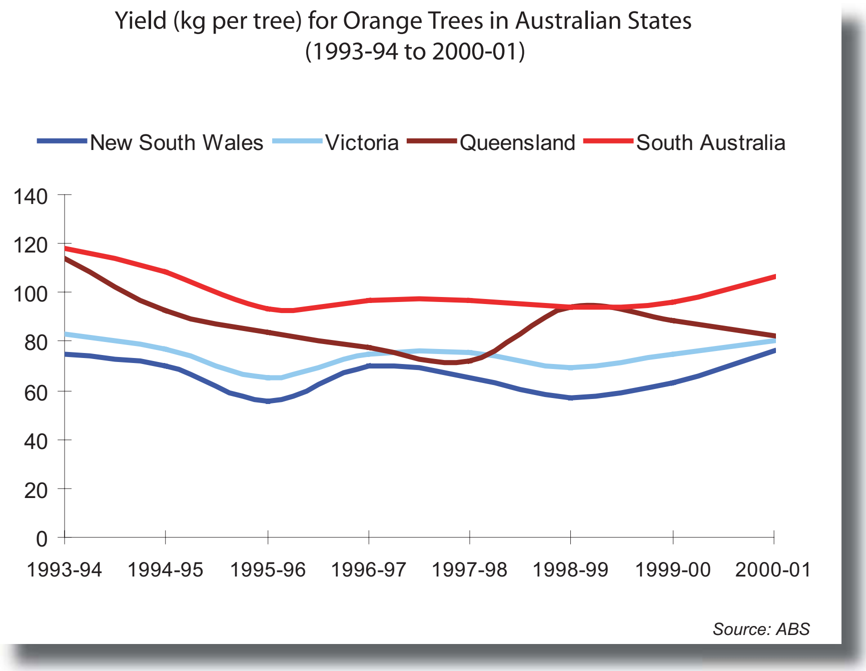
Management techniques, climatic conditions and rootstocks all influence crop yields and packouts. 'Packout' refers to the ability to pack the appropriate fruit for a particular market, meeting colour and size requirements. It is one element that is heavily influenced by orchard management, as a poorly managed orchard, where perhaps harvest has been mistimed or incorrect water volumes have been applied and affected fruit size, packouts can reportedly be as low as 30%, while a strong packout rate can be as high as 75%.

Anything that doesn't meet the market requirements and is not included in the packout becomes a secondary or 'over-run' product destined for juicing, stock feed or even the reject dumps.

The average annual yield that could be expected of the various types of mature citrus trees in the Murray Valley region, according to Murray Valley

Citrus, is as follows:

- Valencia 140 kg per tree
- Navel 60 kg per tree
- Lemons 200 kg per tree
- Grapefruit 240 kg per tree
- Imperial mandarin 130 kg per tree
- Ellendale mandarin 110 kg per tree[18]



Average yields are generally slightly higher in South Australia. However there is considerable annual variation that presents a challenge for crop forecasting. This seasonal variation is one of the major factors influencing industry performance, whether that is from the perspective of growing, processing, packing or marketing.

References

16 *Citrus Growing and Processing*, Productivity Commission 2002, Report no. 20, AusInfo, Canberra.

17 ***Ibid***

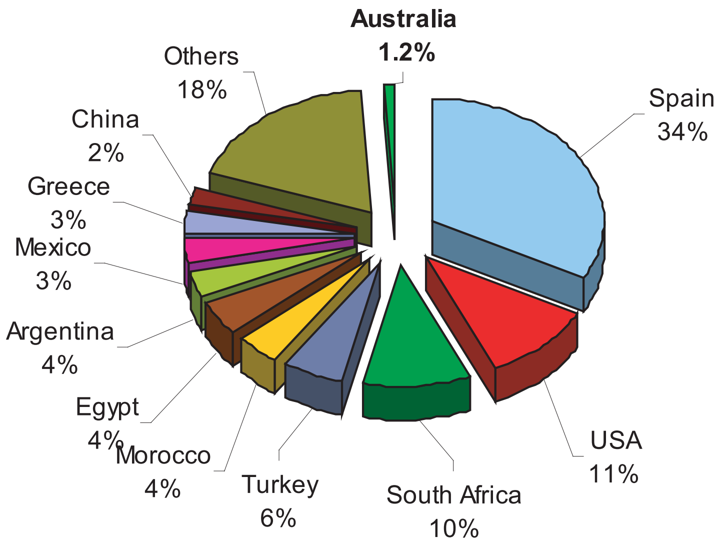
18 *Citrus in the Murray Valley*, The Story of Oranges, April 2004, www.mvcitrus.org.au, accessed 28/6/05.

b) Imports and Exports

Exports of fruit

Below is data that outlines the top citrus exporters, compared to Australia, by volume, giving some indication of Australia's current size on a world scale.

The Major World Citrus Exporters vs Australia by Volume, 2003-04
(World: 10,464,000 metric tonnes)



Source: Food and Agricultural Organization of the United Nations and ABS Trade Data

Australia has reached this position by an approximate doubling of export volumes since the early 1990's and a tripling of export $ value.

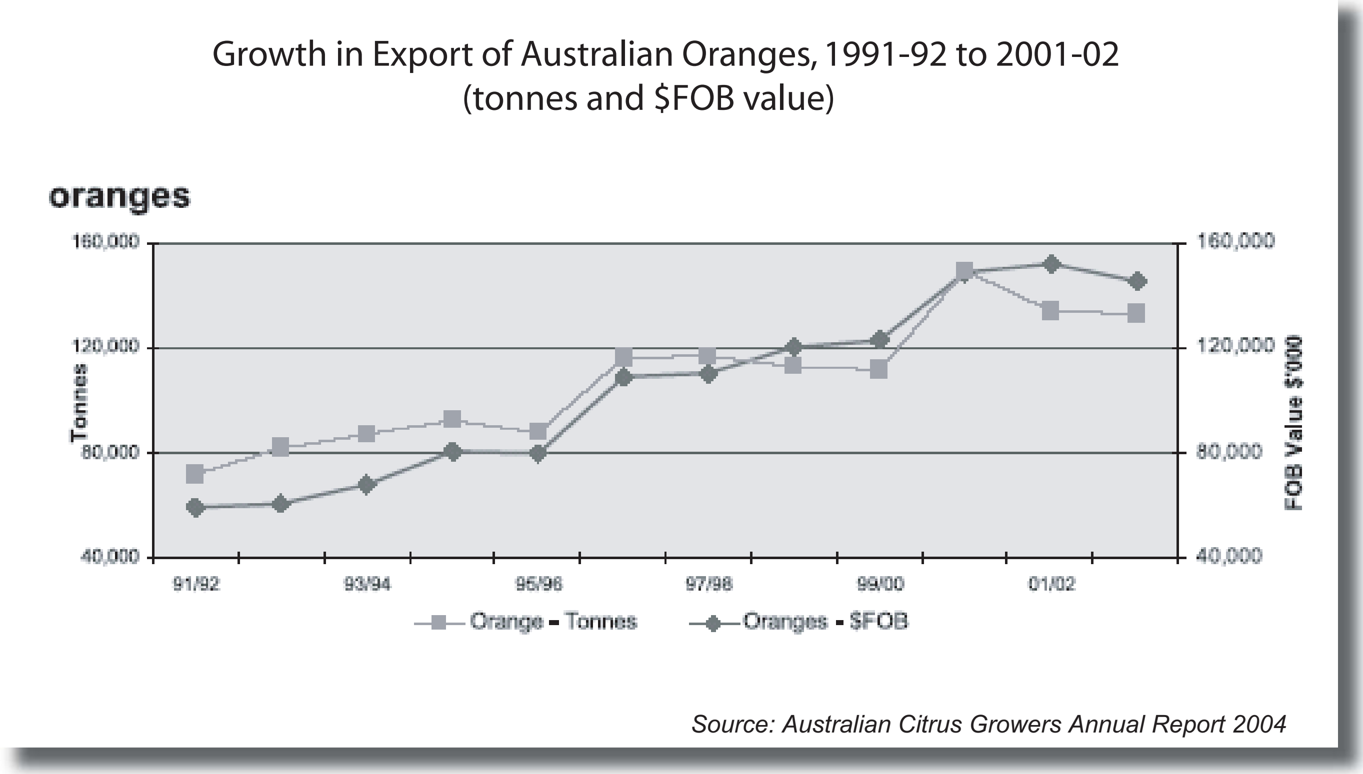
Sources:

Global data: *http://www.fao.org. Exports of fresh Citrus ('000 Metric Tonnes), Citrus Commodity Notes, June 2004*

Australian data: *ABS Trade Data (Exports of Citrus fruit, '000 T, excl. L, Cartons)*

Prepared by Scorecard team, Food SA.

Growth in export of Australian Oranges, 1991-92 to 2001-02 (tonnes and $FOB value)



Source: Australian Citrus Growers Annual Report 2004, p. 28

Statistics - Exports of Australian Citrus - Nine Months to 31 March 2005

Note: This data will be updated as soon as the 12 months to June 2005 statistics are released.

Fresh Citrus (tonnes)

Destination	NSW	VIC	QLD	SA	WA	NT	Total	FOB $'000
Navel Oranges								
Pacific	391	1,984	168	1,044	-	-	3,587	3,511
Asia	7,699	18,555	812	10,306	26	10	37,409	36,178
Middle East	336	2,438	-	1,272	758	-	4,804	4,329
Europe	69	521	-	618	-	-	1,208	1,669
America	4,856	8,376	-	8,071	-	-	21,302	34,702
Total Navels	**13,351**	**31,874**	**980**	**21,311**	**784**	**10**	**68,310**	**80,389**
(9MIE 31 Mar 04)								
% change on previous year							19	11

Source: *Statistics, Exports of Australian Citrus Product*, Australian Citrus Growers, Nine Months to 31 March 2005

Destination	NSW	VIC	QLD	SA	WA	NT	Total	FOB $'000
Valencia Oranges								
Pacific	46	761	80	470	-	-	1,356	1,172
Asia	3,416	8,829	1,382	9,214	128	2	22,971	19,473
Middle East	76	778	-	2,296	163	-	3,314	2,331
Europe	-	51	-	-	-	-	51	45
America	-	24	-	-	-	-	-	24
Total Valencias	**3,538**	**10,444**	**1,461**	**11,979**	**291**	**2**	**27,716**	**23,045**
(9MIE 31 Mar 04)	2,578	8,884	2,725	10,441	13	26	24,719	21,470
% change on previous year							12	7

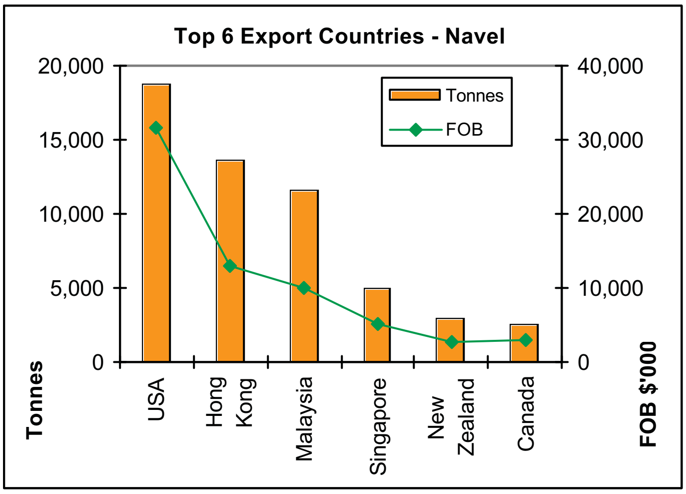
Destination	NSW	VIC	QLD	SA	WA	NT	Total	FOB $'000
Other Oranges								
Pacific	39	27	10	30	-	-	105	121
Asia	45	77	49	*	-	-	172	170
Total Other Oranges	**84**	**105**	**58**	**30**	**-**	**-**	**277**	**292**
(9MIE 31 Mar 04)	21	262	2	699	12	0	996	969

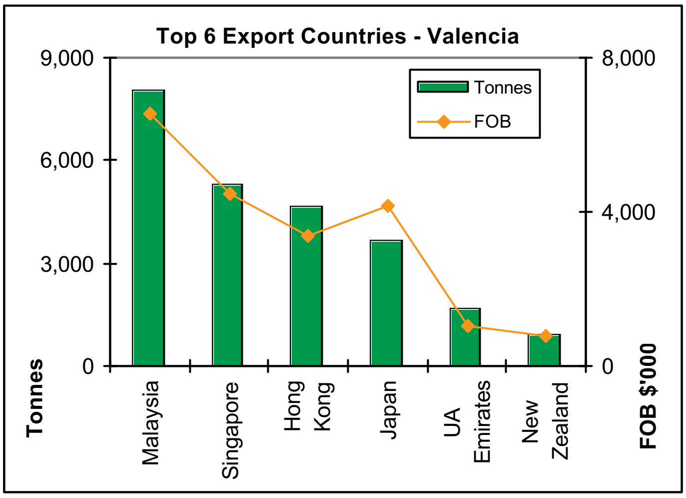
Total Oranges	**16,973**	**42,422**	**2,500**	**33,320**	**1,075**	**12**	**96,302**	**103,726**
(9MIE 31 Mar 04)	13,910	34,689	3,285	30,971	35	34	82,978	94,952
% change on previous year							16	9

Source: *Statistics, Exports of Australian Citrus Product*, Australian Citrus Growers, Nine Months to 31March 2005

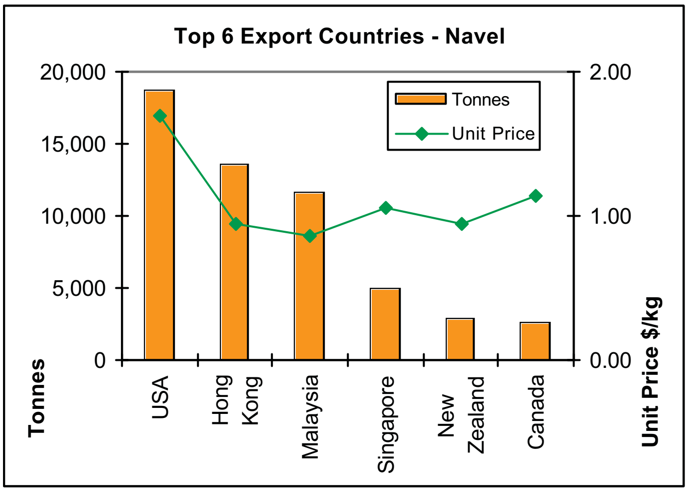
Top export destinations for navels are USA, Hong Kong and Malaysia. For Valencias the top export markets are Malaysia, Singapore, Hong Kong and Japan.

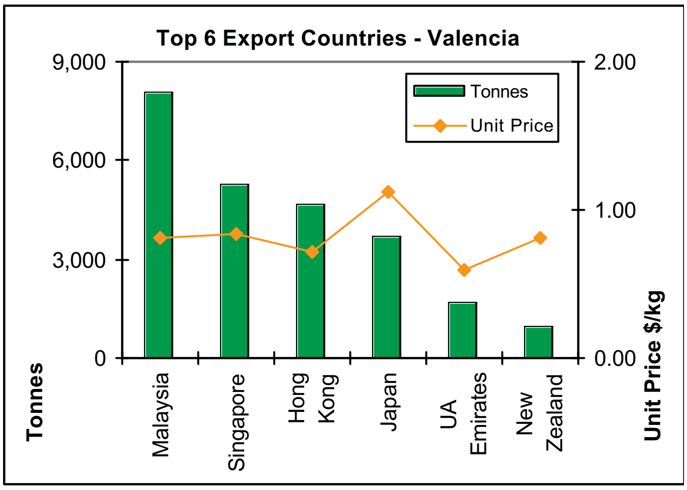
Volume and FOB [1]





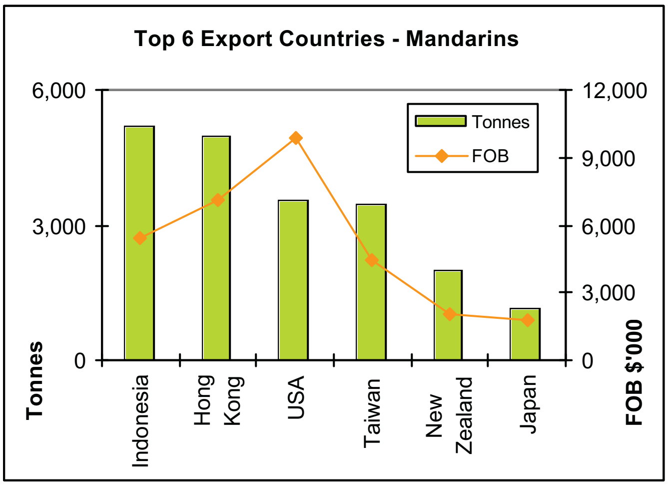
Volume and Unit Price [2]



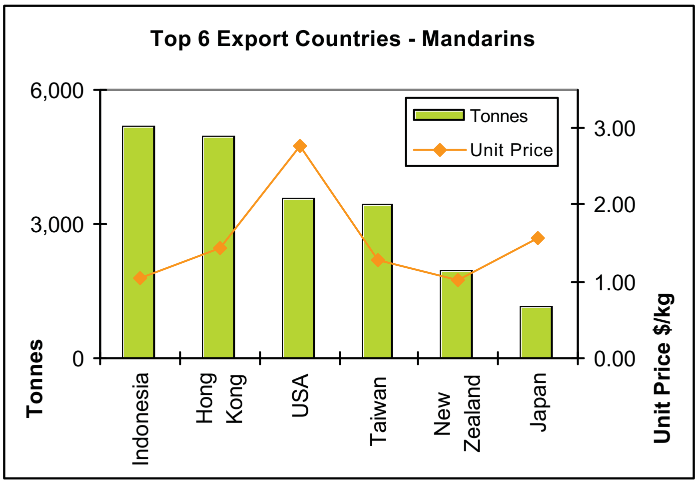


Destination	NSW	VIC	QLD	SA	WA	NT	Total	FOB $'000
Mandarins								
Pacific	195	600	154	1,178	-	-	2,128	2,395
Asia	90	570	15,220	655	4	1	16,538	20,810
Middle East	-	3	715	106	2	-	825	1,205
Europe	-	193	294	177	-	-	664	1,141
America	85	1,345	271	2,301	-	-	4,003	10,581
Total Mandarins	**370**	**2,711**	**16,654**	**4,417**	**6**	**1**	**24,159**	**36,133**
(9MIE 31 Mar 04)	406	2,531	16,164	3,996	26	1	23,122	35,331
% change on previous year							4	2

Volume and FOB [1]



Volume and Unit Price [2]



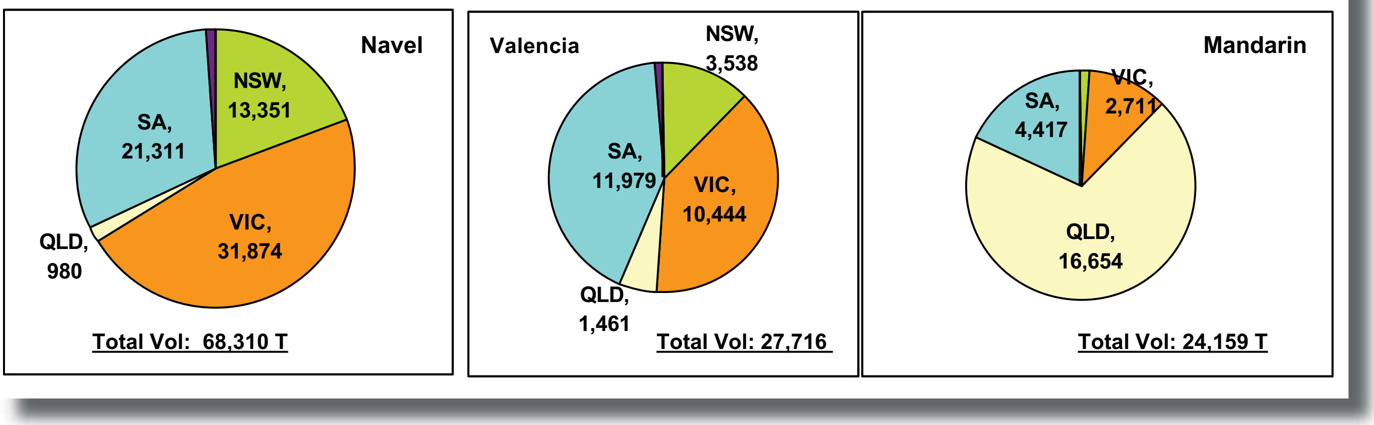
Destination	NSW	VIC	QLD	SA	WA	NT	Total	FOB $'000
Lemons/Limes								
Pacific	1	8	5	23	-	-	37	121
Asia	6	88	20	376	*	1	490	489
Middle East	-	1	-	69	*	-	71	52
America	-	114	-	63	-	-	178	275
Total Lemons/Limes	**7**	**212**	**24**	**531**	*****	**1**	**776**	**936**
(9MIE 31 Mar 04)	80	712	78	648	14	3	1,537	1,905
% change on previous year							-50	-51

Destination	NSW	VIC	QLD	SA	WA	NT	Total	FOB $'000
Grapefruit								
Pacific	*	2	2	13	-	-	17	20
Asia	1	3	107	*	8	*	119	132
Middle East	*	5	1	74	21	2	102	79
Europe	-	-	*	-	-	-	*	6
Total Grapefruit	**1**	**10**	**110**	**86**	**28**	**2**	**238**	**236**
(9MIE 31 Mar 04)	4	189	3	11	57	1	265	310
% change on previous year							-10	-24

Source: *Statistics, Exports of Australian Citrus Product*, Australian Citrus Growers, Nine Months to 31March 2005

Destination	NSW	VIC	QLD	SA	WA	NT	Total	FOB $'000
Other Citrus								
Pacific	*	-	*	1	-	-	1	3
Asia	*	69	425	9	-	*	503	705
Middle East	-	1	26	-	-	-	26	22
Europe	-	25	-	-	-	-	25	39
Total Other Citrus	*****	**95**	**451**	**10**	**-**	*****	**556**	**769**
(9MIE 31 Mar 04)	27	24	1	0	*	*	53	61
% change on previous year							945	1,157

Tonnes Exported, by State, relative to other States



These pie charts represent the relative tonnages that were exported, relative to each state, for a variety. Each variety pie chart is independent of the others. It is intended to show relativity within the variety only and is not a comparison across the varieties.

Note:

FOB: 'Free On Board' is a transportation term that indicates that the price for goods includes delivery at the seller's expense (and usually also the insurance costs) to a specified point and no further, at which point the buyer takes responsibility.

Unit Price: calculated as Value/Qty, or alternatively, FOB/Tonnes; converts a Tonnage and FOB amount for a destination to a unit price$/kg to allow some comparison between countries. NB: it is only an indicator as FOB inputs are variable (e.g. freight)

The export data in this report relates to the " State of Origin". In relation to exports the definition of State of Origin is: 'The Australian state in which the final stage of production or manufacture occur'

Source: *Statistics, Exports of Australian Citrus Product*, Australian Citrus Growers, Nine Months to 31 March 2005

Imports of fruit

Statistics - Citrus Fruits – Fresh or Dried - Imports Cleared for Home Consumption
Nine months to 31 Mar 2005

Variety/ Country of Origin	Imports	Value	
	Tonnes	$A'000	$A/KG
Total Oranges	10,075	11,155	1.11
Total Mandarins	505	856	1.69
Total Lemons/Limes	3,899	6,519	1.67
Total Grapefruits	511	746	1.46
Total Other Citrus	46	98	2.14

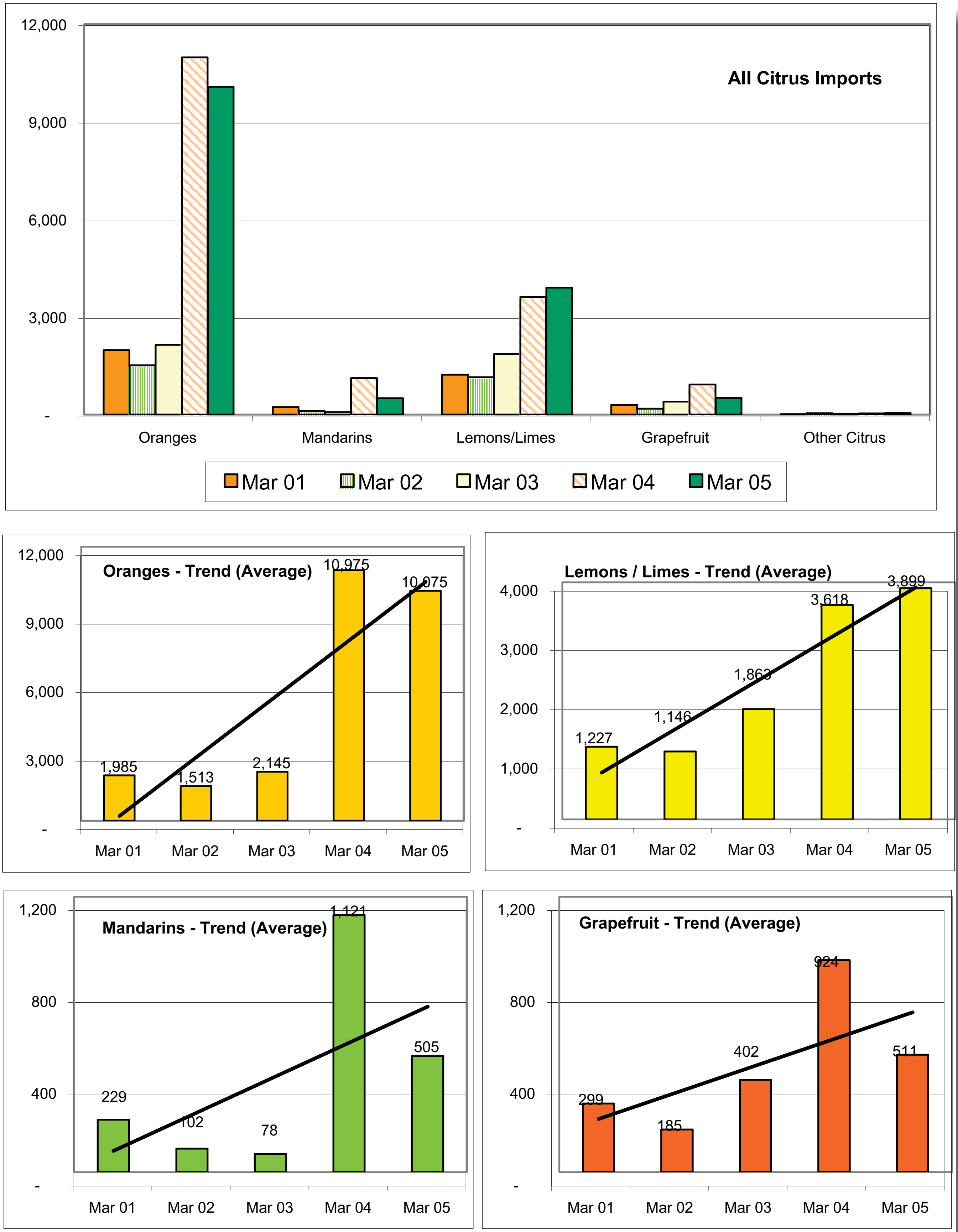
Comparative Imports Nine Months to 31 Mar						
	2005		2004		2003	
Variety	Tonnes	$A/KG	Tonnes	$A/KG	Tonnes	$A/KG
Oranges	10,075	1.11	10,975	1.08	2,145	1.38
Mandarins	505	1.69	1,121	1.34	78	1.31
Lemons/Limes	3,899	1.67	3,618	1.89	1,863	1.95
Grapefruit	-	-	924	0.93	402	0.91
Other Citrus	46	2.14	36	3.07	24	3.94
Total	**15,036**		**16,672**		**4,513**	

Note:

1. ' – ' Nil Quantity
2. ' Others ' Aggregate of imports from origin countries individually less than 1 tonne

Source: Australian Bureau of Statistis data as published by Australian Citrus Growers, Statistics, Citrus Fruits – Fresh or Dried,- Imports Cleared for Home Consumption, Nine months to 31 Mar 2005

5 Year Comparative Fresh/Dried Citrus Imports (Nine Months to 31 March)



Source: Australian Bureau of Statistics data as published by Australian Citrus Growers, Statistics, Citrus Fruits – Fresh or Dried,- Imports Cleared for Home Consumption, Nine months to 31 Mar 2005

The juice industry

There are two distinct types of oranges that supply the juice industry.

Valencia or seeded varieties (Hamlin, Commons, Siletta etc) are the preferred varieties. The Valencia and other seeded varieties are considered to be juice oranges as they can be squeezed and packed for consumption with no other special considerations. These varieties are also marketed as fresh table fruit but do not compete well against navels.

Navel oranges are made up of many sub-varieties (Washington, Leng, Lane, Navelina etc.) and are grown specifically for the fresh table market both domestic and overseas. Navel oranges retain a compound called limonin which when exposed to heat treatment (pasteurising) makes the juice very bitter. Unless treated, bitter navel juice can only be blended at 5% with Valencia before the juice becomes unpalatable. The bitterness reduces as the fruit matures and up to 30% navel can be blended with Valencia late in the season, September through December. Off-run fruit from the more lucrative export and domestic fresh market are taken by the juicing processors during this period.

The citrus juice industry is made up of two distinct sectors.

1. Fresh squeezed and chilled juice which is100% Australian and Not from Concentrate (NFC) juice. The latter can be further categorised as 100% Australian or may contain imported chilled single strength juice. These juices generally have a Brix level of around 10%. Approximately 500 litres of juice can be extracted from 1 tonne of fruit so the pre-extraction price is approximately 50 to 60 cents/litre. Imported aseptic single strength juice costs in excess of $1 per litre.

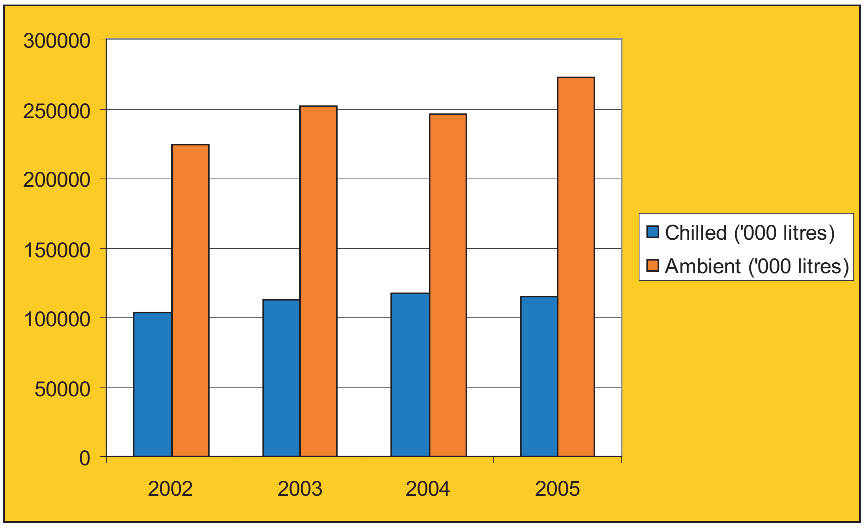
2. Long Life juice that is predominantly made up from imported concentrate (Frozen Concentrated Orange Juice – FCOJ with a Brix level of approximately 66%) by dilution. Juice from FCOJ costs approximately 22 to 25 cents per litre. This is used in non premium products, particularly ambient juices and fruit boxes.

All sectors of the juice industry are price sensitive, whether it be the Premium Fresh Juice end or the cost driven Long Life sector.

According to the Australian Fruit Juice Association, the chilled juice market in Australia increased from 2002 (103 million litres), through 2003 (112 million) and 2004 (117 million) but has declined in 2005 (114 million). This was a 2.6% drop in growth however there was still a 2.6% increase in value at $245 million in 2005. Over the same period the sales of ambient juice continued to increase, 2002 (224 million litres), 2003 (231 million), 2004 (246 million) and 2005 (272 million) and were worth $376 million in 2005.[19]

The ambient juices are therefore the strongest sector. Similar, but not identical, figures were shown in the 2004 Annual Report of *Retail World*.[20]

Trends in juice sales in Australia



Source: Minutes: *Fresh Fruit Marketing & Processing Forum, May 05*, Australian Citrus Growers, provided by the Australian Fruit Juice Association

Imports of juice

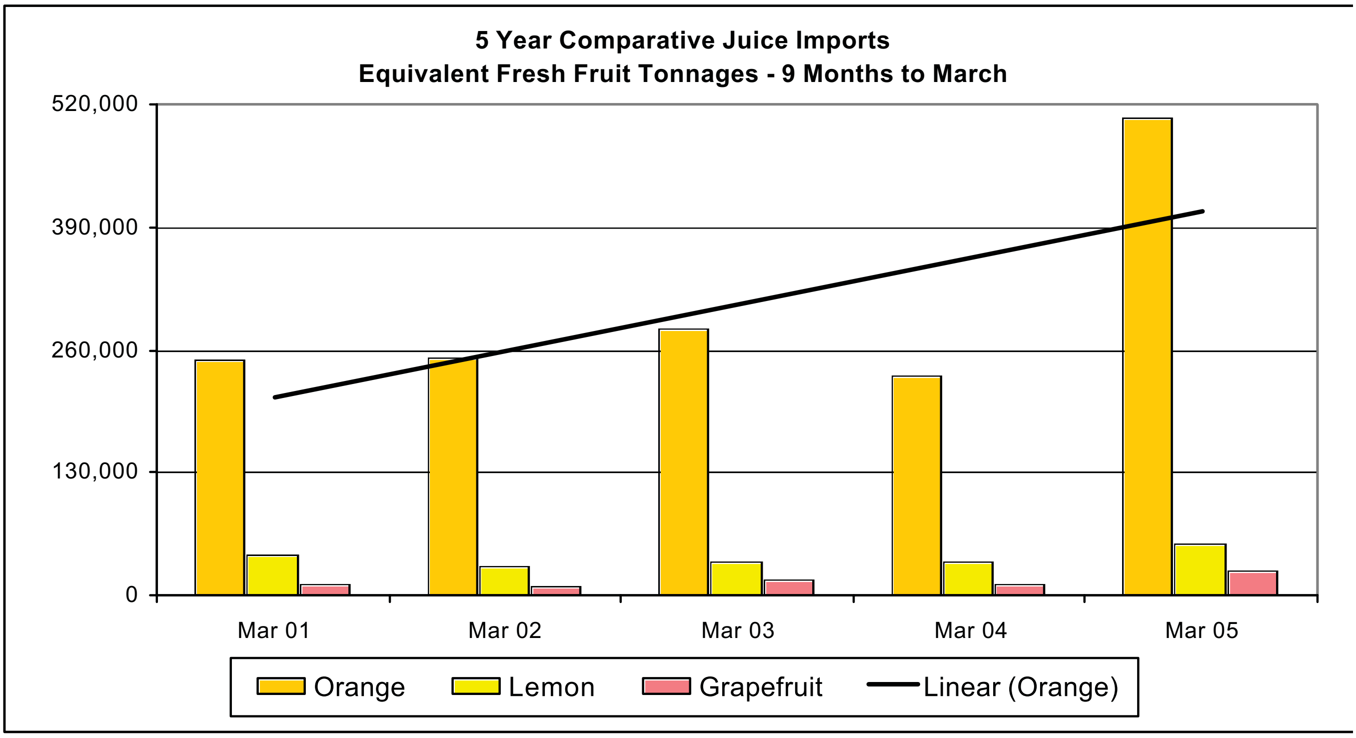
Statistics - Citrus Juices/Citrus Oils - Imports Cleared for Home Consumption Nine Month to 31 Mar 2005

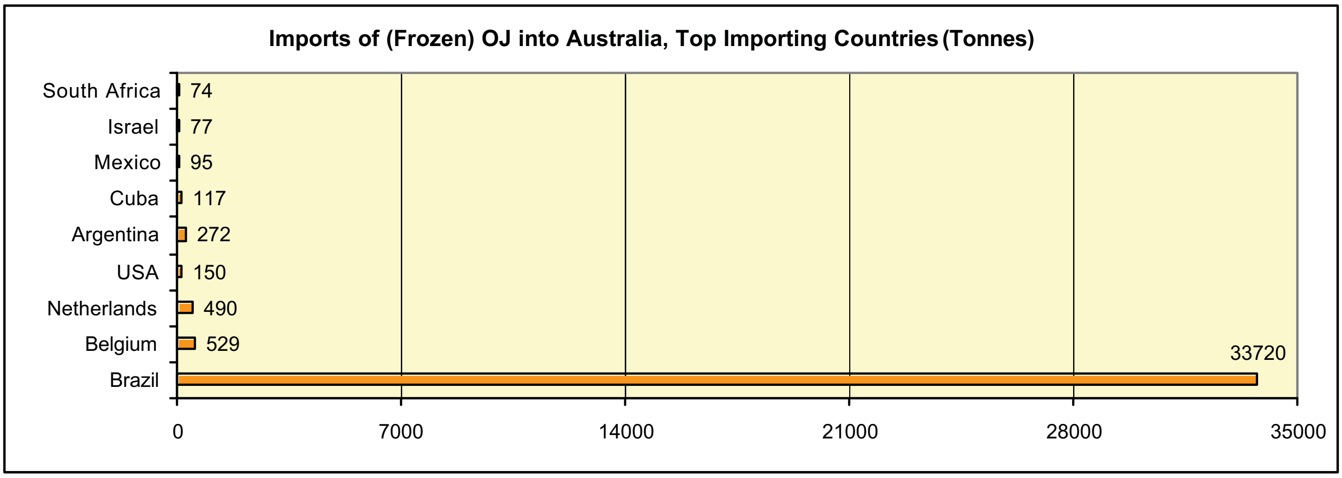
Variety/ Country of Origin	KG '000	Customs $A'000	Total $A/KG
Total Orange Juice (frozen) (200911/19)	35,683	44,566	1.31
Total Orange Juice (Not Frozen) (200912)	3,175	1,655	.55
Total Grapefruit Juice	955	1,845	2.00
Total Lime Juice – Unsweetened	301	443	1.47
Total Mandarin Juice	22	47	2.26
Total Lemon & Other Citrus Juices	1,657	2,157	1.37
Total Citrus Juice Mixtures	69	138	2.04
Total Citrus Oils (Kilograms '000)	294	2,724	9.25
Juice Imports - Equivalent Fresh Fruit Tonnages#			
	9 Months to 31 Mar 05	9 Months to 31 Mar 04	9 Months to 31 Mar 03
Orange	505,152	232,239	281,985
Lemon	53,451	36,015	35,074
Grapefruit	25,144	11,551	15,437

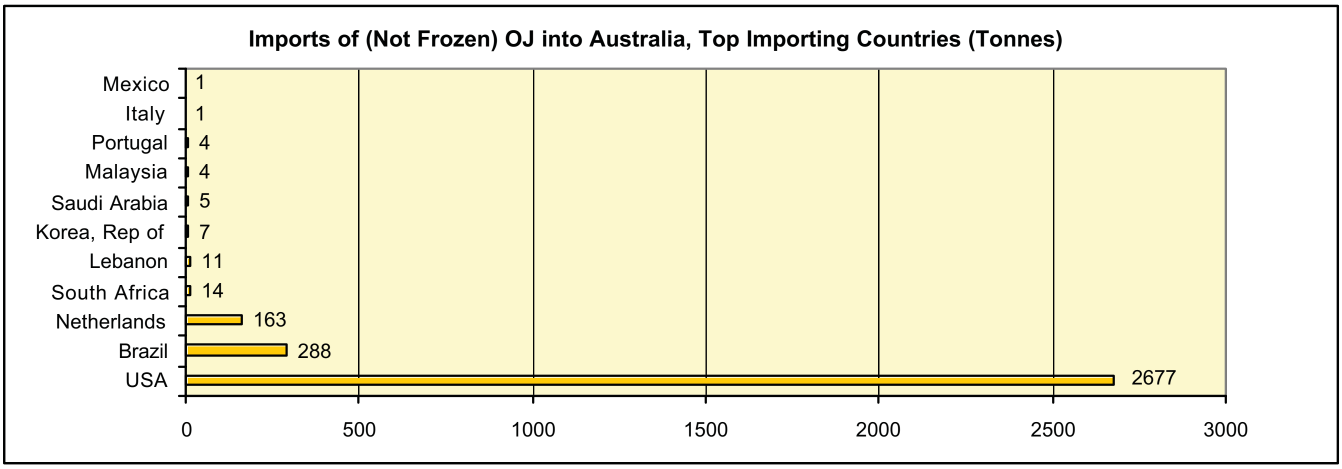
Notes:

1. # — Conversion equation has been amended
2. Re-imports — Goods originally exported, subsequently imported in the same condition in which they were exported, or after undergoing repair or minor operations which leave them essentially unchanged. Minor operations include blending, packaging, bottling, cleaning and sorting

Source: Australian Bureau of Statistics data as published by Australian Citrus Growers, Statistics, Statistics - Citrus Juices/Citrus Oils - Imports Cleared for Home Consumption, Nine Month to 31 Mar 2005





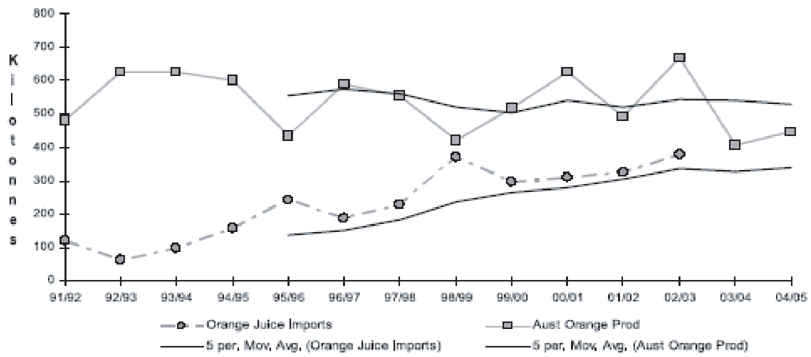


Source: Australian Bureau of Statistics data as published by Australian Citrus Growers, Statistics, Statistics - Citrus Juices/Citrus Oils - Imports Cleared for Home Consumption, Nine Month to 31 Mar 2005

Competition from Frozen Concentrated Orange Juice (FCOJ)

Brazil's annual orange production of 15 million tonnes goes into processing FCOJ. Florida, USA, produces around 9 million tonnes of oranges and directs almost 96% of its fruit to FCOJ. In Australia, it is more like half of the annual production of 600,000 tonnes that is juiced. Brazil, in particular, has extremely low labour costs, and highly suitable climate and efficient economies of scale. It is frankly impossible for Australia to compete directly with imported FCOJ.

Relationship between Australian Citrus Production and the Importation of FCOJ, 1991-92 to 2004-05



Source: Australian Citrus Growers Annual Report

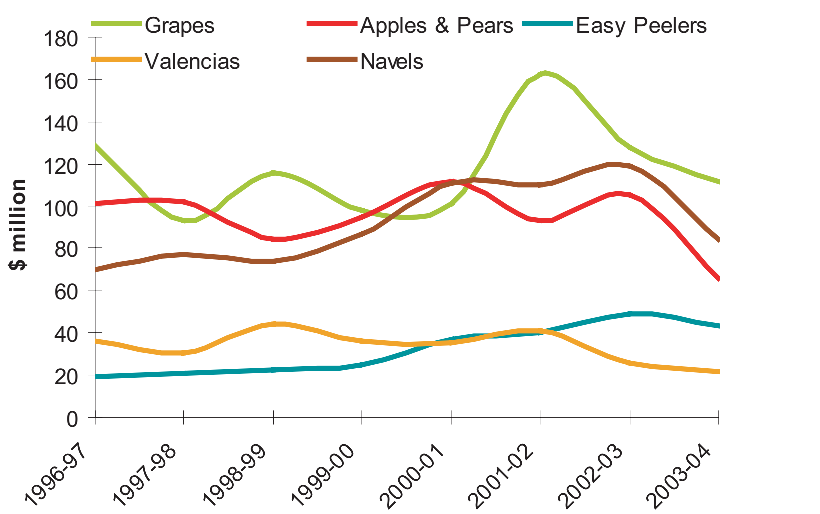
The Productivity Commission Report [21], 2002, stated that between 1989 and 1996, the tariff on imported FCOJ was gradually reduced from 35% to 5%, equating to approximately $7 per tonne of fruit when the report was released. Also, prior to 1986, products that contained more than 25% Australian juice were exempt from sales tax, but this concession was removed in 1995. The Productivity Commission Report estimated that the assistance to industry has declined from 22% in 1989 to 2% in 2000, but it did make the point that most larger producers seem to have adjusted and opportunities within the fresh juice (not from concentrate) market are being targeted.

According to Mr Hugh Cope, a respected citrus industry participant, the reason the Australian citrus industry cannot compete with the price of Brazilian Frozen Concentrated Orange Juice (FCOJ) is encapsulated in the following example:
If the world price for FCOJ is $US 1250 per tonne (FOB Brazil), as it has been in recent times, then with exchange rate, tariff levels and the like, the Brazilian product can be landed in Australia for around 41 cents per single strength litre. For the equivalent Australian product to compete with this price, the Australian growers return would need to be around $96 per tonne. Currently growers' average cost of production is in excess of $200 per tonne.

Competition from Other Fruits

Below is a chart that tracks the export volumes of competitor 'snack' fruits, against both Valencias and Navels. While export volumes are affected by variables including fluctuations in production, trade negotiations and international currencies, this graph still paints an interesting comparative picture over time.

Australian Exports by Various Horticulture Categories, 1996-97 to 2003-04
Comparing Different Competitors



Source ABS Trade, data analysed by PIRSA Scorecard

Free Trade Agreements

Australia recently concluded Free Trade Agreement (FTA) negotiations with the United States and Thailand, which will allow preferential access for Australian citrus in these two markets. The FTA with the United States has saved $600,000 or approximately $23 per pallet according to Riversun Exporters Pty. Ltd.

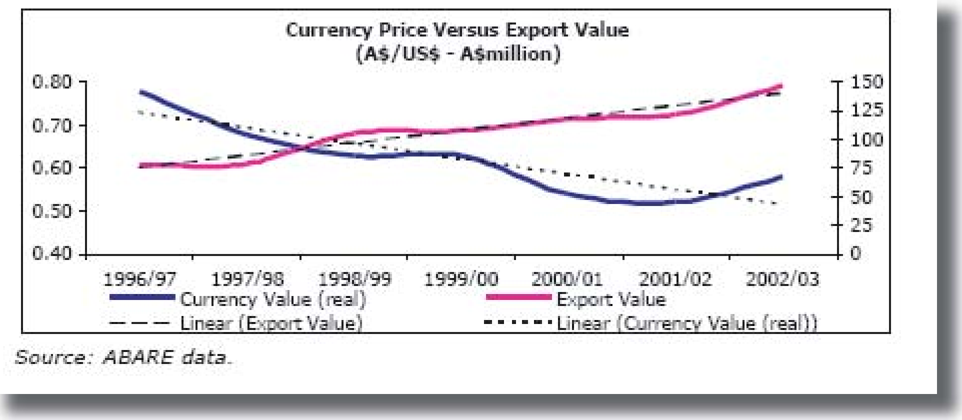
Prior to this, Australia had entered into only two Free Trade Agreements (FTAs), with New Zealand and Singapore. Presently, Australia is seeking to negotiate a number of additional FTA's, including with China and the Association of South East Asian Nations.

The United States is currently seeking access to Australia for citrus fruit from the State of Florida. Australia's quarantine policy-making body is presently conducting an Import Risk Analysis that would be the precursor to access for Florida fruit.[22]

Currency Trends

There has been a long-term decline in the value of the Australian dollar over the past decade, most notably against the U.S. dollar. Over this period, the value of Australia's orange exports (in Australian dollar terms) has increased. The decline in the value of the Australian dollar has been a driver behind rising orange export values over the past decade.

More recently, however, a rising Australian dollar has acted to constrain export price increases when expressed in domestic currency terms. The Australian dollar has appreciated significantly against the currencies of its major trading partners over the last year, particularly the United States, averaging US$0.544 in 2002, US$0.65 in 2003, and peaking at US$0.80 in early 2004. Currently, the Australian dollar is valued at about US$0.77.[23]



Graph as used in USDA Attaché Report, The Australian Citrus Annual, 2004.

References

[19] Minutes: *Fresh Fruit Marketing & Processing Forum, May 05*, Australian Citrus Growers

[20] Retail World, *Annual Report 2004*, Vol 57, No. 24

[21] *Citrus Growing and Processing*, Productivity Commission Inquiry Report No 20, 30 April 2002.

[22] *Australian Citrus Annual 2004*, USDA Attaché report, www.fas.usda.gov

[23] *The Australian Citrus Annual*, USDA Attaché Report, 2004, www.fas.usda.gov

c) Industry Structure

A comparative look at Australia's citrus industry structure

A discussion paper has been prepared by consultants KPMG on behalf of the Department of Agriculture, Fisheries and Forestry and the Australian Citrus Growers. The purpose of the paper was to "…*undertake a broad review of existing industry competitiveness to identify the most efficient and effective structures and industry operating frameworks to meet the needs of a modern export oriented industry.*"[24]

In the discussion paper, the citrus industries of several countries were assessed. South Africa was identified as having the 'flattest' structure and the lowest administration costs, with Spain and the US industries being deemed the most complex and un-coordinated.

The table below compares these three countries with Australia, using key performance indicators, and helps put Australia's industry into a global context.

Note: It should be noted that the data below does not take fruit quality into account and a number of Australian exporters believe they can secure markets in competition with South Africa based purely on superior fruit quality.

Summary of Citrus Industry Key performance Indicators 2003-04					
		Australia	South Africa	Spain	United States
Hemisphere Producer		Southern	Southern	Northern	Northern
Area Planted	('000 hectares)	32	50	310	984
Production - volume	('000 tonnes)	545	1,780	6,323	16,686
Imports - volume	('000 tonnes)	13	3	204	658
Exports - volume	('000 tonnes)	122	1,130	3,799	1,171
Exports volume as % of production volume		22%	63%	60%	7%
Export destination markets by hemisphere		Northern - 90%	Northern - 100%	Northern - 100%	Northern - 92%
		Southern - 10%	Southern - 0%	Southern - 0%	Southern - 8%
Top 4 export destinations		USA	Netherlands	Germany	Canada
		United Kingdom	Russia	France	Japan
		Singapore	United Kingdom	Netherlands	Korea
		Japan	Saudi Arabia	United Kingdom	France
Domestic consumption	('000 tonnes)	236	310	1,434	3, 674
Processing	('000 tonnes)	200	343	1,294	12, 499

Source:USDA GAIN Report SF4045, as used in Citrus Industry Partnership Discussion Paper, KPMG, June 2005

Industry Bodies

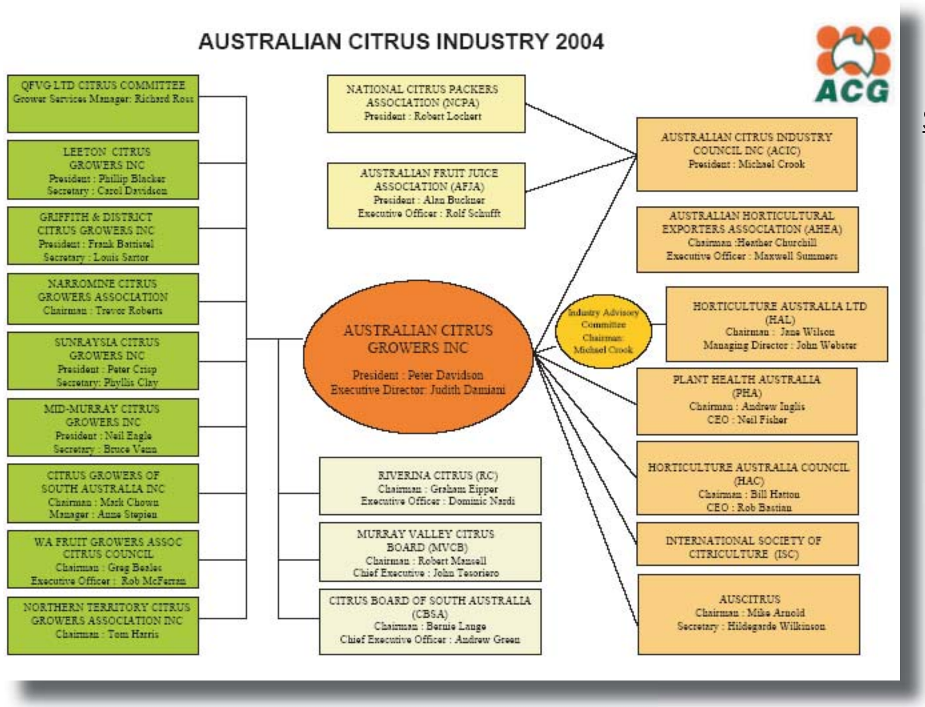
There are three regional citrus boards in Australia — Murray Valley Citrus Marketing Board, Citrus Board of South Australia and Murrumbidgee Irrigation Area (MIA) Citrus Fruit Promotion Marketing Committee (trading as Riverina Citrus). Each of these boards was established through legislation, which set out their general functions and statutory powers. Some of this legislation has been, or is being, reviewed — as is the case for South Australia's Citrus Industry Act 1991.

Source: Australian Citrus Growers, www.acg.com.au

Current National Citrus levies are:

- $2.00 / tonne on all citrus for R&D
- $0.75 / tonne on oranges only for Marketing and Promotion

Most citrus growers also pay regional levies. These funds pay for the localised activity of state or regional boards. Some of this money goes towards assisting with national domestic promotion and also to regional R&D activity. The R&D projects are matched with Commonwealth money through HAL.



Statutory Boards' levies are:

- Murray valley Citrus Board: $5.50 per tonne all citrus, except lemons.
- Citrus Board of South Australia: $2.20 per tonne for grapefruit, mandarins and lemons; $3.20 per tonne for Navels and Valencias.
- Riverina Citrus: $4.50 per tonne for all citrus.[25]

Industry Levies

National levies are usually introduced by the Commonwealth government at the request of industry and once set, are compulsory. For the citrus industry, they are collected at the first point of sale and administered by the levies and revenue service. Grower levies for R&D are matched dollar for dollar by the Commonwealth.

National R&D and marketing programs, funded by levies, are managed on behalf of industry by Horticulture Australia Ltd (HAL). Growers, through their industry organizations, decide on the strategic investment of their levies in national programs that will give benefit to all industry participants.

Grower Association Levies:

There is a diversity between the levies collected by the various grower associations across Australia, ranging from nothing at all to an annual membership fee or voluntary levies. The Citrus Board of South Australia collects $1.265 that is passed on to the Citrus Growers of South Australia of which 0.55 cents including GST is then passed on to the Australian Citrus Growers as subscription to the national body.[26]

The total of grower levies collected in a year averages about $1.9 million. This results in an investment of about $400,000 in a marketing program and around $2.5 million (matched funds) invested in a range of R&D projects.

Prior to 2002, the marketing programme was developed in consultation with ACG, Horticulture Australia and citrus exporters. An annual budget was then finalised by ACG and Horticulture Australia and approved by the Horticulture Australia Board. From July 2002, investment has been be guided by the IAC Strategic Investment Plan 2002 – 2007.

The Citrus IAC Strategic Investment Plan 2002 – 2007 identified 5 key outcomes that are crucial to the future profitability of all citrus:

1. **Market Development** - Increase demand for Australian citrus fruits, both domestically and overseas.
2. **Quality and Safety** - All citrus products meet consumer requirements for quality and safety.
3. **Supply and Demand -** Supply of citrus fruits matches demand, both annually and in the long term through effective supply chains.
4. **Production** - Efficient and sustainable production of quality citrus fruits that are healthy, of the right size and have good internal and external quality.
5. **Communication** - Market information and research results applied by the citrus industry.

In planning for these outcomes, the IAC identified a significant shortfall in the funds required to invest in necessary R&D projects and marketing programs. The projected 5 year income from levies at the present level = $17 million
The IAC 5 year budget estimate to achieve the 5 key outcomes (as above) = $22.8 million.

A proposal was put to growers to increase levies to cover the shortfall of $5.8 million. The proposal was in two parts, recommending an increase in the levy on *mandarins to $8.00 / tonne, who only pay the* $2.00/t R&D levy applies, to be applied as $3.00 /t to R&D and $5.00/t to marketing. Also, to *increase the levy on all other citrus to $4.50 / tonne* (currently $2.75/t on oranges only applies), to be applied as $3.00/t to R&D and $1.50/t to marketing. Growers rejected the proposal.

Labelling regulations

Food Standards Australia and New Zealand (FSANZ) is a bi-national independent statutory authority that develops food standards for all foods produced or imported for sale in Australia and New Zealand. In Australia, FSANZ develops food standards to cover the whole of the food supply chain - from paddock to plate - for both the food manufacturing industry and primary producers.

Food Standards Australia New Zealand announced on the 12th August that it had abandoned its' information on request' approach to the country of origin labelling of food and is proposing a comprehensive package of measures to provide consumers with adequate information.

The proposal would make it mandatory to declare the country of origin on all packaged foods and, in a new provision, the standard has new requirements for the labelling of unpackaged fish, fruit, vegetables and nuts, whether fresh or processed. The country of origin statements will appear on a food label or on a sign displayed with a food in a manner that is clear and unambiguous. The proposal has been put forward in the form of a discussion paper for two rounds of public comment. The FSANZ Board is then expected to consider the final report at the end of September, prior to consideration by the Food Regulation Ministerial Council in late October 2005.

If the new food standard is approved, unpackaged fish, fruit, vegetables and nuts and packaged fresh produce will need new country of origin labelling within 6 months of the standard becoming law. For all other packaged foods, a two-year phase in time will apply, with an additional 12 months for existing stocks.[27]

Labour

The citrus industry, like so many horticultural industries, is very labour intensive. In most citrus operations, labour forms the largest component of the total costs of citrus production.[29] Labour is required primarily for picking, pruning, thinning and hedging. There is limited use of mechanical harvesting in the Australian industry, with most producers feeling hand picking is essential to maintain the high quality of fruit aimed for the fresh fruit market. The cost and availability of labour remains a major issue in most citrus producing regions.

Major Industry players

The Australian citrus industry is characterised by a relatively small number of large players and a plethora of small producers. In Australia, most citrus holdings are relatively small mixed fruit growing operations, with an average harvested area of less than 20 hectares.[30] One of the challenges for the industry moving forward is to accommodate the small and the large players in a competitive global environment.

While it can be all too easy to focus on the potential negative effects large companies dominating agriculture can have on producers, it is important to remember that there can be significant benefits. Large companies can often achieve greater economies of scale, apply better technologies and develop better supply chain links. Often these companies are operating in international markets where size can be important in ensuring that they are cost competitive.[31]

Note: There is a constant shift in ownership among the major South Australian players. The major point to note is that there is a trend toward separating orchard production and management from packing and marketing. The information following is as accurate as possible at the time of preparing this report.

SAI Teys McMahon

Type of business: Commercial property investment company with Horticultural interests.
Size: Citrus specific investments include Nangiloc Colignan Farms, 800 hectares
Two of Yandilla Park's orchards at Renmark and Sunraysia
Location: Head Office is in Sydney, orchards are in South Australia and Victoria.
Description: SAI Teys McMahon is one of the largest managers of unlisted commercial property investments in Australia with over $1 billion in funds under management (as at 31 March 2005). The Primary Infrastructure Fund invests in a diverse portfolio of property and infrastructure assets used in the primary production industry:

- Wine Industry 49%
- Table Grapes 20%
- Almond Industry 20%
- Horticultural and other 11%

These assets are then leased to selected high quality, often listed, corporate tenants on long-term leases.
Nangiloc Colignan Farms Pty Ltd (NCF) makes up 19.8% of the total initial portfolio. It is a vertically integrated grower, packer and distributor of citrus fruits, table and wine grapes, exporting to markets throughout Asia including Hong Kong, Indonesia, Taiwan, the Philippines, Malaysia, Vietnam and Singapore. NCF's 800 hectare Treviso Estates Project at Mildura in Victoria is regarded as one of the country's leading, large-scale, intensive, horticultural developments.
In a transaction worth $40 million, the SAI group acquired Yandilla Park's main farms in Renmark and Sunraysia in late 2004 and entered into a long term contract with Yandilla Park and Vitor for farm management, packing and fruit marketing.

Yandilla Park Ltd

Type of business: Growing, packing and marketing of horticultural products, including citrus. Also owns and runs citrus nursery and provides contract services to industry.
Size: More than 840 hectares, producing on average in excess of 23,000 tonnes of citrus and 3,000 tonnes of wine grapes per season.
Location: operates in Victoria and South Australia.
Description: Purchased by Chiquita in April 2005.[32]
Yandilla Park includes Kangara, Solara and is the majority shareholder of Vitor marketing. Since late 2004 Yandilla Park Ltd manages the horticultural operations for SAI Teys McMahon in Renmark, Sunraysia and Katherine. Timbercorp is another investment company with an interest in Yandilla.

Yandilla Park Limited is one of the few Australian horticultural operations that incorporates a citrus nursery and a large range of horticultural services. Based on statistics provided in the Productivity Commission's report into Citrus Growing and Processing, Yandilla Park's farms grow 3% of Australia's citrus, the packinghouses pack 11% of Australia's citrus and the marketing company sells 13% of Australia's citrus exports.[33]

Yandilla Park claims to have led the citrus industry away from its reliance on Valencias and the fresh juice industry and is actively promoting the planting of fresh table varieties, especially navel oranges and easy peelers, to its growers. Its current plantings consist of 29% easy peelers, 43% winter and summer navels, 20% Valencias and 8% lemons, limes and grapefruit. It sees a great future for the navel varieties and in addition to imperial mandarins, believes that the seedless satsumas and clementines should prove to be the easy peelers of the future.

Yandilla Park's packing division provides a packing service to citrus and avocado growers in the Riverland of South Australia and the Sunraysia district of Victoria. The Renmark packing facility is one of the largest in Australia. It receives over 45,000 tonnes of citrus, and packs over 1.5 million 30 litre equivalent cartons of fruit, per year. The Sunraysia packing facility handles approximately 15,000 tonnes of fruit and packs over 400,000 30 litre cartons of fruit per year. This fruit is packed mostly under the Vitor brand.

Timbercorp Limited

Type of business: Investment manager specialising in agribusiness

Size: Citrus orchards 350 hectares.[34]

Location: Head Office is in Melbourne, with offices in most states, orchards in South Australia.

Description: Timbercorp is a leading investment manager specialising in agribusiness – a sector in Australia worth $160 billion per annum.[35]

Timbercorp's portfolio:

• Eucalypt plantations	80,000 hectares
• Almond orchards	3,691 hectares
• Olive groves	2,777 hectares
• Citrus orchards	350 hectares
• Table grape vineyards	169 hectares
• Mangoes	135 hectares

Citrus has experienced 14% per annum export growth over the past decade, with 25% of production currently export to nearly 50 different countries. Coupled with the ongoing consolidation of retailers, Timbercorp recognised the opportunity to develop large-scale orchards that would be capable of quality fruit over the full season.

We aim to become a plan to have around 2,000 hectares under management by 2008. The first project offering in Citrus was issued in 2004, with projects managed by Chiquita Brands South Pacific Limited under an alliance announced in September 2003.

Chiquita Brands South Pacific Limited

Type of business: Processor, wholesaler and marketer of fresh produce and is responsible for orchard management, harvesting, packing and marketing.

Size: Chiquita has recently (April 2005) acquired East African Coffee Plantations (EACP), which is the holding company for Yandilla Park, the largest integrated citrus growing, packing and marketing enterprise in the country. Chiquita also manages the citrus interests of Timbercorp, approximately 350 hectares with an additional 300 hectares expected to be planted.[36]

Location: Citrus operation in South Australia.

Description: Chiquita's portfolio comprises primarily bananas, mushrooms, berries, kiwifruit, avocados, citrus and wine grapes. Chiquita's recent acquisition of East African Coffee Plantations (EACP) which is the holding company for Yandilla Park, further expands Chiquita's involvement in agribusiness. Yandilla Park now includes Kangara, Solara and is a majority shareholder of Vitor Marketing. Chiquita has sales, logistics and warehousing facilities in Melbourne, Sydney, Brisbane and Adelaide and a brokerage outlet in Perth.

Vitor Marketing Pty Ltd

Type of business: An Australian company owned by a group of major citrus and avocados growers. Its majority shareholder, Yandilla Park Ltd/SAI Teys McMahon , a long established South Australian based horticultural organisation, is involved in growing and harvesting fresh fruit from its own farms throughout eastern Australia. In addition, it provides farm and nursery services, consultancy and management, soil survey, pest control and the design and installation of sophisticated water management and irrigation systems.

Size: 2.5 million cartons of quality fresh fruit sold annually.

Location: Renmark, South Australia.

Description: Vitor markets produced from Vitor growers which include the farms and orchards owned by Yandilla Park (SAI Teys McMahon), as well as other selected growers and packing sheds with which it has an alliance. Vitor sources fruit from the Riverland in South Australia, Sunraysia in Victoria and the Burnett and Emerald regions in Queensland.

Vitor Marketing Pty Ltd is very well represented on the domestic market and has developed export markets in the USA, UK, Japan, Taiwan, Korea, Hong Kong, Malaysia, Indonesia, Singapore, Guam, Thailand, Vietnam, Maldives, United Arab Emirates, Sri Lanka, New Zealand, India, Bangladesh, Kuwait, Bahrain and Italy. Approximately 45% of the citrus crop is sold domestically and 55% exported. Long term business relationships have been established with key customers and alliances formed with 'like-minded' companies.

A vast range of citrus products are available and include navels (early, mid and late season), lemons, limes, Valencias, satsumas, clementines, amigos, daisys, fallglos, imperials, ellendales, Minneola tangelos, honey murcotts, afourer and white and red grapefruit. Vitor also markets persimmons, stonefruit and mangoes.

Through the group's ultimate parent, the UK based agribusiness investment company, Linton Park Plc, Vitor also offers fruit from associated farms around the world, with products such as avocados from Kenya, table grapes from South Africa and Chile and Californian citrus.

Riversun Export Pty Ltd

Type of business: An umbrella organisation under which citrus fruit is exported to the USA.

Size: Riversun Export coordinates 97 per cent of Australian citrus exports valued at around $39m pa to the USA.

Location: South Australia and Victoria.

Description: Riversun as the coordinator, or service provider to shareholders, is a non-profit service company involved in the coordination, consolidation and shipping of product to the USA.

Riversun was formed in 1992 by a group of citrus exporters and packers based in the Riverland of South Australia and Mildura Fruit Company in Victoria. Shareholdings comprise 28 "A" class and 4 "B" class shareholdings who are either exporters, packer/exporters or packers.

In 1992 Riversun coordinated 10 packing sheds, which has grown to 33 packing sheds spread over production areas in three states.[37]

Riversun is a service company only, involved in the coordination and shipment of the product. Individual exporters retain ownership of fruit, which is supplied on consignment to agents in the USA. The US program is currently an exception and is the only market where all exporters of the Australian citrus industry work together to the commercial benefit of all.[38]

The Australian citrus producers strong desire for coordination in new markets, resulted in Australian citrus producers directing the Australian Horticultural Corporation (AHC) to use its licensing powers to license a single importer, DNE World Fruit Sales. This arrangement now allows them to send to the same agent in the USA and they are able to piggyback onto the same chain stores, allowing them to enjoy the higher returns from supermarkets.[39]

This is the only market in the world where the Australian industry has some control over the market.[40]

These 28 company members, supplying fruit for export to the USA collectively represent the majority of citrus exporters and packers from Australia to all markets.

Berri Ltd[41]

Type of business: Australia's largest fruit juice manufacturer and one of the nation's leading beverage producers.

Size: Annual turnover of approximately $600 million. The company crushes 130,000 tonnes of fresh citrus fruit annually and operates at eleven separate locations, with around 1,140 employees around Australia.

Location: Head Office is in Melbourne, also operating in 11 locations across the state, with juice plants in every state except Tasmania and the Northern Territory.

Description: Berri Ltd is an Australian company manufacturing more fruit juice than any other company in Australia, and our spread of brands includes fresh juices and fruits, long-life products, sports drinks and an internationally acclaimed range of fresh herbs.

Products include:

- fresh fruit juices
- drinks and cordials
- water ice range
- spring water
- apricot nectar
- tomato and vegetable juices
- Gourmet Garden Herb & Spice blends

According to Berri's own website, The Daily Juice, Australian Fresh and Mildura sunrise brands are market leaders in the chilled juice and chilled drink product ranges, while other market favourites include BERRI Longlife, BERRI Cordial and Just Juice. Their extensive product range now covers the full beverage spectrum, some food products including unique herb and spice blends.

Unfortunately, Australia does not grow enough oranges to meet the juice market's demand, and Berri sources some of its fruit from overseas. While Australia produces approximately 250,000 to 300,000 tonnes of oranges available for juice each year, around 550,000 tonnes of oranges are consumed annually as juice products.

Berri exports juice to a number of overseas countries and is now stocked on supermarket shelves from Jakarta to Vancouver. The company's extensive export trade spans twenty nations, primarily in Asia and the Middle East.

Nippys[42]

Type of business: Australian, family owned manufacturer and national distributor of chilled fresh juice, long life juice, long life milks and other popular beverages.

Size: Nippy's squeeze around 13,000 tonnes of South Australian oranges every year.

Location: South Australia

Description: The Knispel family owns three juicing facilities in South Australia. One facility is located in Moorook alongside the family orchards, the second is located at Waikerie on the River Murray and the third facility is at Regency Park in Adelaide. The company's brand names include: Nippy's, Aussie Gold, Orange Grove and Australian Garden.

Most of the oranges are grown in the Riverland, South Australia, however additional supplies are also delivered by growers from the Mypolonga region. All of orange suppliers have completed the approved supplier program and have a food safety system in place, such as SQF2000.

Nippy's squeeze around 13,000 tonnes of South Australian oranges every year from the Riverland and Mypolonga regions, with the potential to produce and process 25,000 tonnes of citrus fruit each year. In addition, the apples, lemons, passionfruit, mangoes and pineapples used in Nippy's fresh fruit juices are 100% Australian.

Nippys Waikerie Producers Pty Ltd is a citrus packing and processing complex situated in the Riverland of South Australia.

Approximately 20,000 to 30,000 tonnes of citrus are handled annually and the season extends for 12 months of the year.

Depending on quality and demand, 50-80% of fruit is sized and sorted for packing, which is destined for export and domestic sales. Citrus is exported to the USA, UK, South East Asia, New Zealand, Hong Kong and Japan.

The Waikerie bottling plant produces and sells a variety of 100% juice product and 35% fruit juice drinks for their subsidiary, **Nippy's All Seasons Fruit Juices Pty Ltd.** All Seasons Fruit Juices are based in Sydney, and are a warehouse and distribution outlet for juice products.

Crusta

Type of business: Juice Processor

Size: Processes 22,000 tonnes of fruit, of which between 12,000 to 15,000 tonnes are Valencias and approximately 3,000 tonnes per annum are navels.

Location: Processing plant outside Waikerie.

Desciption: This processor has recently been purchased by Coca Cola Amatil (CCA) and information was extremely difficult to find. Crusta makes up (CCA) fresh orange juice interest, while Pacific Beverages produces its long-life products.

Golden Circle

Type of business: Australia's largest fruit and vegetable manufacturer, processing approximately 15 varieties of fruit and six varieties of vegetables. It operates as an unlisted public company.

Size: Every year more than 42 million litres of fruit juices and fruit juice drinks are packaged into 125 ml, 200 ml, 250 ml and 1 litre tetra briks.[43]

Location: Main factory north of Brisbane and operations in Victoria and NSW.

Sales offices are located in every Australian state and New Zealand.

Description: More than 700 growers supply Golden Circle with premium fruit and vegetables. While seasonal conditions cause fluctuations, the intake of fruit and vegetables for processing is in excess of 180,000 tonnes per year. In 2000, the fruit and vegetable intake was 184,000 tonnes consisting of 114,000 tonnes of pineapple, 28,000 tonnes of other fruit and 42,000 tonnes of vegetables. Manufacturing floor space is 8.3 hectares. Golden Circle's modern tetra brik plant is one of the largest producers in Australia.

Golden Circle manufactures more than 800 products including shelf stable fruit and vegetables (in cans and glass jars), fruit juices, cordials, soft drinks, jams, conserves and baby food.

Golden Circle is well known as a tropical fruit specialist, especially pineapple, although pineapple now only accounts for 20% of its product range.

Australia is the principal market for Golden Circle products, however, it exports to New Zealand, Pacific Islands, Japan, Singapore, Sri Lanka, Hong Kong, China, Indonesia, Philippines, New Guinea, New Caledonia, Solomon Islands, Vanuatu, Fiji and Western Samoa.

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d) The Supply Chain

What the Supply Chain Looks Like

The Citrus Supply Chain
The following information was commissioned in 2001 by the Productivity Commission review of the Australian Citrus Industry and prepared by RETAILworks,[44] a Victorian based consultancy. This sort of information can be difficult and time consuming to collect, so to fit within the constraints of this project, the work provided to the Productivity Commission has been included.

The Elements in the Supply Chain
The elements in the supply chain are shown in the flow chart below. Each arrow and/or complete line represents the potential physical movement of product. The broken line represents the transaction associated with dealing with a broker and not the physical flow of product.

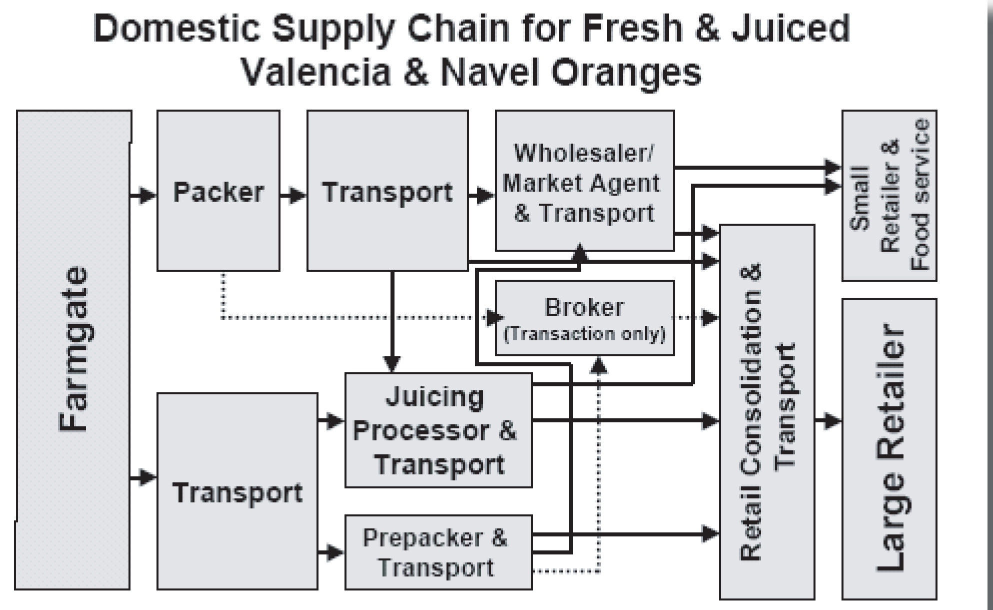


Diagram 1

The export supply chain includes additional steps, such as quarantine inspections, export agents, additional freight and import agents. Each export destination will have its own particular supply chain path for Australian citrus, though the main ones are to the US and SE Asia. The US supply chain has supply consolidated through to one import agent. The SE Asia supply chain has many suppliers dealing through many import agents.

Description of the major elements in the Domestic Supply Chain

Supply Chain Element	Description	Payment methods/terms	Activity/ Value add
Producer – the Farmgate	Producer who grows the fruit and in some cases grades it.		• Production • Harvesting • Grading
Packer	Business that receives, sorts, grades, labels, packs and provides short-term storage for fruit. Transport is organised at this stage. In some cases, the packer also holds supply contracts with juice processors. The Productivity Commission into the Citrus Industry stated that in 2001 there were 144 packing facilities in the Riverland, Riverina, Murray Valley regions of SA, NSW and Vic, or 1 for every 15 growers.	Usually per carton/bag rate	• Quality control • Grading • Packing • Co-ordinating transport • Short-term storage (controlled environment) • Contract supply of juicing oranges
Transport	Business that moves fruit between farmgate, packer, juice processor and pre-packer.	Per pallet/bin/ load	• Controlled environment transport
Pre-packer	Business that receives shed graded bins of oranges, waxes them and then packs into net bags. Forward transport is then organised. Some pre-packers will buy ungraded fruit and then grade, wax and sell it.		• Quality control • Grading and waxing • Pre-packing • Transport
Juice processor	Business that converts juicing oranges into retail ready packs of orange juice.		• Processing fresh oranges into juice • Marketing and distribution
Wholesaler/ Market Agent	Seller of product on behalf of grower or pack house. Usually involves short-term handling and storage.	Usually percentage of value of wholesale selling price	• Marketing, selling and distributing fruit to retailers and food service industry. • Quality control • Controlled environment storage and handling.
Broker	Organisation that co-ordinates the direct dealing between growers/packers and retailers. Brokers are typically handling high volumes for a few clients and do not require physical facilities for actually handling product.		• Marketing and selling • Quality control
Retail consolidation and transport	Here, a variety of fruit and vegetables are consolidated and sorted into retail store orders. Some retailers operate their own consolidation activities and others subcontract it out.	Usually percentage of value of wholesale selling price. Sometimes fixed unit price.	• Cross docking • Quality control • Short-term storage • Controlled environment transport
Retailer	Operator of the retail stores that sell citrus among many other fruit and vegetable products.	Percentage of retail selling price.	• Quality control • Consumer distribution • Promotion

Currently packers buy oranges from growers at a fixed farm-gate bin price, in return for accepting the pack-out and on-selling risks, rather than handling the grower's product on a consignment basis. This can result in lower average grower returns, as it is the packer, while taking on the risks, who does have more extensive market knowledge and can then seek the optimal price for the fruit and does not then share the financial rewards. Packers therefore have a strong incentive to pay growers the lowest possible amount to ensure they are maximizing their own returns.

Some packers hold contracts with juice processors and while this can work well in a commodity market, there is no transparency in the current system. The contractual arrangements between the parties are unknown.

In this country, significant power with regard to pricing is also held at the retail end of the supply chain. If a fruit and vegetable product is not promoted in the chain retail stores, they tend to be treated as a "support line" by the retailer. This results in the product carrying a higher than average margin, to support the promotional activity of other fruit and vegetables. All indications are that this has happened to Valencia oranges at retail. When retailers request that packers/growers lower prices to enable promotional activity may generate higher volumes, but the immediate end result is lower grower returns.

The Productivity Commission Report showed that in 2001 there were 144 packing facilities providing service to 2200 growers across the country. This equated to 1 packer for every 15 growers.[45]
There has been a trend to reduce the number of packing operations. According the data provided for that report by the Citrus Board of South Australia, there were 37 packers in South Australia in 2001. This figure included restricted packers, or those that only have approval to pack their own fruit, as well as unrestricted packers. Information sought more recently from the Citrus Board of South Australia shows that there as of 5 May 2005, there are 19 unrestricted and 12 restricted packers registered in the SA. Showing a small decline in numbers since 2001.

Retail environment

The Australian retail market is one dominated by two major supermarkets, Coles and Woolworths, with these businesses accounting for 48-50% of fresh produce sales in Australia.

In recent developments, both Coles and Woolworths have launched plans for increased house-brands. The move has created a furore as the aim is not to increase consumer choice, but for the supermarkets to reduce their stock of external, independent brands and allocate more shelf space to their own brands. The supermarkets are not just going in at the low end of the market either, but will be segmenting their products to appeal to different types of shoppers—the budget conscious, the after-work shopper seeking convenience and the serious gourmet.
The June 2005 progressive roll-out of Coles' plan will include three price and quality tiers including the budget 'Coles$mart buy', the mid-range 'You'll love Coles' and the premium 'George J Coles'. Coles' target is to achieve 30% of the packaged goods sales through house-brand labels. House brands currently make up just 13% of packaged goods sales.[46] Coles is modeling its house-brand strategy and targets on the success of Tesco in the United Kingdom, where half of its sales are from house-brands.

Woolworths has revealed it will keep its popular Home Brand, but will soon introduce a new range of premium products under the Woolworths label. It is understood there will be 200 different products in the range.[47]

Coles is also looking at improving its fresh produce offer. They are going to be concentrating on more direct supply with producers and are apparently working on improving supply chain logistics.
One of the key components in improving the supply chain is one-touch merchandising. Until recently, every single orange has been handled by supermarket staff to create a merchandising display. Now it must be packed by growers and packers into crates designed to both transport and display fresh produce. Woolworths similarly has rolled out their One Touch programme with the same objective of moving stock from truck to shelves with the least amount of handling.

Producers have limited choice when it comes to market opportunities with significant capital and expertise required to pursue other options such as exporting, value-adding, brand development and vertical integration.

In international markets there are a number of major retailers, all vying to present the most attractive offering to their target market. They conduct market research, seek an appropriate position in the marketplace and set about finding innovative products and offerings for maximum effect. Consumers are surveyed on a regular basis, systems are modified continually for optimal performance and innovation is a key success factor. In Australia, without significant competition forcing such behaviour, the offerings of the major supermarkets are essentially the same and price becomes the only point of difference between them. This creates an environment that limits innovation, is somewhat dismissive of the consumer and can take a stranglehold on producers.

e) Australian Consumer Trends

It is difficult to find reliable and recent consumer studies relevant to the citrus industry. A consumer survey was conducted by Aurora Practical Solutions Pty Ltd as part of the planning process for the New South Wales Citrus Industry Development Strategy programme.

The survey was conducted in late 2001 and has some interesting data, but the limitations of the data should be noted: the research was conducted in only two places, Dubbo and metropolitan Sydney over a 3 week period ending just before Christmas. Also, only adults 15 years and over were considered eligible in a total of 1368 phone interviews. A significant potential target market, children, was overlooked in this survey. In fact the report states, "*In today's households with fewer children and later child bearing, children are not a major target group for oranges*."[48] It can also be argued however that a powerful group influencing the purchasing of their parents and householders has not been accounted for. Children 15 years and under are one of the largest snacking segments and will be the next generation of purchasers. The apple industry has noted that the number of children living in the home is a key driver of changed purchase of apples. A Rural Solutions SA manual prepared for the apple industry states that "*Household size is by far the greatest determinant of purchase levels*."[49] To ignore children is perilous.

A recommendation from the survey report was that as 75% of adults had purchased fresh oranges in the past month, the marketing objective should be to increase purchase frequency rather than try to increase purchase penetration. This fits with shifting consumer shopping behaviour that points to a higher incidence of more frequent shopping trips. Typically these "top up" shopping trips are driven by the need to buy perishable products that include fruit and vegetables. This increases the strategic retail value of a high quality fresh fruit and vegetables offer, as it is a proven influence on how consumers select a supermarket.

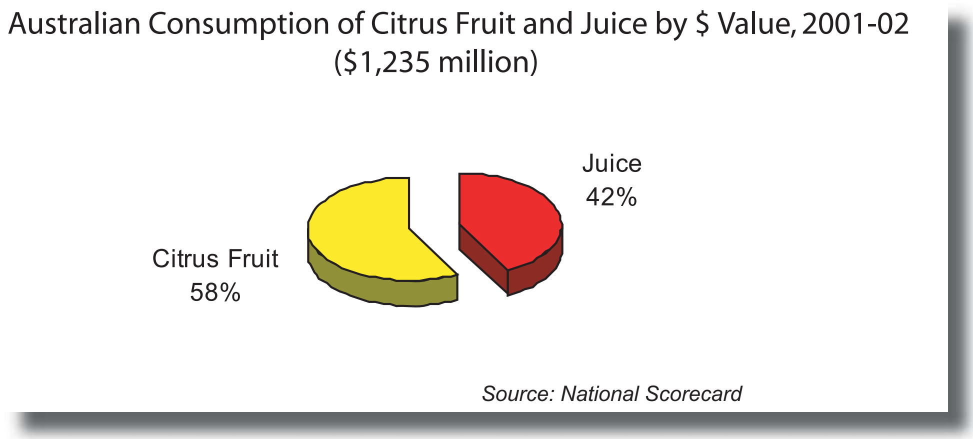
A concern arising from the research results is that with regard to purchase preference between varieties, half of the purchasers surveyed saw Valencia's and Navels as either equal or they were unable make up their minds. This would suggest there is further opportunity to differentiate between the two varieties, communicating the attributes of each to help consumers buy the orange best suited to their needs and thus encourage future purchases. **Oranges should not be a single product category. As apples have grown to include a myriad of varieties acting as brands, so should oranges and other citrus fruits.**

Research conducted for the apple industry by David McKinna et al,[50] shows significant differences in consumption of varieties in different age categories. For example, 55 – 64 year olds were most likely to consumer Braeburn apples while Golden Delicious were popular with 10 – 14 year olds. To treat all oranges and all consumers as the same, is mass marketing and is flawed in a marketplace where identifiable consumer segments have differing needs, desires and product expectations.

The Aurora research report also stated that 1 in 5 consumers were dissatisfied with oranges they had purchased. In consumer research undertaken by Horticulture Australia into fruit consumption, participants unanimously agreed that the quality of fruit varies from week to week.[51] While the research indicated consumers could tolerate this variability in staple fruits, such as apples, bananas and oranges, this is a genuinely frightening finding.

Also frightening was the final point on the same page that quoted the above information "*Overall very few consumers (are) dissatisfied with fruit quality*".[52] With consumers unanimously agreeing fruit quality varies from week to week, the complacency evident in the final point is unhelpful.

While consumers might seem accepting of poor quality standards because they continue to purchase inconsistent fruit, they may also be increasing their purchases of other product categories that better meet their needs, at the expense of fruit. For example, an entire aisle in the supermarket is dedicated to snack foods that rarely waiver in quality or consistency. While those products may not meet demands for health, they can satisfy convenience and are rarely going to let the consumer down, where the consumer expects to be let down by fruit. Why wouldn't consumers purchase the minimum volume of fruit to satisfy the need for healthy food and then find a more reliable substitute to meet their other requirements? The fruit industry must improve its quality assurance techniques and regain the confidence of consumers, encouraging increased purchase frequency and penetration. Consumers are becoming more discerning and expect more from the products they buy. **For the citrus industry to shift its focus and put the consumer first, the practice of paying on size and colour needs to change, with consumer purchase drivers such as taste and juiciness the desired parameters. Ideally, growers should be paid on eating quality.**[53]



Source: http://www.fao.org/es/ess/toptrade/trade.asp

Other findings from the Aurora Practical Solutions[54] survey showed something of a reverse of other reported trends, with oranges recording higher purchases than orange juice. According to this research, orange juice is a product category that has a reasonably high level of brand loyalty, with 73% of survey respondents claiming to have a brand they preferred over others. The three main reasons given in this particularly consumer research for choosing one brand over another were consistent flavour (30%), price/value (14%) and sweet taste (11%).

In this survey, Berri owned the top four brands ranked by popularity. This fits with the data collected by AC Nielsen for its Grocery Report 2004, in which it identifies the Top 100 grocery suppliers by dollar value. Berri is the first citrus industry associated company to appear and it ranks a fairly impressive 21st. Golden Circle came in at 28th and P&N at 36.

While it can be all too easy to dismiss consumer and market research as irrelevant to the science of agricultural production, it should be remembered that in the incredibly competitive world of food and beverage and in a restructuring industry where market forces will soon come to bear, understanding your consumer's needs and wants and having a clear strategy for meeting them will ultimately drive the citrus industry's success. A better understanding of existing and potential citrus consumers and their needs will lead to the development of a more competitive snack/health/ convenience product and a point of difference in the market.

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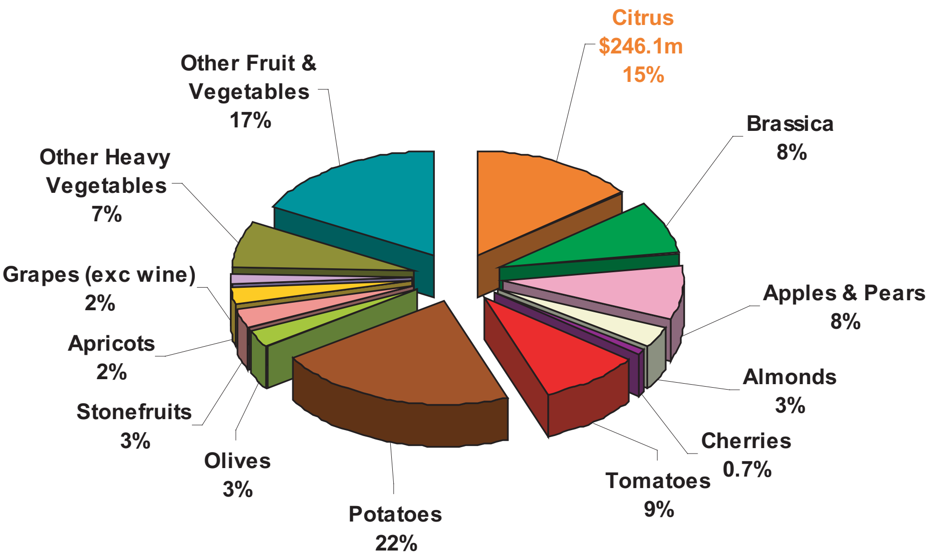
4. South Australian Situation

a) Industry Snapshot

South Australia Overview

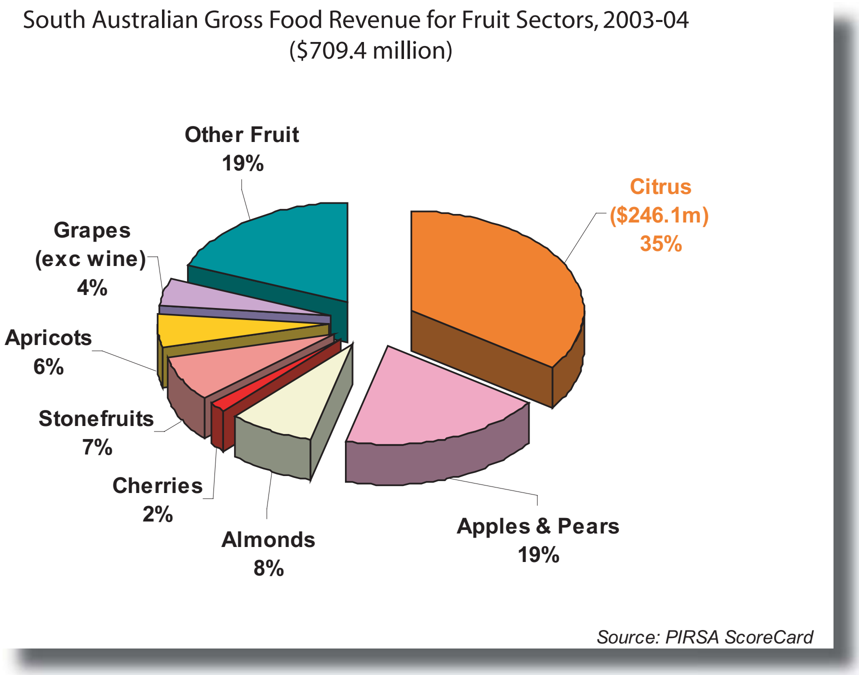
Citrus accounts for 15% of South Australia's gross food revenue, not including wine. As an industry it is a significant contributor, behind potatoes. The other category that appears to be a strong performer, 'Other Fruit and Vegetables' (see chart below) is in fact a combination of smaller sectors including: cucumbers, capsicums, mushrooms, celery, spring onions, sweet corn, zucchinis, marrows, squashes, parsnips etc.

South Australian Gross Food Revenue for the Horticulture Industry, by Sector, 2003-04
($1,665 million)



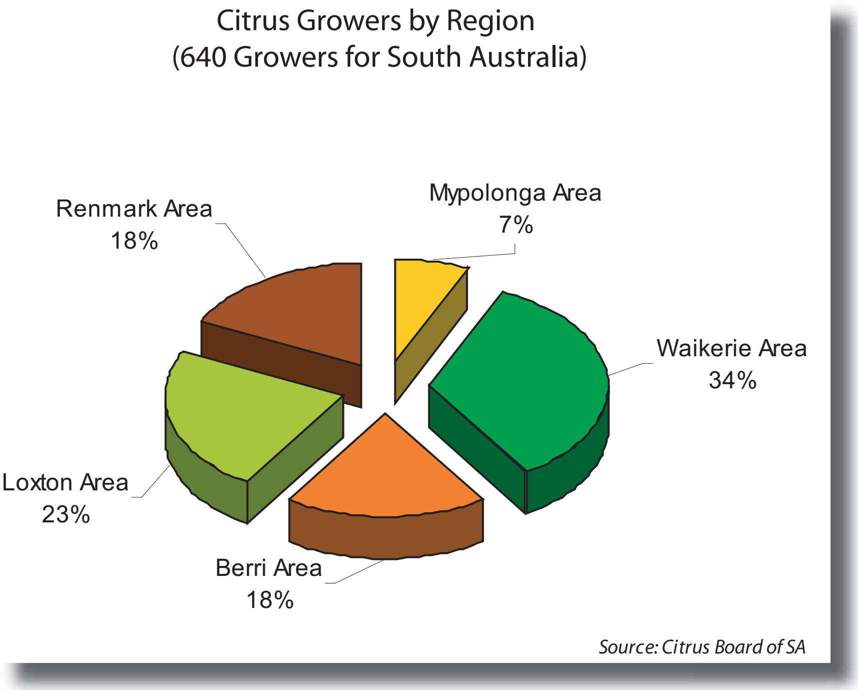
Source: PIRSA ScoreCard

Citrus is the major fruit grown is South Australia and accounts for an impressive 35% of South Australia's fruit revenue by value.

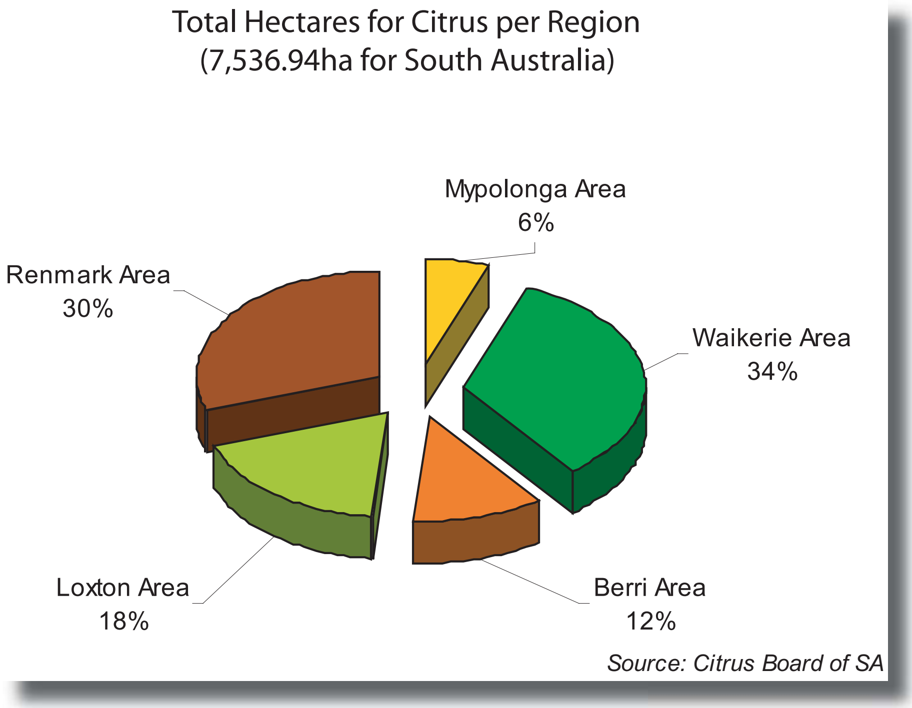


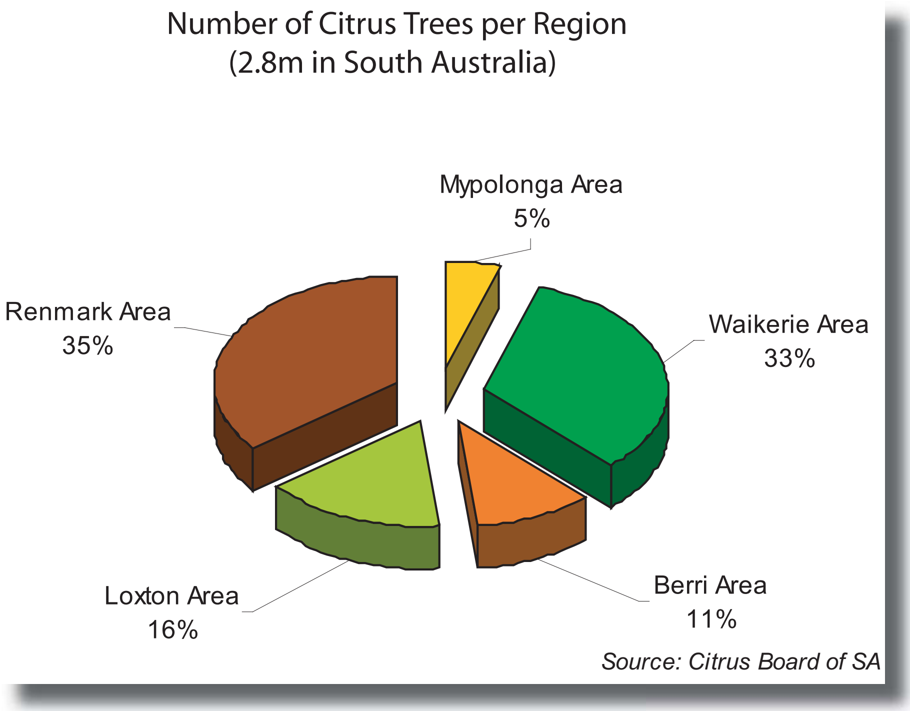
Distribution of the citrus industry in South Australia

Production, packing and processing are all located within close proximity of the River Murray between Murray Bridge in the south and increasing northwards to the Victorian border.



There are also 7-8 growers in the Adelaide Hills producing lemons.

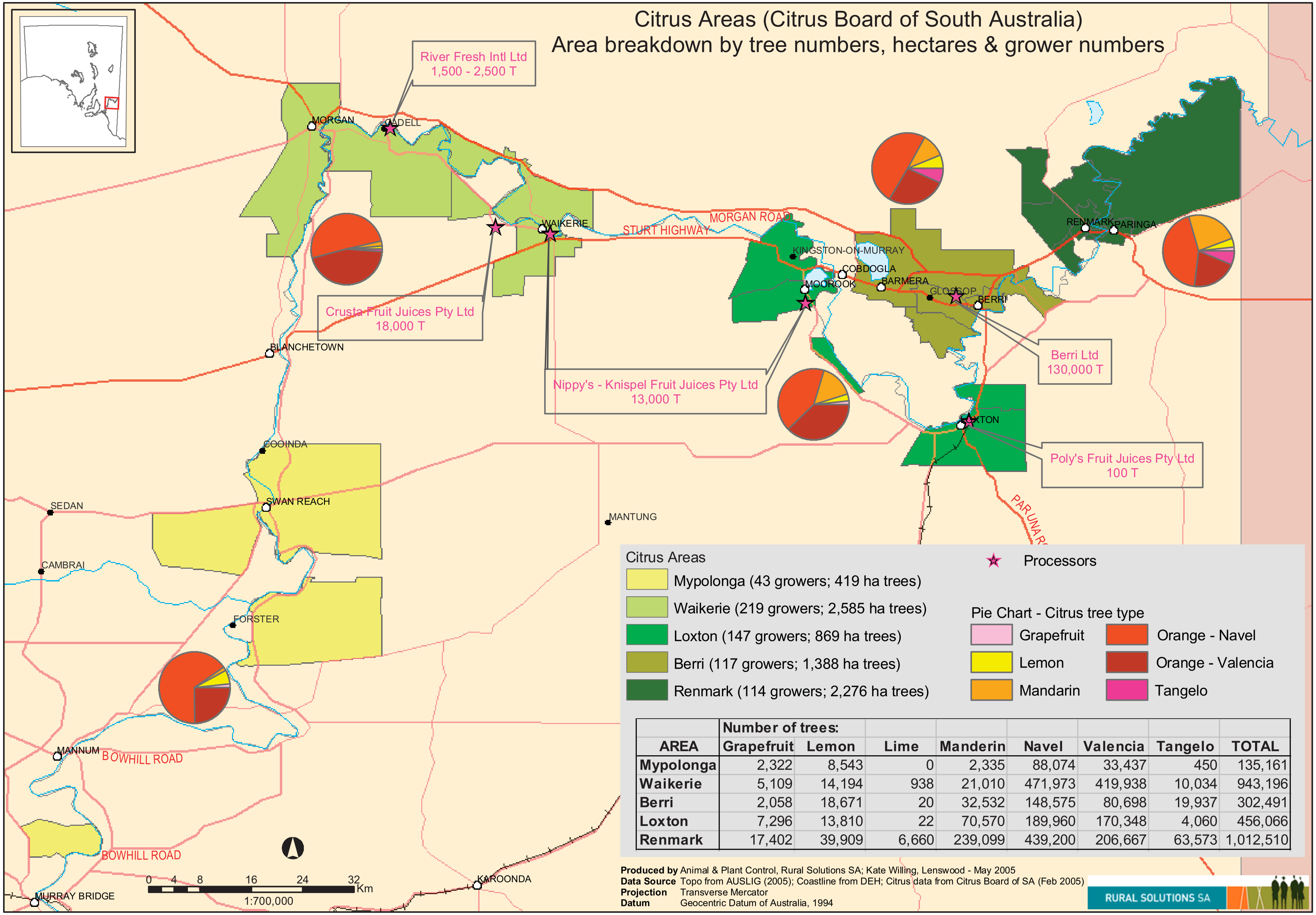




Important

The maps on the following page provide a pictorial overview of the main citrus growing areas of South Australia.

RURAL SOLUTIONS SA



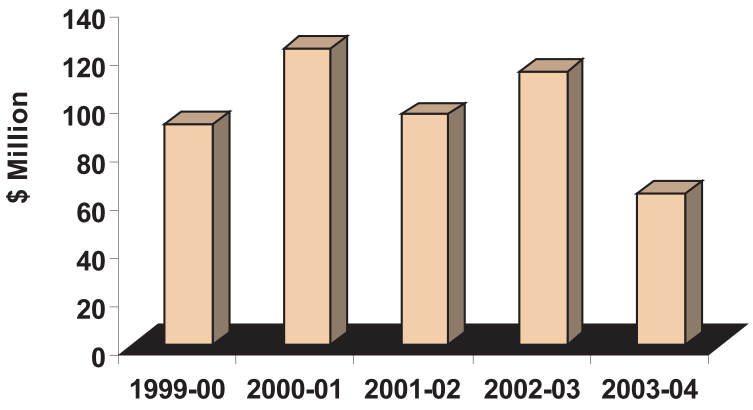
	Number of trees:							
AREA	Grapefruit	Lemon	Lime	Manderin	Navel	Valencia	Tangelo	TOTAL
Mypolonga	2,322	8,543	0	2,335	88,074	33,437	450	135,161
Waikerie	5,109	14,194	938	21,010	471,973	419,938	10,034	943,196
Berri	2,058	18,671	20	32,532	148,575	80,698	19,937	302,491
Loxton	7,296	13,810	22	70,570	189,960	170,348	4,060	456,066
Renmark	17,402	39,909	6,660	239,099	439,200	206,667	63,573	1,012,510

SA Citrus Production

The graph below indicates a decline in total value of South Australia's citrus production in the five seasons 1999-2000 to 2003-2004. Over the last couple of years 2003-2005 the decline has been due to a very small crop, among other things according to the Citrus Board of South Australia.

The PIRSA Scorecard team has made predictions regarding South Australia's citrus production into 2012/13, taking into account the number of non-bearing trees and proposed increased plantings of 500 ha by Timbercorp. The prediction is that in a good production year there could be 320,000 tonnes of citrus produced if the season is at its best or 170,000 tonnes if it is at its worst.

South Australian Citrus Production Value, 1999-00 to 2003-04

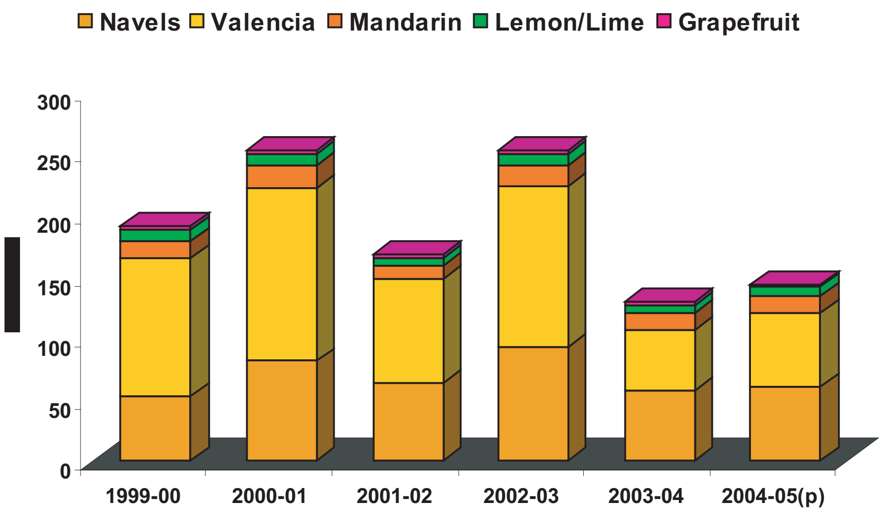


Source: PIRSA Scorecard

However, according to the PIRSA Economists, if plantings of navels continue at the same rate as in recent years (approx 450,000 trees per year) and if removal of Valencias slow down (it reached a peak of 660,000 trees removed in 2003-04), then total production may exceed 500,000 tonnes.

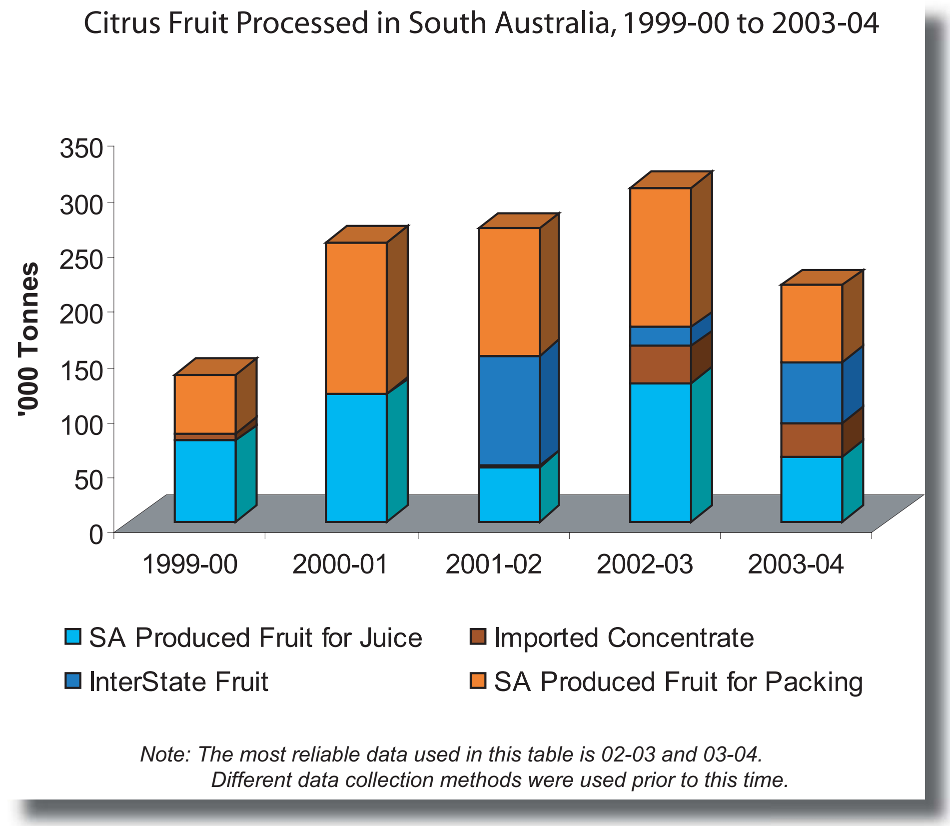
The figure overleaf also shows a significant decline in Valencia fruit production. Competition from low-priced juice imports has significantly lowered the returns from Valencia oranges grown primarily for processing. Conversely, the successful development of export markets for fresh navel oranges, including the U.S. market, has favoured production of this variety.

South Australian Production Totals by Variety, 1999-00 to 2004-05

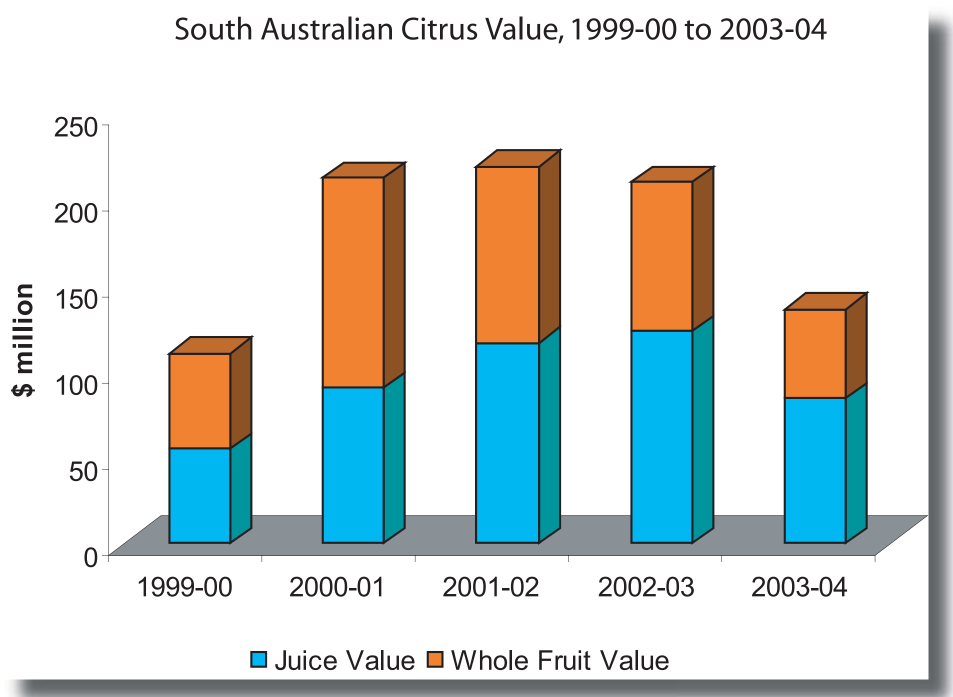


Source: Australian Citrus Growers

The data below shows citrus processing in South Australia: the breakdown between local citrus produced as eating fruit (fruit for packing) and juice and the product brought into SA and processed here, whether from interstate or overseas.

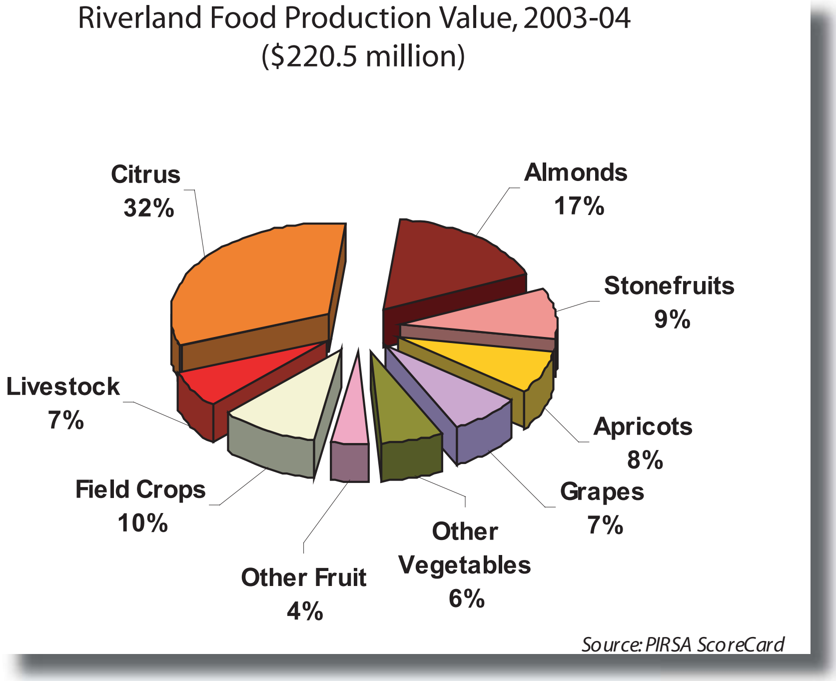


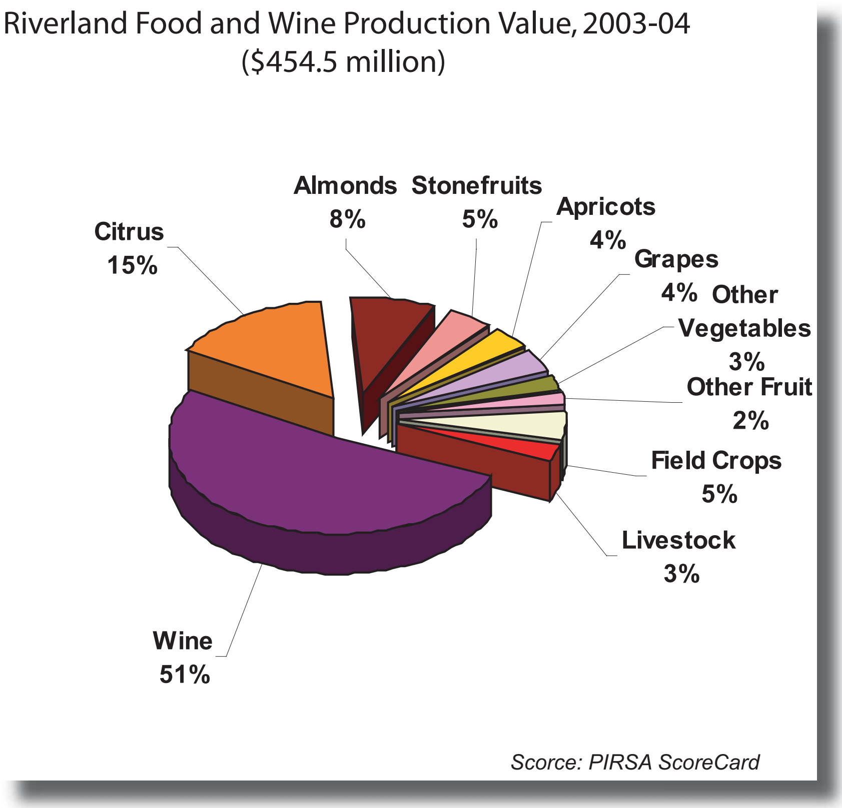
This graph shows the difference in value between juice and whole fruit, over time. Relative value of juicing fruit has been increasing, it shows the importance of the processing industry to underpin utilisation of fruit produced.



SA Citrus Regions

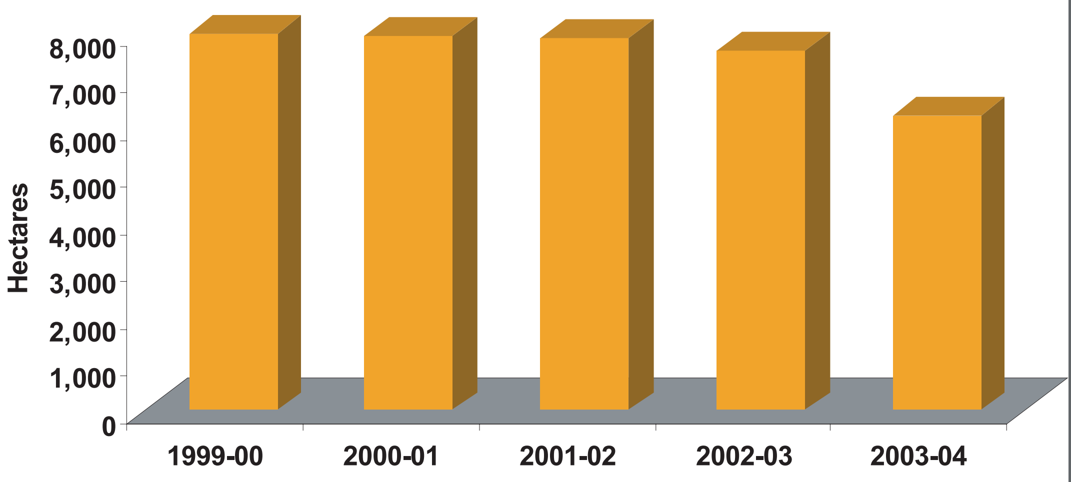
The Riverland region has been depicted here, in particular, as the major citrus region in South Australia. The Citrus Industry's value relative to other food industries can be seen. The first pie chart does not include wine, the second does.





Tree Numbers

South Australia Hectares Planted, 1999-00 to 2003-04

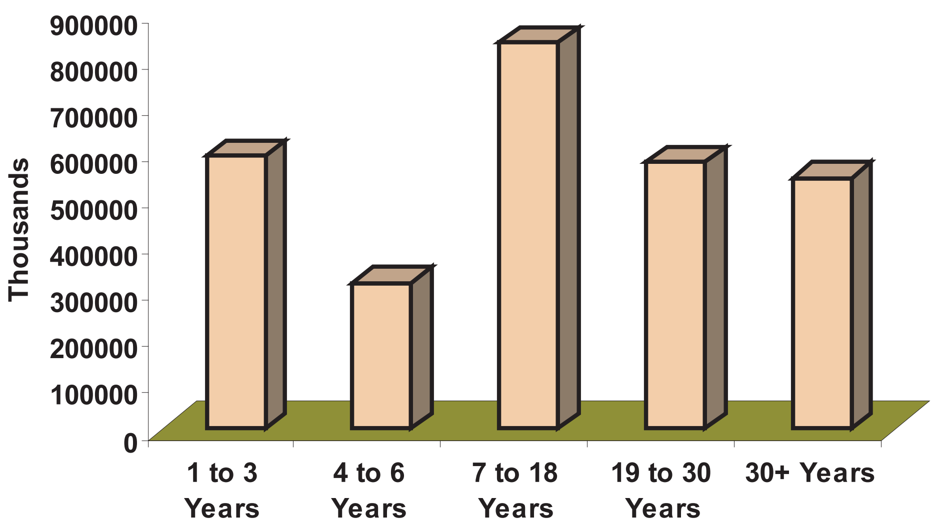


Source: SA Citrus Board

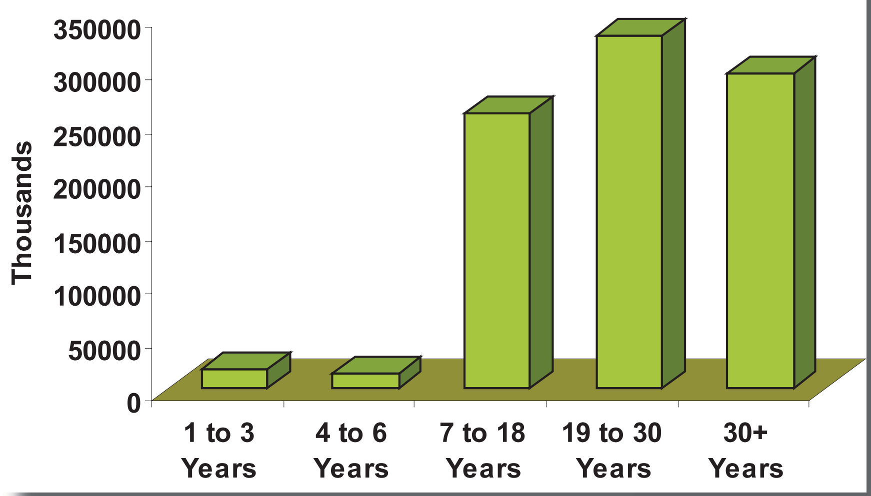
According to the Citrus Board of South Australia, while hectares planted have fallen, tree numbers have slightly increased overall due to high-density plantings.

Below and over the page are charts illustrating the South Australian tree numbers covering the citrus producing regions of Mypolonga, Waikerie, Berri, Loxton and Renmark. The figures show there are around 2.85 million trees across 7,500 hectares in South Australian. The current variety mix is about 42% navels, 39% Valencia and 11% mandarins. According to the Citrus Board of South Australia, between 1998 and 2004, approximately 331,000 Valencia trees have been removed and in the same period, 304,000 navel trees have been planted to cater to the fresh fruit market.

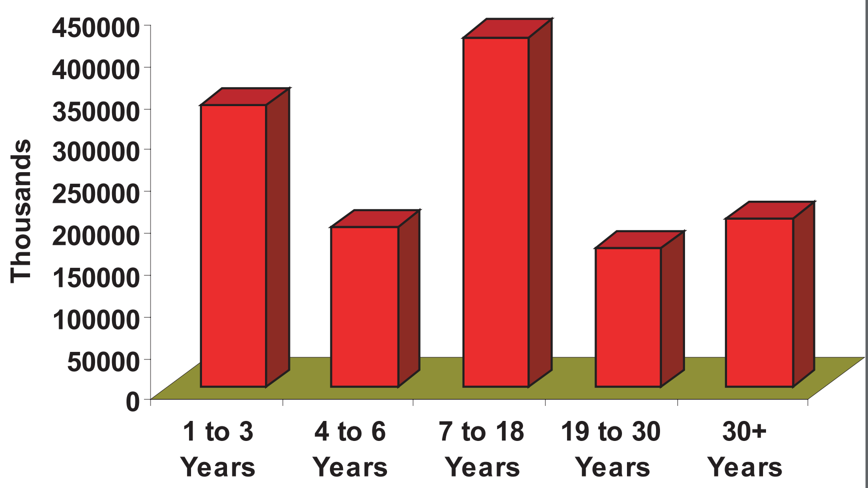
Number of Citrus Trees by Age, 2003-04



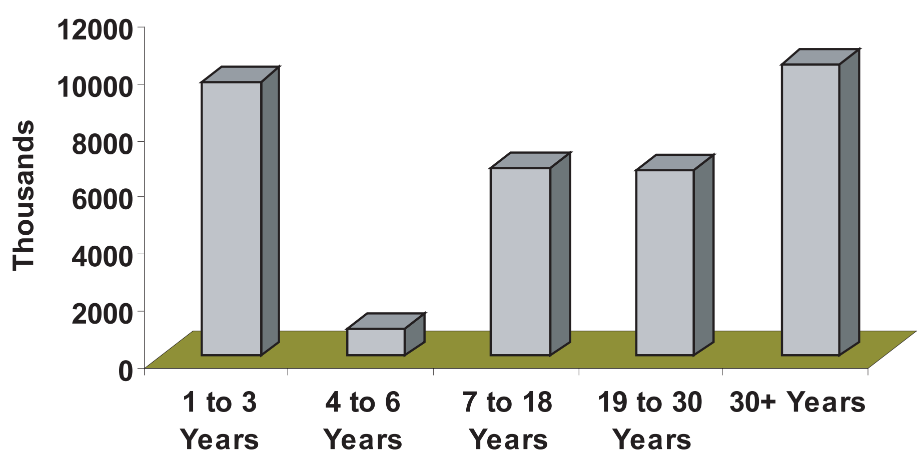
Number of Valencia Trees by Age, 2003-04



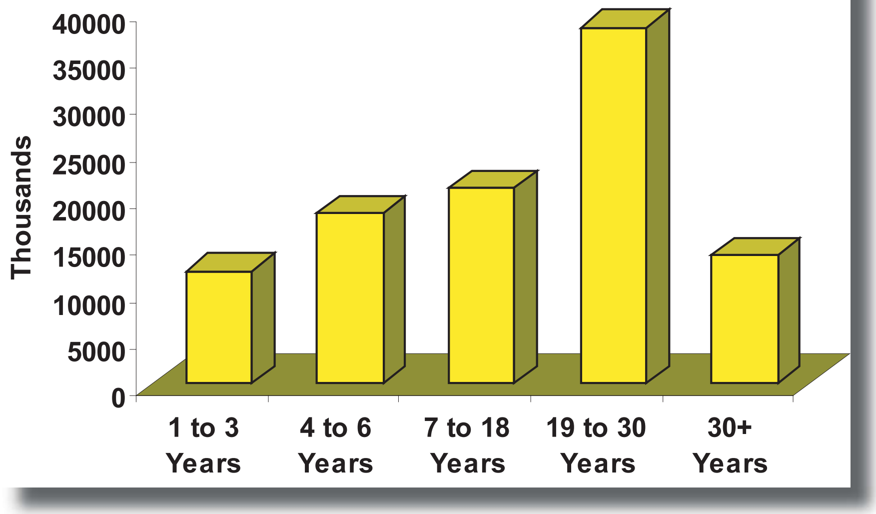
Number of Navel Trees by Age, 2003-04



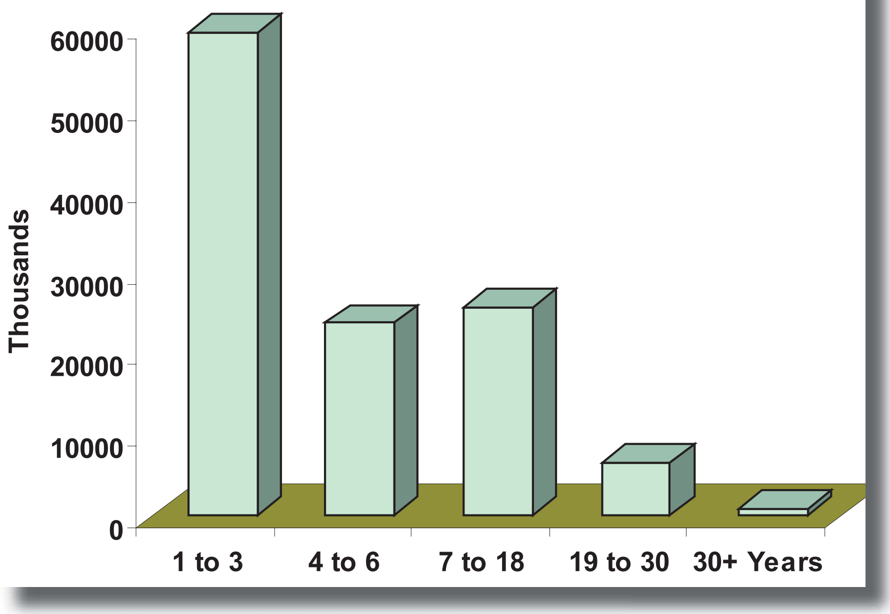
Number of Grapefruit Trees by Age, 2003-04



Number of Lemon/Lime Trees by Age, 2003-04

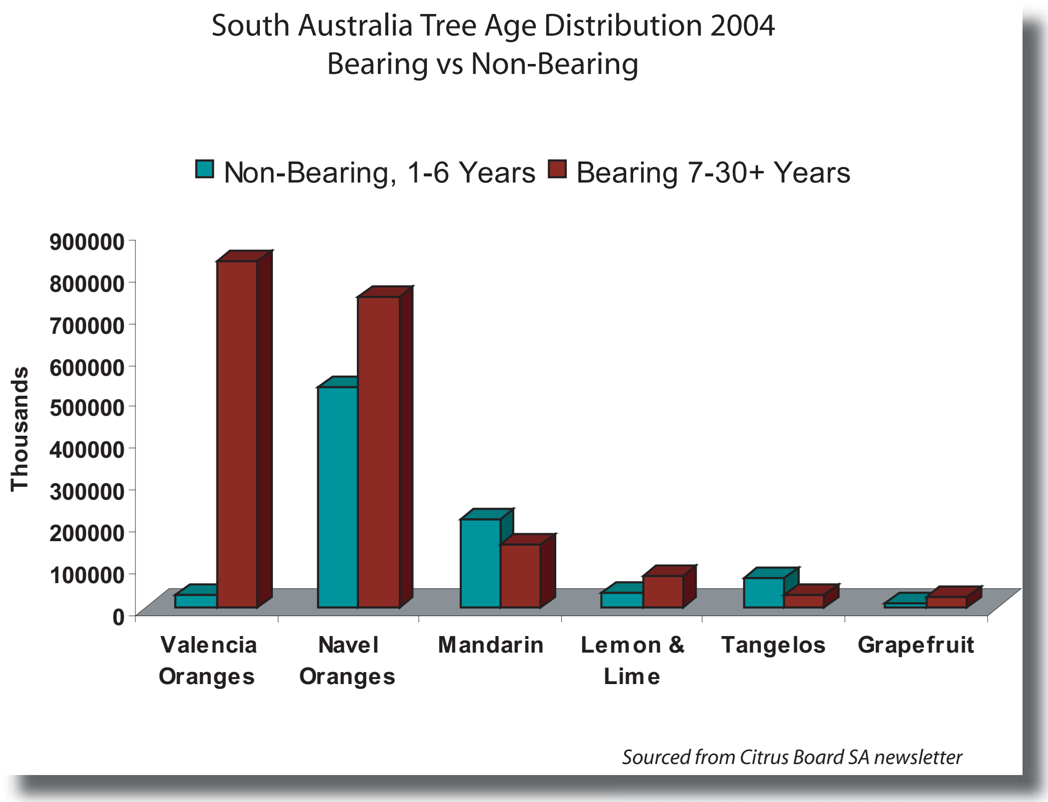


Number of Other Citrus Trees by Age, 2003-04



Tree Age

Charting the tree age distribution in SA shows which varieties will be increasing or decreasing in production in coming years. South Australia's figures mirror Australia's as a whole in that they show a relatively small amount of Valencias are being planted, with very few non-bearing, or young trees in the ground. Mandarins have more non-bearing trees than mature, so can expect an increase in production, while just under three quarters of the number the existing mature navels is represented as non-bearing trees.



New Citrus Legislation for South Australia

Following public consultation in February 2005, a new Citrus Bill has been drafted and has commenced its journey through Parliament. Delays in Parliament have meant that the goal of having the new Citrus Act in place for 1 July 2005 has not be met. Until the Act is ratified, arrangements are being made for the Citrus Board to continue its duties to growers.

The new Citrus Act repeals the current Citrus Industry Act 1991and will deliver some significant changes to industry. The most dramatic of these are with the elimination of particular elements of the Citrus Act of 1991, namely:

1. Removal of the compulsory control of citrus production in SA through each step of the value chain, from grower to retailer.
2. Removal of the grade standards and links to the Export Control Order to allow market forces to determine quality, size and other product specifications.
3. Removal of the registration and licensing conditions for packers and wholesalers that constrain access to industry.
4. Removal of the collection services where payment for citrus sold by wholesalers is collected by the Citrus Board of SA and forwarded to packers.

The content of the new Bill allows for the following:

1. Establishing the South Australian Citrus Industry Development Board to deliver the following function:

    - Administration of the Citrus Industry Fund
    - Promotion of the citrus industry and its products
    - Planning, funding and facilitating research
    - Collecting and analysing citrus industry data
    - Collecting, analysing and disseminating technical, scientific, economic and market information
    - Collecting voluntary contributions on behalf of the citrus industry
    - Providing advice and services to the citrus industry
    - Providing advice to the Minister relating to citrus food safety, plant health and other matters.

2. Establishment of the Citrus Industry Fund to manage funds collected under the Bill and how they can be used for industry development.

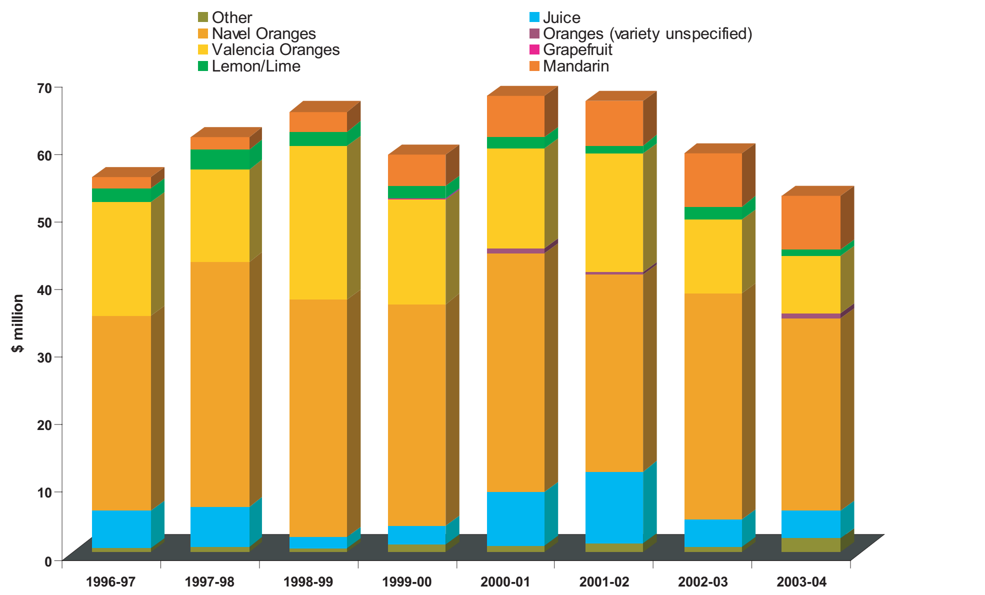
3. Requires growers, packers, processors and wholesalers to notify the Board that they are participating in the industry to enable a register of participants to be maintained for information distribution and product traceability purposes.

4. Provides the Board with the power to gather information associated with citrus plantings. Volumes of trade, food safety, pest and disease issues and to use the information for strategic planning.

5. Requires a major review of the Act, with a report to Parliament, within 3 years.

b) SA Exports and Imports data

South Australian Citrus Exports for Whole Fruit (by Variety) and Juice, 1996-97 to 2003-04



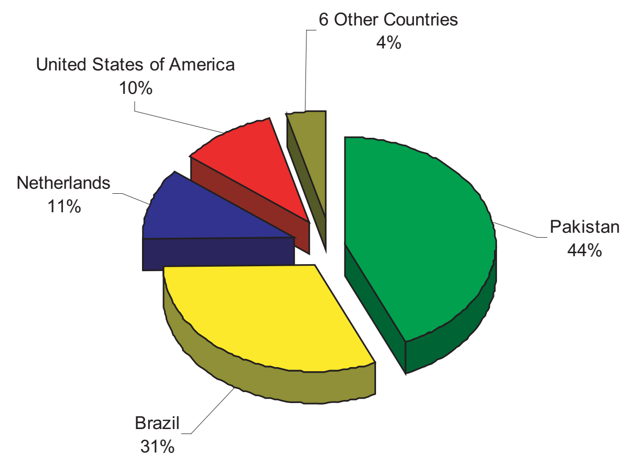
Source: ABS Trade Data, analysed by PIRSA ScoreCard

The above chart shows the value of South Australian citrus exports has ranged between $50 million and $70 million dollars since 1996-97, with a decline over the last couple of seasons due to two very small crops. It also shows that navel oranges have been the major contributor to citrus exports. Other varieties and orange juice only contribute in a minor way.

Imports

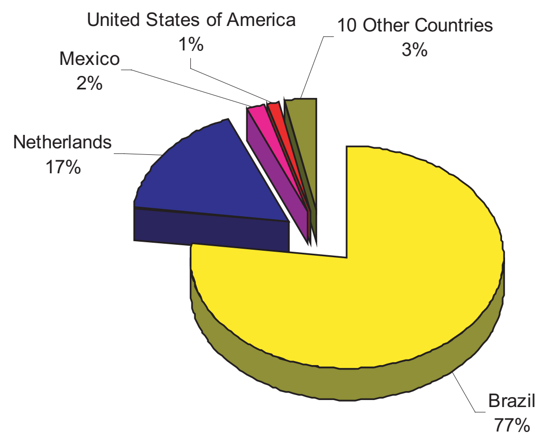
The pie charts below show a significant increase in imported citrus product from Brazil between 1996/1997 and 2003/04, at the expense of Pakistan and other countries. Brazil is, by far, the largest citrus producing country in South America. Brazil dominates world trade in frozen orange juice concentrate and it is this product that is being increasingly imported into Australia by processors looking to shore-up supply and secure low priced product.

South Australian Citrus Juice Imports by Country of Origin, 1996-97 ($2.2 million)



Source: ABS Trade Data, analysed by PIRSA ScoreCard

South Australian Citrus Juice Imports by Country of Origin, 2003-2004
($6.7 million)

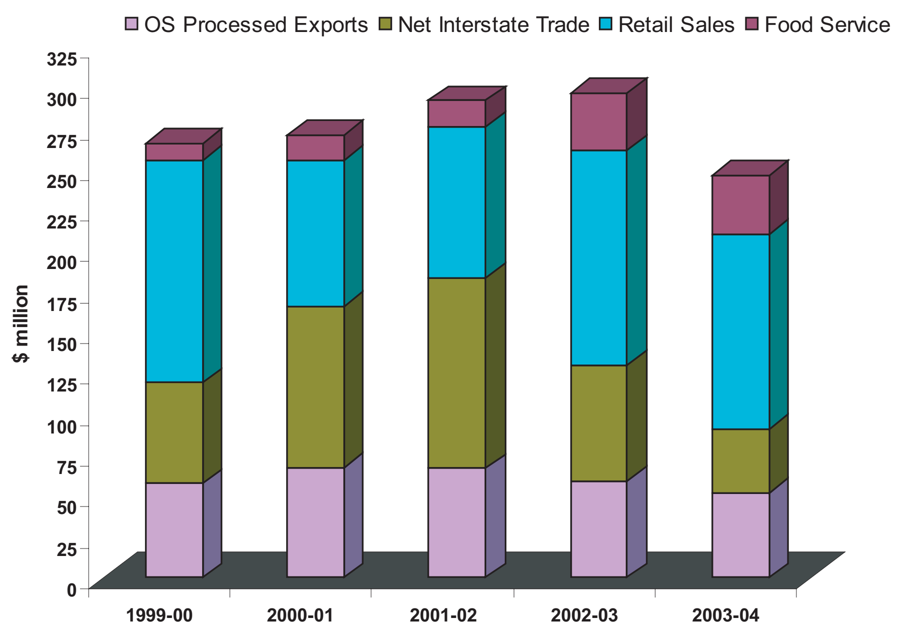


Source: ABS Trade Data, analysed by PIRSA ScoreCard

c) The South Australian Citrus Value Chain

The graph below is transaction based and indicates the level of trade in South Australia in each citrus market. Being transaction based, this does not account for any 'dumped' fruit on farm or elsewhere in the supply chain.

South Australian Citrus Value Chain, 1999-00 to 2003-04



Source: PIRSA ScoreCard

Note: Net Interstate Trade (dark green) is the balance between production and final consumption of fruit and processed product, taking exports into account

d) The average size of a South Australian citrus producer

The Productivity Commission's Citrus Industry Enquiry published a table that gave an illustration of the average size of citrus producers across the Riverland, the Murray Valley and Riverina in 2001.

	Riverland		**Murray Valley**		**Riverina**	
	Orchard Number	Proportion of orchards	Orchard Number	Proportion of orchards	Orchard Number	Proportion of orchards
Hectares						
Under 10	654	76%	371	65%	240	46%
10 to 20	129	15%	104	18%	167	32%
Over 20	76	9%	92	16%	114	22%
Total	859	100%	567	100%	521	100%

Source: Citrus growers of South Australia, Murray Valley Citrus Marketing Board, Riverina Citrus. As used in Citrus Growing and Processing, Productivity Commission Enquiry Report, p.41

The Productivity Commission report cited 1997 ABS agricultural census data that indicated 30% of growers accounted for almost 90% of citrus production, while 50% of growers accounted for 2 % of the industry's production.[55] The next ABS Agricultural census will be conducted across the 2005/2006 financial year, so instead we rely on the Citrus Board of Australia's data to provide us with a picture of the concentration of production.

According to the South Australian government's submission to the Productivity Commission, *"In South Australia, for example, 53 per cent of citrus orchards are less than 5 hectares in area and another 23 per cent are less than 10 hectares. While larger firms are investing heavily and appear to be thriving, the smaller ones are struggling to make adequate returns."*[56]

The average citrus grower size in South Australia, based on figures provided by the Citrus Board of South Australia, is just under 12 hectares. We do know that there are large businesses with extensive holdings and also a large number of citrus producers who have diversified into other horticultural products or depend on off-farm income. A median figure might paint a more accurate picture of the typical South Australian citrus producer, but that data was unavailable at the time this report was produced. The average grower size is illustrated below, by region.

Region	**Number of Growers**	**Hectares of Citrus**	**Average Citrus Black Size in Hectares**
Mypolonga	43	418.65	9.7
Waikerie	219	2584.76	11.8
Berri	117	868.82	7.5
Loxton	147	1388.45	9.4
Renmark	114	2276.26	19.9
Total South Australia	640	7536.54	11.7

The Citrus Board of South Australia estimates that the median age of citrus growers in South Australia is 55 years. There is considerable concern about the need for succession planning. Strategies also need to be developed for individuals leaving the industry, that can lead to consolidation of production units to create greater economies of scale.

References

[55] Citrus growers of South Australia, Murray Valley Citrus Marketing Board, Riverina Citrus. As used in *Citrus growing and Processing, Productivity Commission Enquiry Report*, p.41

[56] South Australian Government Submission, Productivity Commission into Citrus Productivity, December 2001.

Appendix A

Global Production

Brazil

Brazil is, by far, the largest citrus producing country in South America and is number one in the world for oranges.

According to a report prepared by the United Stated Department Agriculture (USDA) in April 2005,[57] Brazil's production of orange juice during 2004/05 (July 2005-July 2006) is estimated at 1.14 million tonnes (65 degrees brix), down about 15 percent from the 2003/04 level, mainly the result of a reduced orange crop.

Argentina

Argentina represents 30% of lemon world production and is leading lemon production worldwide, although the lemon industry is going through a crisis due to low prices in the processing sector.[58]

Argentina's total citrus crop is expected to reach 2.67 million metric tonnes (MT) in 2005.[59] The country contributes only 3% to the world production of citrus but its share for the international commerce of fresh citrus is 15%.[60] This occurs because the main citrus producing countries, like China and the USA, need to satisfy their own domestic markets, while Brazil processes most of its orange production.

Argentina plays an important role as a fresh fruit provider to the European Union (EU) sending 66% of the total of fresh citrus exported to this market. East European countries and Russia take 21% of the total of citrus exported by Argentina. In the North American market, USA does not allow imports of Argentine citrus, but Canada receives 5% of the total of Argentine's citrus exports.[61]

Chile

During the last 5 years of the 90's Japan and the USA bought 80% of the Chilean fresh lemons exports. Chile substitutes the USA from July to September as the main provider of fresh lemons and also the Japanese market reaching 17% of their total imports.[62]

Chile exports 78% of its fresh oranges to Japan, growing rapidly from 4,000 boxes in the mid 90's up to 314,000 in 2002.

Threats to South American Citrus

Important diseases and pests are present in South America. Citrus canker is endemic in several countries where ecological conditions are conducive for its occurrence. This is a quarantine disease that limits exports to citrus producing countries. Citrus variegated chlorosis (CV) and Sudden Death are also serious threats in Brazil, killing a large number of trees every year. Fruit flies are the cause of significant losses that not only limits citrus production but also interferes with the international commerce.

South Africa

South Africa's calendar year 2005 citrus production is expected to reach 1.78 million MT, a slight increase from 1.77 million MT last year because of enough rain and normal temperatures in the citrus fruit growing areas.[63] Total exports of oranges from January to July 2004 reached about 288,458 MT, a slight decrease from the same period the previous year.

In 2004, South Africa's citrus industry's challenges were to continue to gain consumer confidence both locally and internationally, to adhere to and improve food safety measures, traceability and good agricultural practices. On trade, the industry plans to increase trade to Russia, and to penetrate the Indian market. In June 29, 2004, the Citrus Growers Association (CGA) signed a protocol governing export of fresh citrus to China.[64]

USA

Florida specialises in the production of oranges processed into orange juice and grapefruit, which is utilized for fresh and processed markets. Florida also produces a large quantity of tangerines, tangelos, and other varieties intended for the fresh market. These markets, however, tend to be dominated by California and are subject to, at the present time, little competition from foreign suppliers.

The USA consumes most of its own citrus production and imports citrus juice from Brazil and Mexico. U.S. production of orange juice during 2004/05 is estimated at approximately 711,000 tons, down substantially—32 percent—from the previous year. [65] This directly corresponds to the drop in Florida's orange crop. In a normal year, more than 95 percent of the orange crop in Florida is processed for orange juice.

With the reduction in the orange crop in Florida due to the devastation of the hurricanes, orange juice production will decline as well.

Florida

Today, there are more than 12,000 Florida citrus growers cultivating approximately 100 million citrus trees on more than 748,000 acres of land. More than 90,000 other people also work in the citrus industry or in related businesses. Today Florida citrus is a $9 billion industry producing more oranges than any other region in the world, except Brazil, and leading the world in grapefruit production.[66]

Florida orange production represents about 80% of U.S. orange production. About 95% of Florida's crop is made into orange juice. While Florida's frozen orange juice concentrate (FCOJ) accounts for 50% to 60% of processing capacity, retail sales of FCOJ continue to decline.[67]

California

The largest supplier to the US domestic market is California.

The amount of California fresh orange shipments to the domestic market is a major factor determining the price for Florida fresh oranges; increased California orange shipments tend to result in lower Florida fresh orange FOB and grower prices.

Spain

Spain accounts for over 50% of the world's exports of fresh tangerines and is expected to continue its role as the dominant exporter.[68]

The EU's reform of cotton subsidies, which decouples 65 percent of the direct payments received by cotton farmers, will likely result in Spanish farmers choosing to plant crops well suited to the hot and dry climate. One of those benefactors will likely be sweet oranges. Most of the cotton area, some 92,000 hectares, is irrigated and highly suitable for citrus production. In anticipation, it appears, Spanish operators have recently built up an additional 500,000-ton-fruit-processing capacity. The increased juicing capacity is for 11-brix juice, which is popular domestically and throughout the European Communities.

FAS/Madrid forecasts a drop in juice production in MY 2004/05, because of a reduced sweet orange crop. As a result, some of the juice processing capacity, including some of the newly expanded capacity, will not likely be used in MY 2004/05. Spain's orange and clementine producers will likely have a smaller exportable surplus this year, because of record-setting cold temperatures that have damaged this year's mid-to-late season harvest. A higher percentage of the orange crop will likely be sent to processing, as producers attempt to minimize the losses from weather-related damage.[69]

China

China's production has increased significantly resulting in China becoming the third largest citrus producer in the world. China has gone from less than 2% of world production to around 12% (production is focused on domestic fresh with limited processing and exports).[70] Unlike the rest of the world, mandarin types dominate China's production; oranges make up only around 30% of China's total production.[71]

At present, annual processing accounts for only 5% of total citrus production in China. The main finished products include 250,000 tonne of canned mandarin segments, 10,000 tonne of citrus juice (based on single strength juice), 3,000 tonne of gel and jam, 1,000 tonne of wine and 800 tonne of fruit candy.[72]

Domestic production of both natural citrus single strength juice and concentrate lags far behind the domestic market demands that have had to rely upon imports. The import of citrus juice has exceeded by a factor of 10 the domestic output. This situation has attracted the attention of domestic and foreign investors, who have started to build a large-scale production base of citrus juice in Chongqing and Sichuan.

Production of citrus juice and canned mandarin segments will reach more than 100,000 tonne and 300,000 tonne respectively in 2005 and 500,000 tonne and 400,000 tonne in 2010 respectively. China's orange juice production and market is set to boom.[73]

Government and industry infrastructure, construction and competitive prices boosted China's citrus exports, which also benefited from lower duties from trade pacts with ASEAN countries. Fresh tangerines have been the main export, mostly to neighbouring countries, while canned citrus, being the largest processed citrus, has found stable buyers in developed markets in North America, the EU, and Japan.[74]

Food and Agriculture Organisation of the United Nations data.

Oranges Production (Mt)	Year		
	2002	2003	2004
Albania	2,500	2,500	2,200
Algeria	362,490	360,000	360,000
Argentina	766,854	687,346	730,000
Australia	450,559	599,484	490,000
Azerbaijan, Republic of	40,000	45,000	45,000
Bangladesh	10,000	11,000	12,000
Belize	168,652	165,530	168,000
Benin	12,000	12,000	12,000
Bhutan	37,300	36,300	36,000
Bolivia	104,591	104,385	104,385
Bosnia and Herzegovina	120	120	120
Botswana	600	600	600
Brazil	18,530,624	16,902,600	18,262,632
Brunei Darussalam	300	320	320
Burkina Faso	500	500	500
Cambodia	63,000	63,000	63,000
Central African Republic	22,000	20,000	20,000
Chile	114,000	118,000	118,000
China	1,643,469	1,831,681	1,892,681
Colombia	297,962	300,000	305,000
Congo, Dem Republic of	179,600	180,000	180,000
Congo, Republic of	1,981	2,000	2,000
Cook Islands	130	85	75
Costa Rica	367,000	367,000	367,000
Croatia	534	491	500
Cuba	296,612	492,200	500,000
Cyprus	35,000	35,000	35,000
Côte d'Ivoire	30,000	30,000	30,000
Djibouti	3	3	3
Dominica	7,200	7,200	7,200
Dominican Republic	86,082	88,000	80,000
Ecuador	178,287	212,620	190,000
Egypt	1,725,000	1,740,000	1,750,000
El Salvador	37,258	37,258	37,258
Ethiopia	15,000	15,000	15,000
Fiji Islands	700	700	700
France	693	611	600
French Guiana	600	600	600
French Polynesia	180	180	180
Gaza Strip (Palestine)	0	0	0
Georgia	33,130	55,000	50,000
Ghana	300,000	300,000	300,000
Greece	1,164,508	967,681	1,000,000
Grenada	900	900	900
Guadeloupe	660	660	660
Guam	70	70	80
Guatemala	106,000	106,000	106,000
Guinea-Bissau	5,000	5,000	5,000
Guyana	5,000	5,000	5,000

Haiti	24,000	26,000	26,000
Honduras	167,226	167,226	167,226
India	3,120,000	3,070,000	3,070,000
Indonesia	968,132	1,441,680	1,600,000
Iran, Islamic Rep of	1,880,000	1,850,000	1,850,000
Israel	165,500	145,600	145,000
Italy	1,723,630	1,962,000	1,800,000
Jamaica	140,000	140,000	140,000
Japan	97,800	92,000	90,000
Jordan	34,184	42,815	43,000
Kenya	26,000	26,000	26,000
Kuwait	21	20	20
Laos	29,000	28,000	28,000
Lebanon	155,400	155,000	155,000
Liberia	7,000	7,000	7,000
Libyan Arab Jamahiriya	43,000	42,500	42,500
Madagascar	83,000	83,000	83,000
Malaysia	12,000	12,000	12,000
Martinique	690	690	690
Mexico	3,843,960	3,969,810	3,969,810
Montserrat	5	5	5
Morocco	723,100	821,600	705,000
Mozambique	14,000	14,000	14,000
Nepal	80,644	82,000	82,000
New Zealand	7,500	6,000	6,000
Nicaragua	66,000	70,000	75,000
Pakistan	1,190,000	1,128,000	1,120,000
Palestine, Occupied Tr.	49,692	50,000	55,000
Panama	46,563	47,000	47,000
Paraguay	207,155	210,000	210,000
Peru	292,441	305,773	308,000
Philippines	30,000	30,000	30,000
Portugal	277,295	279,547	280,000
Puerto Rico	25,500	25,500	25,500
Réunion	750	750	750
Saint Lucia	602	600	600
Saint Vincent/Grenadines	1,400	1,523	1,600
Senegal	31,000	35,000	35,000
Serbia and Montenegro	4,768	3,521	3,521
Seychelles	30	30	30
South Africa	1,082,330	1,165,000	1,160,000
Spain	2,867,100	3,112,900	2,900,000
Sri Lanka	5,620	5,390	5,390
Sudan	17,700	17,800	17,800
Suriname	11,330	10,300	10,300
Swaziland	36,000	36,000	36,000
Syrian Arab Republic	427,148	427,150	427,000
Tajikistan	600	600	500
Thailand	340,000	340,000	340,000
Timor-Leste	600	600	600
Togo	12,100	12,100	12,100
Tonga	1,000	1,000	1,000
Trinidad and Tobago	4,987	5,000	5,100

Tunisia	106,000	106,000	106,000
Turkey	1,250,000	1,215,000	1,215,000
United States of America	11,225,500	10,473,450	11,729,900
Uruguay	115,769	122,000	122,000
Venezuela,Bolivar Rep of	341,645	315,849	316,000
Viet Nam	435,300	500,400	502,000
West Bank	0	0	0
Yemen	163,149	166,000	166,000
Zambia	3,500	3,500	3,500
Zimbabwe	93,000	93,000	93,000

Tang.Mand.Clement.Satsma Production (Mt)	**Year**		
	2002	**2003**	**2004**
Algeria	116,649	115,000	115,000
Argentina	463,936	380,543	400,000
Australia	78,079	98,343	85,000
Azerbaijan, Republic of	5,000	5,300	5,000
Bangladesh	1,000	1,000	1,000
Bolivia	57,574	57,641	57,641
Brazil	1,262,740	1,263,000	1,263,000
Burkina Faso	250	250	250
China	8,983,594	10,060,368	10,361,000
Congo, Republic of	1,981	1,981	1,981
Cook Islands	0	0	0
Croatia	16,057	11,102	13,500
Cuba	27,715	46,000	48,000
Cyprus	35,500	36,000	36,000
Djibouti	2	2	2
Ecuador	23,434	35,070	35,000
Egypt	500,000	505,000	506,000
El Salvador	3,000	3,000	3,000
Ethiopia	8,300	8,300	8,300
France	25,562	20,961	20,000
French Guiana	150	150	150
French Polynesia	20	20	20
Gaza Strip (Palestine)	0	0	0
Greece	119,335	103,600	105,000
Guadeloupe	35	35	35
Guinea-Bissau	0	0	0
Haiti	8,000	8,800	8,800
Iran, Islamic Rep of	710,000	710,000	720,000
Israel	58,300	78,000	75,000
Italy	548,350	562,368	570,000
Jamaica	15,000	15,000	15,000
Japan	1,131,000	1,147,000	1,200,000
Jordan	50,851	72,136	70,000
Kenya	130	130	130
Korea, Republic of	642,525	631,929	620,000
Kuwait	0	0	0
Laos	23,500	23,000	23,000
Lebanon	42,500	42,000	42,000
Libyan Arab Jamahiriya	10,000	10,000	10,000
Mexico	360,000	360,000	360,000
Morocco	405,700	478,500	410,000
Mozambique	300	300	300
New Zealand	9,880	9,950	9,950
Pakistan	443,000	419,000	400,000
Palestine, Occupied Tr.	8,300	8,400	8,700
Paraguay	23,029	24,500	24,500
Peru	133,204	161,205	162,000
Philippines	53,000	54,000	54,000
Portugal	55,866	60,600	61,000
Réunion	4,480	3,600	3,600
South Africa	100,172	100,172	100,172

Spain	1,952,100	2,081,600	2,100,000
Sudan	1,260	1,260	1,260
Syrian Arab Republic	24,400	24,400	24,400
Thailand	668,000	668,000	668,000
Tunisia	41,600	42,000	42,000
Turkey	590,000	525,000	525,000
United States of America	532,520	495,310	492,600
Uruguay	74,503	75,000	75,000
Uzbekistan	500	500	500
Venezuela,Bolivar Rep of	194,986	187,529	185,000
West Bank	0	0	0
Yemen	24,851	25,400	25,500
Zimbabwe	9,500	9,500	9,500

Lemons and Limes Production (Mt)	Year		
	2002	2003	2004
Algeria	38,966	38,000	38,000
Antigua and Barbuda	250	265	285
Argentina	1,313,266	1,236,278	950,000
Australia	40,116	34,472	34,472
Bahamas	8,000	8,500	8,700
Bahrain	950	950	950
Bangladesh	15,000	17,000	17,000
Bolivia	63,830	63,800	63,800
Brazil	984,551	950,000	950,000
Brunei Darussalam	60	70	75
Burkina Faso	210	210	210
Cambodia	2,300	2,300	2,300
Central African Republic	1,900	1,800	1,800
Chile	140,000	150,000	150,000
China	520,568	583,161	618,300
Congo, Dem Republic of	6,986	7,000	7,000
Congo, Republic of	2,963	3,000	3,000
Cook Islands	6	6	6
Costa Rica	10,000	16,000	16,000
Croatia	484	449	400
Cuba	16,062	26,700	27,000
Cyprus	22,000	25,000	25,000
Djibouti	1,800	1,800	1,800
Dominica	1,000	1,020	1,020
Dominican Republic	3,134	2,500	3,000
Ecuador	13,657	15,536	16,000
Egypt	296,776	300,000	300,000
El Salvador	25,000	25,000	25,000
Ethiopia	6,500	6,500	6,500
France	600	600	600
French Guiana	1,330	1,330	1,330
Gaza Strip (Palestine)	0	0	0
Ghana	30,000	30,000	30,000
Greece	151,452	110,633	110,000
Grenada	470	470	470
Guadeloupe	1,600	1,600	1,600
Guatemala	142,877	142,877	142,877
Guinea-Bissau	3,200	3,200	3,200
Guyana	2,700	2,700	2,700
Haiti	22,000	22,100	22,100
Honduras	4,700	4,700	4,700
India	1,440,000	1,420,000	1,420,000
Iran, Islamic Rep of	1,040,000	1,040,000	1,100,000
Israel	20,000	20,500	20,000
Italy	486,410	548,808	550,000
Jamaica	24,000	24,000	24,000
Jordan	31,978	44,527	45,000
Kenya	260	260	260
Kuwait	10	10	10
Laos	10,000	10,000	10,500
Lebanon	81,200	82,000	82,000

Libyan Arab Jamahiriya	14,500	14,500	14,500
Madagascar	5,700	5,700	5,700
Malaysia	4,000	4,000	4,000
Mali	0	0	0
Martinique	270	270	270
Mexico	1,725,090	1,824,890	1,824,890
Montserrat	75	75	75
Morocco	11,400	12,300	12,300
Mozambique	3,200	3,200	3,200
New Zealand	3,731	3,700	3,700
Niue	110	110	110
Oman	8,385	8,385	8,385
Pakistan	69,000	65,000	65,000
Palestine, Occupied Tr.	14,340	14,500	14,700
Paraguay	14,460	15,000	15,000
Peru	254,343	250,000	255,000
Philippines	52,000	52,000	52,000
Portugal	11,182	13,465	13,500
Puerto Rico	1,800	1,800	1,800
Réunion	1,000	1,000	1,000
Saint Lucia	300	300	300
Saint Vincent/Grenadines	1,000	1,167	1,170
Seychelles	30	30	30
South Africa	149,647	211,000	210,000
Spain	919,700	1,070,600	1,050,000
Sri Lanka	21,300	24,000	24,000
Sudan	62,000	63,000	63,000
Suriname	49	49	49
Swaziland	500	500	500
Syrian Arab Republic	84,889	84,889	84,889
Tajikistan	2,000	1,800	1,500
Thailand	80,000	80,000	80,000
Tonga	2,500	2,500	2,500
Trinidad and Tobago	1,400	1,450	1,500
Tunisia	24,500	25,000	25,000
Turkey	525,000	500,000	535,000
United Arab Emirates	15,321	16,000	16,000
United States of America	733,001	939,000	732,000
Uruguay	38,519	40,000	40,000
Uzbekistan	1,000	1,000	1,000
Venezuela,Bolivar Rep of	85,152	81,003	80,000
West Bank	0	0	0
Yemen	10,062	10,000	10,000
Zimbabwe	11,500	11,500	11,500

Grapefruit and Pomelos Production (Mt)			Year
	2002	2003	2004
Algeria	1,534	1,500	1,500
Argentina	204,751	184,162	150,000
Australia	14,000	15,000	15,000
Bahamas	12,000	12,500	13,000
Bangladesh	17,000	18,000	18,000
Belize	44,762	39,205	40,000
Bolivia	29,360	29,350	29,350
Brazil	67,000	67,000	67,000
Burkina Faso	150	150	150
Cambodia	2,900	2,900	2,900
Cameroon	55	55	55
Central African Republic	4,400	4,300	4,300
China	356,786	409,869	473,000
Congo, Dem Republic of	9,716	9,800	9,800
Congo, Republic of	3,477	3,500	3,500
Cook Islands	0	0	0
Costa Rica	17,920	17,920	17,920
Cuba	137,312	227,800	230,000
Cyprus	30,000	30,000	30,000
Côte d'Ivoire	250	250	250
Dominica	17,000	17,000	17,000
Dominican Republic	3,600	3,650	3,000
Ecuador	31,629	31,377	32,000
Egypt	3,100	3,100	3,100
France	3,537	3,186	3,200
French Guiana	95	95	95
French Polynesia	500	500	500
Gaza Strip (Palestine)	0	0	0
Greece	7,500	7,500	7,500
Grenada	2,000	2,000	2,000
Guadeloupe	604	604	600
Guyana	2,000	2,000	2,000
Haiti	8,400	8,750	8,750
Honduras	23,630	23,630	23,630
India	140,000	142,000	142,000
Iran, Islamic Rep of	36,000	37,000	36,000
Israel	251,900	255,900	250,000
Italy	4,410	4,400	4,400
Jamaica	42,000	42,000	42,000
Jordan	7,194	11,793	12,000
Kenya	13,000	13,000	13,000
Laos	7,000	7,000	7,000
Lebanon	10,200	10,000	10,000
Libyan Arab Jamahiriya	0	0	0
Madagascar	9,200	9,200	9,200
Malaysia	8,391	8,391	8,391
Martinique	110	110	110
Mexico	269,069	257,711	257,711
Morocco	2,000	2,100	2,100
Mozambique	13,000	13,000	13,000
New Zealand	1,600	1,500	1,500

Palestine, Occupied Tr.	2,126	2,200	2,300
Paraguay	46,663	47,000	47,000
Peru	3,516	4,016	4,050
Philippines	44,000	45,000	45,000
Portugal	7,500	7,500	7,500
Puerto Rico	300	300	300
Saint Lucia	2,973	2,973	2,973
Saint Vincent/Grenadines	460	455	455
South Africa	380,000	380,000	380,000
Spain	24,496	30,453	30,000
Sudan	67,500	68,000	68,000
Suriname	1,020	1,060	1,060
Swaziland	37,000	37,000	37,000
Thailand	21,000	22,000	22,000
Trinidad and Tobago	2,508	2,600	2,650
Tunisia	72,000	72,000	72,000
Turkey	125,000	130,000	130,000
United States of America	2,199,020	1,871,520	1,952,260
Uruguay	6,725	7,000	7,000
Uzbekistan	1,000	1,000	1,000
Venezuela,Bolivar Rep of	9,100	9,100	9,100
Viet Nam	21,500	21,000	21,000
West Bank	0	0	0
Zimbabwe	8,300	8,300	8,300

Citrus Fruit nes Production (Mt)			Year
	2002	2003	2004
Algeria	380	380	380
American Samoa	25	25	25
Angola	78,000	78,000	78,000
Australia	1,000	1,000	1,000
Azerbaijan, Republic of	2,300	2,500	2,000
Cameroon	30	30	30
Cayman Islands	56	56	56
China	945,222	1,036,109	1,137,000
Cuba	2,800	2,900	3,000
Cyprus	10,500	6,000	6,000
Côte d'Ivoire	31,000	31,000	31,000
Ecuador	17,026	19,787	19,787
Egypt	2,400	2,400	2,400
France	100	100	100
French Guiana	0	0	0
French Polynesia	450	450	450
Gabon	1,000	1,000	1,000
Gaza Strip (Palestine)	0	0	0
Greece	4,500	4,500	4,500
Grenada	1,010	1,010	1,010
Guam	90	90	100
Guatemala	4,000	4,000	4,000
Guinea	210,000	210,000	210,000
Guyana	2,500	2,500	2,500
Honduras	380	380	380
India	100,000	88,000	88,000
Iran, Islamic Rep of	66,000	66,000	65,000
Israel	18,700	8,000	8,000
Italy	26,385	26,000	26,000
Japan	201,600	182,300	180,000
Jordan	0	0	0
Kenya	1,000	1,000	1,000
Korea, Republic of	1,000	1,000	1,000
Kyrgyzstan	500	500	500
Malawi	2,400	2,400	2,400
Malaysia	6,000	6,000	6,000
Malta	1,000	1,000	1,000
Martinique	240	240	240
Mauritius	410	410	410
Mexico	62,000	63,000	63,000
Morocco	10,000	10,000	10,000
New Zealand	8,500	8,500	8,500
Nigeria	3,250,000	3,250,000	3,250,000
Niue	0	0	0
Pacific Islands Trust Tr	0	0	0
Palestine, Occupied Tr.	140	150	170
Peru	43,739	45,000	45,000
Portugal	0	100	100
Qatar	800	800	800
Samoa	650	650	650
Saudi Arabia	140,206	140,000	140,000

Sierra Leone	80,000	80,000	80,000
Spain	15,000	15,000	15,000
Suriname	3,500	3,500	3,500
Syrian Arab Republic	219,713	220,000	220,000
Tanzania, United Rep of	39,000	39,000	39,000
Thailand	5,800	5,900	5,900
Trinidad and Tobago	3,950	3,980	4,000
Tunisia	67,900	68,000	68,000
Turkey	3,000	3,000	3,000
United Arab Emirates	5,934	6,000	6,000
United States of America	910	900	900
Uzbekistan	1,000	1,000	800
Wallis and Futuna Is	50	50	50
West Bank	0	0	0
Yemen	120	120	120
Zimbabwe	380	380	380

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Appendix B

Global Consumption

United States

The USDA has reported that consumption of orange juice in 2004/05 is estimated at 1.0 million tonnes, down about 4 percent from the 2003/04 level. The decline of consumption can be partially attributed to a number of negative media stories that indicate orange juice should be avoided by people on a low carbohydrate (Atkins) diet.[75]

Brazil

Brazil's consumption of processed orange juice is estimated at only 18,000 tonnes during 2004/05 (MY July 2005-June 2006), representing less than 2 percent of production.[76] It would seem Brazilian consumers are more likely to squeeze fresh oranges for their juice needs, rather than purchase orange juice.

China

China's consumption of orange juice continues to grow. In 2004/05, it is forecast that consumption will grow about 12 percent from the previous year.[77] The USDA believes demand for orange juice will continue increasing dramatically. Juicing companies increasingly advertise the nutritional benefits of orange juice through all Chinese media. Young consumers are driving consumption at a fantastic speed with demands for drinks with different juice contents.

The Chinese Ministry of Agriculture (MOA) reports per capita consumption of orange juice in China was 0.1 litre in 2001 and it is expected to reach 0.5 litre in 2005 and 2 litres in 2010. This translates into 650,000 tons in 2005 and 2.6 million tons of orange juice consumption in 2010.[78] Forecasts may be overly optimistic, but the growth rate remains amazing. The local juicing industry will not be able to produce such quantities of orange juice in the absence of sufficient raw materials. A few companies have invested in juicing facilities and commercial groves, but it will take years before a sizable orange juice volume is produced. It is expected that imports, mostly from Brazil, will satisfy the thirst for orange juice in the short to medium term.

While fresh orange consumption declined in many of the developed countries, it expanded in many developing countries, especially in the emerging economies of Mexico, India, Argentina and Brazil. Strong consumption growth was also observed in China. Fresh orange consumption is declining in the developed countries for two reasons. First, it is being replaced by orange juice consumption. The evolution of not-from-concentrate (NFC) orange juice in both North America and Europe has been supported by the perception that NFC closely duplicates fresh-squeezed in flavour but offers greater convenience. Second, with advancements in transportation and storage, fresh citrus is now confronted with more competition from other fruits such as bananas, grapes and strawberries.[79]

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Appendix C

Case Studies

1. The NSW Citrus Industry Experience Aggregating year round production

In 2002, Aurora Practical Solutions, an independent consultancy, prepared the Citrus Industry Development Strategy with input from the NSW Department of Agriculture, NSW Department of State & Regional Development and the Federal Department of Transport and Regional Services, growers and other industry participants.

According to a key contributor to the report, the project came out of an expression of interest from the Southern Queensland cotton industry in diversifying into citrus. Potential and existing citrus areas across NSW contributed financially to the feasibility study and three main areas were investigated:

- Potential to expand fresh fruit production
- Potential to expand fresh juice production
- How to revitalise the Southern NSW industry, which is made up of small growers.

This project took a holistic view of the Citrus Industry, seeing it as a total business unit within New South Wales. The project focused on the industry's trees and not the number of farmers within it and kept a market context.

The project determined that there was a significant structural change required within the industry for it to cope with the rigours of a deregulated marketplace. The project identified an opportunity for the development of additional citrus production in parts New South Wales and the aggregation and better resource utilisation in already established citrus growing areas. The proposed outcome of pursuing such a tack was:

- Through aggregation of supply, allow for a longer premium production period than is presently available.
- Extend citrus production over a greater growing period, from the south of New South Wales right up to the north west of New South Wales, taking advantage of the ideal climate and geography of new regions.
- Allow for better market penetration with a better, year-round offer for the consumer both in the fresh juice and fresh fruit markets.

"*At present, the citrus growers are an over-represented group of farmers and it is time to look seriously at the amalgamation of the many Industry bodies and redefine the Citrus Industry for this century and strategically develop synergies and partnerships across all citrus organisations and citrus growing areas. If this can be achieved, there will be a much more dynamic Citrus Industry and one that will be able to accommodate change and the challenges that a competitive world agricultural environment will offer in the future.*"[80]

The outcome

According to those involved in the project, it has been a great success and resulted in a supply network co-ordinating year-round production under 25 year supply contracts with P&N. There are currently 40 growers across 6 regions producing under this supply network arrangement. Aurora Practical Solutions claims the producers involved are achieving between 15% and 19% returns. Currently 40 hectares are being harvested per week with the long-term plan to take production up to 2000 hectares in total.

The project was not successful, however, in revitalising the Southern NSW industry. Smaller producers in the Southern NSW region resisted the project and according to Aurora Practical Solutions felt uncomfortable with change. The supply network project, by its very nature, tends to favour producers with the efficiencies and economies of larger scale production.

A quality assurance programme is currently under development with a medium term focus on developing a brand within the next 3 years and concentrating on increasing the up-take of new technologies to increase production and harvest efficiencies.

Most notably with regard to South Australia's industry, interest has been expressed by Aurora Practical Solutions in speaking with SA's citrus industry to investigate the possibility of joining this existing supply network.

2. Meat Standards Australia Addressing an inconsistent product and consumer dissatisfaction.

Meat Standards Australia™ (MSA) is a beef grading programme that labels beef with a guaranteed grade and recommended cooking method to identify beef eating quality according to consumers' perceptions.

MSA began as an industry programme that commenced in 1996 following detailed consumer research investigating the continuing decline in beef consumption. The key problem identified in the MSA research was that consumers felt beef quality was inconsistent. They couldn't be confident the quality would be acceptable from one purchase to the next. This problem was compounded by the fact that there was limited understanding of which cooking method should be used for what cut, further undermining the consumer's eating experience, with incorrect choices resulting in poor product performance.

Solving the problem began at the dinner table because consumers were not receiving a product that was consistently meeting their expectations. Over 50,000 consumers participated in MSA consumer testing providing scores on 500,000 beef samples from 47,000 cuts.

The MSA programme is designed around the 4 major traits that consumers' perceive in a beef product eating experience. Tenderness, juiciness, flavour and the overall acceptability of a cut are the measures a consumer uses to mentally grade an eating experience. The breakdown of relative important of these traits were:

1. Tenderness - 40%
2. Juiciness - 10%
3. Flavour - 20%
4. Overall Liking - 30%

Consumer studies showed that consumers would pay for beef that is consistently tender. For industry to deliver this, specific controls were required at each critical point throughout the supply chain working back from the dinner plate.

A significant amount of time and resources was spent on the science behind determining how to guarantee the tenderness of beef, especially as it can be affected at every step in the supply chain from genetics used in beef production through to treatment in the cattle yards, transport, stress at slaughter and to how and for how long a carcase is hung.

All participants in the MSA beef supply chain are Licensed to use the Trade Mark, and Certify products via an approved Quality Management System in accordance with the MSA Standards Manual. Licensees are subject to independent annual random audit programs for compliance to the Standards. DNA samples are taken from every carcase graded to enable trace back at the time of purchase.

This allows MSA grading to provide a consumer guarantee of eating quality at three levels in conjunction with cooking method, providing all the consumer needs to know to purchase and prepare beef with confidence.

The MSA programme is widely used across Australia and considered a leading light in consumer-based quality assurance systems for meat and other food products. In December 2004, 48071 beef animals were graded under the MSA programme. In 2003, there were 1564 licensed retailers and 35 processors licensed to sell and process MSA graded beef cross Australia.[81] There are also almost 30 beef brands using the MSA programme as a platform for product differentiation in the marketplace.

The MSA programme illustrates that seemingly subjective eating experiences such as tenderness and taste can be scientifically quantified and a framework built around them to deliver a performance guarantee to consumers. If the citrus industry is to move from a system where price and performance is based entirely on yield, size and fruit colour and meet consumer expectations in taste, juiciness and reduce unsatisfactory eating experiences, the Meat Standards Australia model is certainly one to consider closely.

3. 'Club Marketing'
Lessons to be learned from the Pink Lady™ experience

Originally applied to apples of the Cripps Pink variety, the Pink Lady™ trademark is now under licence across four continents.

The Australian apple industry with assistance from the WA Department of Agriculture established an international alliance of growers and marketers to protect the integrity of the quality standards that underpin the Pink Lady brand. In September 1999 an International Pink lady Alliance Agreement was ratified by Apple and Pear Australia Limited (APAL) along with the initial international licences.

In October 2001 the International Pink Lady Alliance Limited (IPLA) was established as a company in Australia. IPLA provides policy to maintain quality assurance standards of the brand and marketing strategy. Quality assurance standards include such things as 40 per cent of each apple must be covered by the characteristic pink blush before earning the right to wear the Pink Lady brand.

In protecting the Pink Lady trademark, a royalty - currently \$US1 (\$1.43) per 13kg carton of apples - was imposed to cover licensing and marketing costs. Two-thirds of that goes towards promoting the brand, while 30c is distributed among the master license holders in Australia and other countries. This money is then used to enforce the trademark, and to finance research on improving the underlying apple variety.

It sounds like a great success story, branding a commodity product, differentiating it in the marketplace and securing a premium for it. However, it has not been without its problems. According to an article in The Australian, September 2004,[82] ASDA, the British supermarket owned by Wal-Mart of the US, dealt a blow to the carefully constructed royalty scheme that underlies Pink Lady by announcing it would sell generic Cripps Pink apples alongside the branded ones, offering growers the same price for both versions.

Others are trying to mimic the success of the Pink Lady while avoiding similar pitfalls. "*Others are trying to do the same thing we have done, and they may not make the same mistakes. We have made lots of them,*"[83] says Peter Dall, who chairs the International Pink Lady Alliance, the global organisation for those who grow and distribute the apple.

The Jazz™ apple brand is one that has been developed in a way that should avoid some the pitfalls the Pink Lady has suffered from by developing a new breed of apple (Jazz is a cross between the Braeburn and Royal Gala) and retaining the intellectual property associated with it. This means the variety has been licensed and cannot be generically produced and marketed.

If the citrus industry wants to consider Club Marketing as a means of moving forward, gaining market share and entering new markets, there are lessons to be learnt from experiences within the apple industry.

References

[80] New South Wales Citrus Industry Development Strategy, Prepared by Aurora Practical Solutions, Dubbo NSW, May 2002.

[81] Cameron Dart, MSA manager, Meat & Livestock Australia Ltd Media Release, Level 1, 165 Walker Street, North Sydney NSW 2060, July 2003.

[82] John Gapper, Pink Lady in a brand new fight, The Australian, September 21, 2004.

[83] John Gapper ,Pink Lady in a brand new fight, The Australian, September 21, 2004

Appendix D

Priorities for R&D[84]

Variety improvement
Breed, import and evaluate new and improved varieties and rootstocks especially high yielding early and late varieties for export market development.

Market development and access
Develop non-chemical disinfestation treatments and protocols to ensure access to new and developing overseas markets.

Quality management
Develop production, harvesting and handling strategies to improve the quality of fresh fruit for export.

Develop and encourage adoption of quality management systems in production and postharvest handling of citrus.

Develop effective non-chemical in field and postharvest treatments for control of wastage and rind disorders.

Develop harvesting, handling and storage strategies to minimise the development of rind disorders and blemishes.

Sustainable production/pest and disease control
Develop salinity tolerant varieties and rootstocks.

Develop cost effective IPM techniques for infield control of pests and diseases.

Encourage adoption of improved irrigation technologies to improve water use efficiency and quality of fresh citrus.

An example of product development at the primary production end of the supply chain.

Promising new navel varieties according to SARDI:

Spanish Navelina. Although the yield performance from this variety has sometimes been inconsistent, it has advantages in fruit quality over the older early maturing varieties previously planted in Australia. The fruit has a higher juice content than the old Thompson navel and does not have the splitting and small fruit problem of the Leng navel. In addition it has excellent red-orange skin colour and matures as early as the older varieties. Its main disadvantage is its fruit shape, which varies from year to year, but in some seasons it is quite oblong, rather than the desired spherical shape. More measurements of yield are needed to better define its yield potential.

Newhall is similar in quality to Navelina, having the same advantages over older varieties as Navelina, but it is even more oblong in shape. Newhall may give higher yields than Spanish Navelina, but with smaller average fruit diameter.

The recently introduced **Italian Navelina 315** is reported to produce larger crops than the Spanish Navelina and development of skin colour is earlier in the season. Although both these advantages may be of considerable commercial benefit this new variety has not yet been proved in Australia and although the advanced colour development may mean that ethylene degreening is not necessary, the larger crops will probably mean smaller fruit size, unless fruit thinning is added to the cultural practices needed for the best financial outcomes.

Palmer navel is another new variety widely used in South Africa, probably our major long-term competitor on export markets. Palmer has a reputation for producing large fruit, but again it has not yet been evaluated in Australia, side by side with the best of our Washington navel selections and therefore is at present only recommended for experimental plantings.

Cara Cara is probably one of the most interesting of the recent introductions, because it is a red fleshed navel orange, originally from Venezuela. It has very distinctive flesh colour, which may become a marketing advantage although the taste of the fruit may not be outstanding.

It really needs local evaluation before confident recommendations can be made.

Fischer, an early maturing variety from California has been found to mature earlier than the Washington navel, but because the skin colour only develops at the same rate as a Washington navel, it cannot be harvested earlier unless ethylene degreening is used. Three years data averaged from experiments at Loxton and Waikerie, on six to nine year old trees, show that Fischer yielded about the same as the Spanish Navelina and 20 percent less than the Washington navel selection Loxgold.

Atwood is an early to mid season navel also from California. It has a reputation for producing larger fruit than a standard Washington navel, but its yield performance in Australia is largely unknown. In California it yielded relatively well in an experiment conducted in the San Joaquin Valley, at Lindcove Field Station, part of the University of California.

In the near future the **Fukumoto** will be tested in Australia and because of its fairly early maturity and round shape it may also become a popular commercial variety, however, until local information is available it should only be planted in experimental quantities as there is overseas comment that it is a light cropper. As yield per hectare has a big impact on returns per hectare, it is vital to have and accurate estimate of yields before large areas can be planted with confidence.

Of the late hanging selections of navel orange currently being evaluated, the Rohde, Neilson, Wilson and Lane Late have produced the highest yields. Since tree yield has a major effect on returns to growers these may be the preferred selections to plant. Fruit quality differences between these and other selections were small, but significant in some years and not others. Management practices and climate may have a larger effect on fruit quality than genetic differences between selections.

Reference

[84] http://www.sardi.sa.gov.au/, accessed 21/07/05