



The Growing Juice Gap: Opportunities for South Australia?

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Prepared by

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Executive Summary

Background

This report is in response to a request by Hon. Karlene Maywald, Minister for Regional Development, Minister for the River Murray and the Member for Chaffey, to assess problems in the Riverland citrus industry which, in the current 2004-05 season, led to significant quantities of fruit remaining unsold.¹

It is also part of a larger process to assist the citrus industry in determining its strategic directions. This paper is accompanied by the *Situational Analysis of the South Australian Citrus Industry*, prepared by PIRSA and will be followed by a similar report on the fresh fruit sector. These papers are intended to be agreed statements about the position of the industry and the issues to be addressed.

Key Facts about the Juice Gap

- Australian consumption of orange juice is *growing* at around 4% pa
- Australian production of orange juice is *declining* at around 2% pa while total orange production is growing slowly
- Fresh orange exports are growing at 4%
- Juice imports, which are nearly all concentrate, are filling the gap between local production and consumption
- South Australia has a competitive advantage in fresh fruit production and it appears likely that many of the opportunities for filling the gap will be taken up in the eastern States
- Nevertheless, juice processing will remain an important component of the industry in SA.

¹ Our latest information is that most if not all of the fruit has since been sold. (pers.comm. 27 July 2005. Andrew Green, EO of Citrus Board of South Australia)

PIRSA's assessment

- There is potential to increase domestic consumption of premium fresh Australian-sourced juice
- The problem is in attracting reliable, year-round supply of high-quality juicing fruit
- Maintaining a viable juice sector in SA requires a higher degree of certainty about fruit supply in the long term and about coordinated delivery of fruit within each season
- New orchard technologies may reduce production costs enough to make supply of such fruit profitable
- Greater predictability is also required in the fresh fruit sector both in the long term and in managing seasonal flows
- This will require better long-term, collaborative relationships among growers, packers and processors. Some industry members are implementing this approach but it needs to become the norm.
- There are economies of scale in managing strategic alliances and in growing citrus fruit (as there are in packing and processing).

Issues for Industry

- International competitive pressures in fresh fruit and juice production (some of which will come from overseas adoption of the new technologies) will generally require larger citrus operations in South Australia to exploit the available economies of scale
- Reducing costs and improving collaborative relationships are critical changes not just for juice but also for the fresh fruit segment of the industry
- There are numerous ways in which growers can increase scale, including buying neighbouring farms or collaborating in production and marketing. It is up to the industry to devise the arrangements that best respond to the opportunities and threats

- The efforts of growers must extend along the supply chain so that collaboration is also strengthened between growers and downstream sectors
- The Riverland winegrape industry is currently investigating options for dealing with the same issues and there is a strong case for combining forces in that investigation. Indeed, the development strategies might best be undertaken at a regional level, rather than sector-by-sector.

As PIRSA has found in its recent investigations of the winegrape industry, government is likely to support the industry's efforts enthusiastically, including by providing the information that industry people require to assist their deliberations.

1. Introduction

1.1 Genesis and Scope of the Report

This report is in response to a request by Hon. Karlene Maywald, Minister for Regional Development, Minister for the River Murray and the Member for Chaffey, to assess problems in the Riverland citrus industry which, in the current 2004-05 season, have led to significant quantities of fruit remaining unsold. We get behind that fact to provide reasons and to develop also a view of the industry's future and the potential roles for government and industry in improving outcomes.

Although the orange juice industry is linked to the broader orange and citrus sectors, this report focuses on the orange juice industry alone and reports on the situation in South Australia.

1.2 Method and Outline

We proceed by firstly relating some of the basic information about orange juice production, especially how it links to fresh fruit production and consumption. Secondly, in Section 2, we present the key data on production, consumption, imports and exports in graphical form. We report predominantly national level data, largely because sense cannot be made of the situation by considering South Australia in isolation, but we then focus the analysis on South Australia by using cost and other information gathered in conjunction with industry. Section 3 sets out the short and long term issues facing the industry and Section 4 describes how industry and government might respond to those issues.

1.3 Some basics of the orange juice industry

Orange juice can be made from freshly squeezed fruit, from stored concentrate or from stored juice (also referred to as fresh). South

Australia produces and imports all 3 types. Juice from 100% fresh fruit commands a price premium usually around 250% of that for juice made from concentrate.

Orange juice is made predominantly from Valencia oranges. Navel oranges are used but they are more valuable as fresh fruit and are also less suitable for juice because they can become bitter when kept for any significant length of time after being processed or when pasteurised.

South Australia produces and imports fresh and juiced fruit.

The two major varieties have different bearing seasons: Valencia oranges are usually in season from September through to April, however this can be extended right through to July, but at some stress to the trees and some negative impact on the forthcoming crop. The various types of Navels are in season from May through to December. Thus, although Valencias are most favoured for juice, there is a seasonal gap when Navels are used and this explains why fresh single strength juice may taste different at different times of the year.

Imported Frozen Concentrate Orange Juice (FCOJ) is the other major component entering juice processing, serving not only to fill gaps in fresh fruit supply but also to help make taste more consistent throughout the year. Australian producers cannot compete successfully with imported FCOJ, which generally costs 22-25 cents per litre compared to Australian production costs for juice at 60 cents per litre and \$1 per litre for Australian concentrate. The cost difference means that freshly squeezed Australian juice is not used in long life products so that increases in that market segment do not mean increased use of fresh juice fruit. It is also worth noting that Australia has begun importing some single strength juice, although this represents only a tiny part of total juice production and is unlikely to increase greatly in the near future, partly because the landed cost is approximately \$1 per litre.

The categories of orange juice and their predominant components are shown in the following table.

Category	Components
Fresh oranges for on-the-spot juicing	100% fresh oranges
Fresh Premium 100% Australian	100% Australian single strength juice
Premium Australian Juice	At least 51% Australian Juice, + imported FCOJ
Other chilled juice	Imported FCOJ but some Australian juice
Long life juice	All imported concentrate – but might contain a small amount (5 – 10%) of Australian concentrate

Some categories use Australian-sourced juice in varying degrees and the total of these Australian components is what we refer to in this report as being the market for Australian juice.

One recurring issue for the industry with regard to the various categories of juice is the regulation of labelling. Despite numerous initiatives to clarify and address the ambiguities, particularly with regard to country of origin and/or content descriptions, industry has expressed the view that labelling requirements are still far from clear, with misleading statements on some labels (PC, 2002). Australian Citrus Growers (2005) in particular is “striving for clear descriptive labelling to differentiate fruit juices made from whole fresh fruit as opposed to those reconstituted from concentrate”. In addition, ACG is involved in on-going “Country of Origin” labelling reviews.

In South Australia, nearly all juice is made from the run-off of production which is managed primarily for the more lucrative fresh product. Some common orange varieties are grown specifically for juice supply in months when Valencias are scarce. Juice from locally grown fruit is sometimes supplemented by imported juice, usually sourced as frozen concentrate, but also, in small but growing volumes, as single strength juice.

Seasonal differences and the biennial bearing characteristic of orange trees result in substantial variation in yields from one year to the next and this can mean that there is a relative shortage of fruit in some years and a relative abundance in others. The production data in Section 2 show this biennial oscillation. One critical issue for the industry is the coordination problems the variations cause. The problem is further complicated by the fact that, in Australia, orange juice is usually made from the residual fruit not sold as fresh.

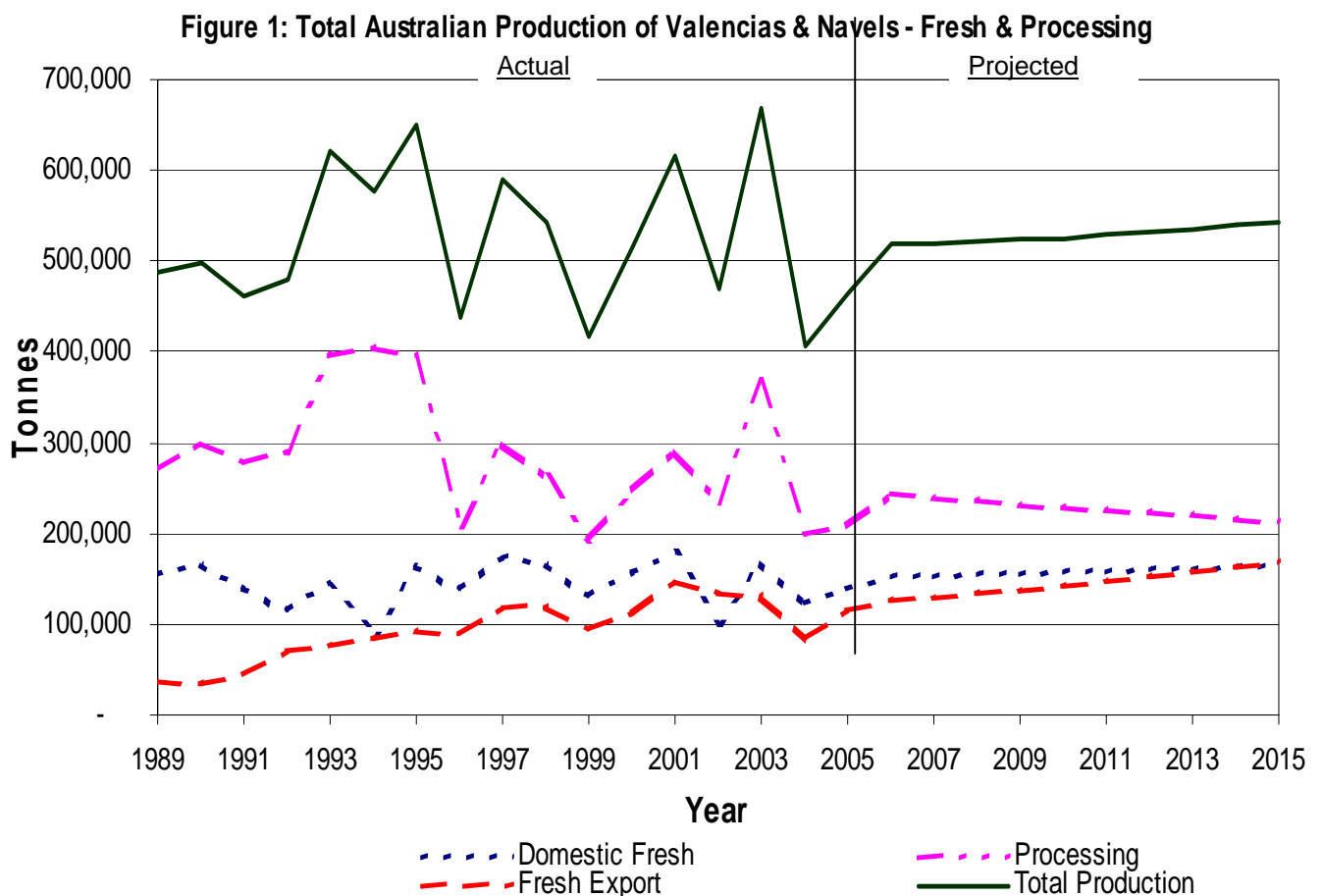
The most usual contractual arrangement is that packers sell fruit for growers for a fee. Some others combine packing and juice processing and, in that case, it is more usual for the packer to buy the fruit from the grower. Packers usually have long-standing arrangements with retailers for fresh fruit and with processors for juice production. Some of these are formal contracts. Similar, often long-standing arrangements exist between many packers and their grower clients/suppliers: a mixture of verbal and formally contracting. These arrangements rarely specify all aspects of supply and that is a critical weakness as we explain in more detail below. Few specify quality parameters to the extent that is common in, for example, the wine grape industry and timing is not usually specified. This lack of specification can cause problems in years such as 2005, as we discuss in section 1.3. In addition to these contractual arrangements, a significant number of growers either sell their fruit into the market at the current spot price or move between packers on the basis of the best deal that is on offer each season.

2. Australian Orange Juice Production, Trade and Consumption

This section provides some background facts. We present national data on the orange industry, with a particular focus on orange juice, and show that a gap is opening between Australian juice production and consumption. We then fit South Australia into the national picture to give an initial indication of whether South Australia is the likely site for any possible expansion that might fill some of that gap.

2.1 Trends and Projections

The aggregate trends in production of Navel and Valencia oranges and orange juice from Australian grown fruit are shown in Figure 1 below. Production data are shown for the period 1989 to 2005 (estimated) and projections are made for the years 2006 to 2015.



Source (ACG; PIRSA; ABS)²

* For reasons of data availability in this section we use data for processing as if it were for juicing alone. The two are in fact slightly different as a small amount of Australian orange production is processed for products other than juice.

The biennial oscillation described in Section 1.3 above is evident in the saw tooth pattern that can be seen on the top line of Figure 1. The fluctuation is through the range +/- 27% of the production trend. The variation is even more marked for juiced fruit (+/- 38%). This reinforces the point also made in Section 1.3 that, being the least profitable end-use, the juice sector absorbs the bulk of the oscillations in total fruit production.

The trends to note from Figure 1 are:

- Total production is increasing slowly at 0.1% pa
- Total juicing of Australian oranges is declining at 2.3% pa
- Domestic consumption of fresh fruit is growing only slowly (0.11% pa)
- Fresh exports are growing strongly (4% pa)

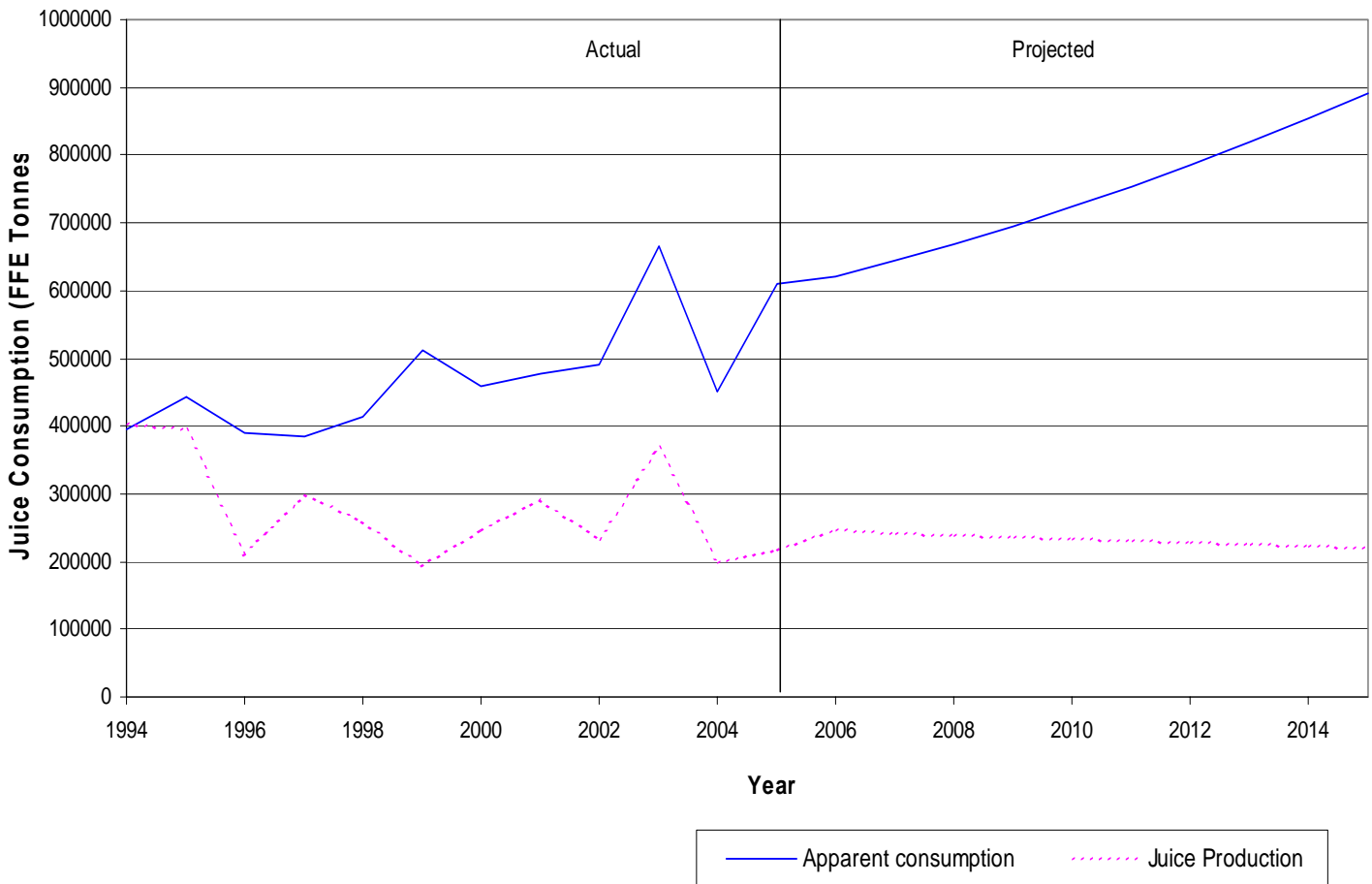
The implications become more apparent from Figure 2 below. To report data on Australian consumption we must construct estimates based on figures for locally produced juice, exports and imports. We explain the method in Appendix 1. It allows us to produce the following Figure 2 which shows:

- Consumption of orange juice is growing at around 4% pa (by comparison consumption of fresh oranges is declining marginally, in Australia and in many other advanced nations)
- Production of orange juice from Australian fruit is declining at 2% pa

² See Appendix 1 for explanation of the method applied to derive trends and projections, and sources of data.

- The gap between local production and consumption is covered by imports, predominantly comprised of concentrate.

Figure 2: Trends & projections for Australian orange juice production & consumption



Source (ACG; ABARE; PIRSA)³

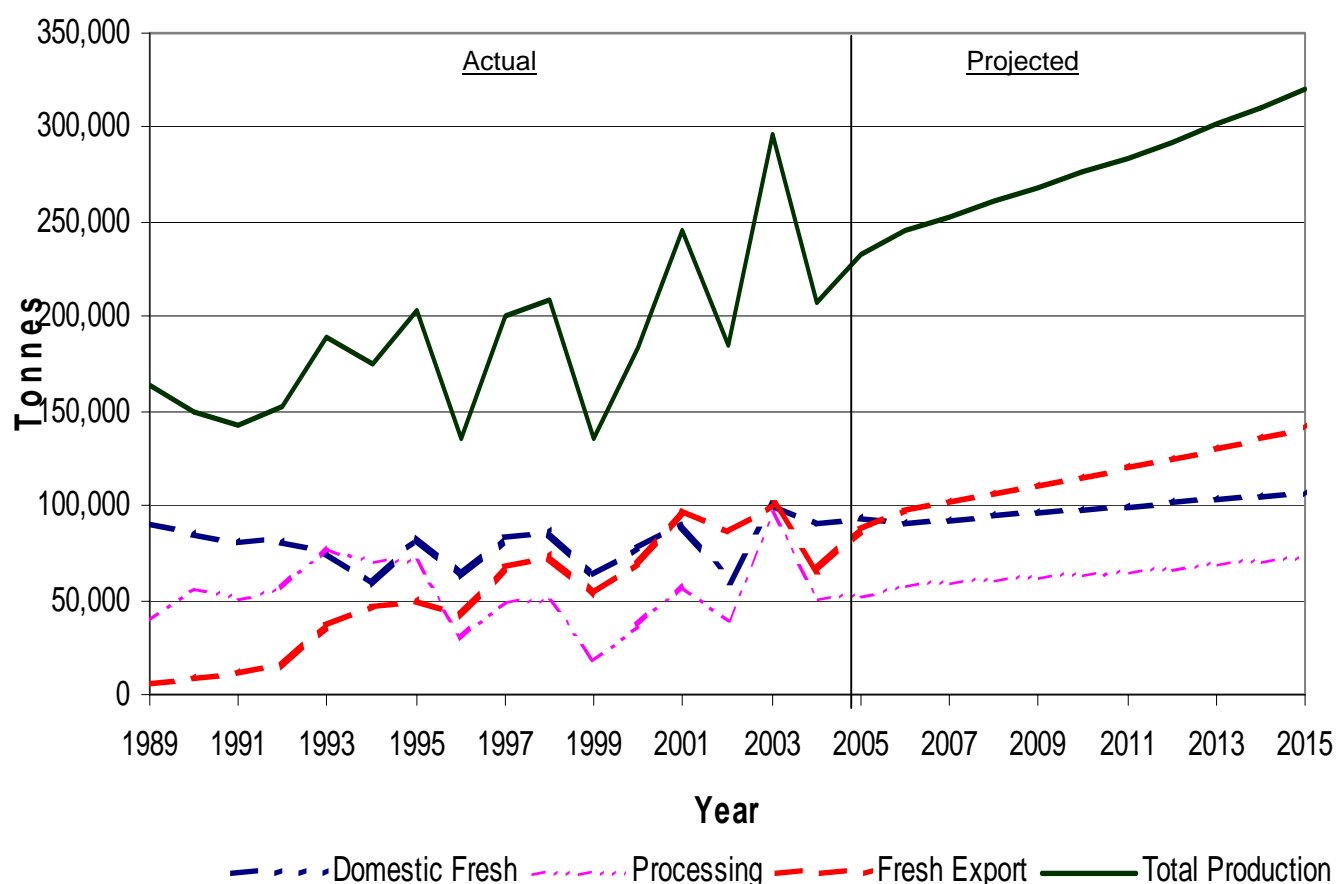
Like many developed nations, the demand for premium fresh juice has been increasing quickly in Australia (although there was a slight decline during the past year) with some sectors of the consumer market even demanding not-from-concentrate juice. However, it appears that most consumers have little aversion to products made from FCOJ and even fresh juice blended with concentrate commands a substantial price premium. Finally, it should be noted that the lower quality juice products have recently decreased in price.

³ See Appendix 1 for explanation of the method applied to derive trends and projections, and sources of data.

The changes in tastes and prices have resulted in a steady increase in consumption of long life juices from 224 million litres in 2002 to 272 million litres in 2005. Over the same period the growth in premium fresh juices has been much slower and the juice processors are now focusing on rebuilding this market.

We can penetrate the situation further by now separately considering Navel and Valencia oranges and this generates the data for the following figures. Figure 3 shows the situation for Navels.

Figure3: Total Australian Production of Navels - Fresh & Processed



The salient points are:

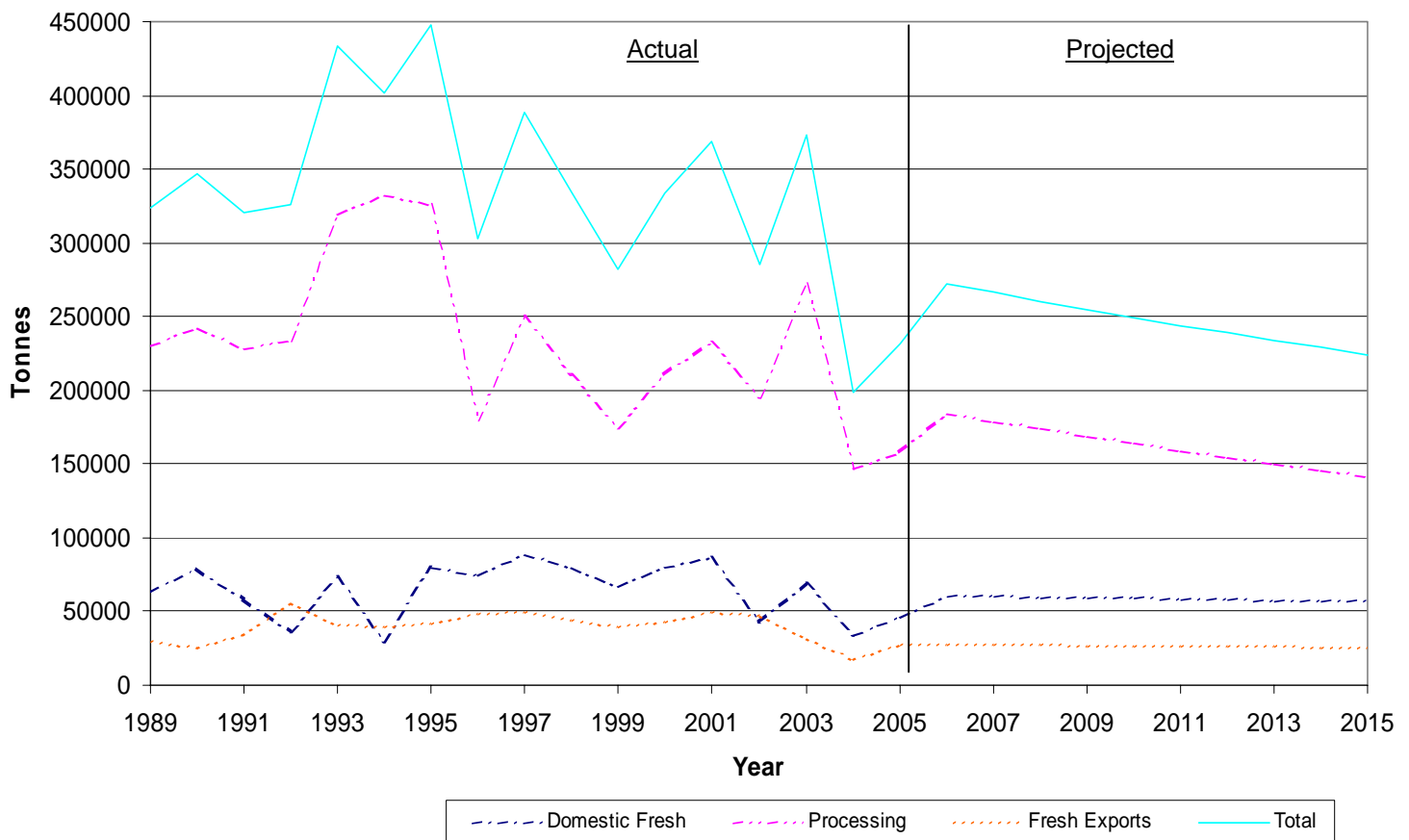
- Navel production is growing and nearly all of that growth is going into the fresh export market which is generally higher priced⁵

⁴ See Appendix 1 for explanation of the method applied to derive trends and projections, and sources of data.

- An increasing volume of Navels has been going to juice processing in recent years. However discussions with industry sources suggest that, as Navels are less suitable for juicing, juicing demand for Navels is likely to decline.

Figure 4 shows data for Valencia oranges and is more significant to this study because the fruit is more suitable for juice.

Figure 4: Total Australian Production of Valencias - Fresh & Processed



Source (ACG; PIRSA; ABS)⁶

We can see immediately that most Valencias are used for juice. In addition, Figure 4 shows:

- Stable domestic and export demand for fresh fruit
- Declining processing of Valencias for juice.

⁵ Exports into the US market via Riversun Export Pty Ltd has been the main driver of this growth. This was brought about by negotiation of fruit fly area freedom status in the US market for SA then Sunraysia and the Riverina in the 1990s. F.O.B. prices in that market have been up to double those in other markets

⁶ See Appendix 1 for explanation of the method applied to derive trends and projections, and sources of data.

The downward trend in Valencia production is the net result of grubblings exceeding plantings in most years. With total orange production increasing, as shown in Figure 1, while production of Valencias is declining and Navels is increasing, the net result is that growers are moving out of the juicing orange varieties and into high-end fresh fruit. This means there is a long-term downward trend in the availability of oranges suitable for juicing, even while orange juice consumption continues to grow.

The implications are that there is an growing juice gap and that, without other change, imports will continue penetrating more deeply into the local orange juice industry. However, keep in mind that imports are mainly of concentrate, supplying predominantly the lower end of the juice market (although also available to be blended with high quality, fresh juice). There is therefore an emerging gap, especially in the supply of premium grade fresh juice. It is an opportunity for imports from high quality foreign sources but it might also be a gap that could be filled from local sources, subject to the viability of new plantings of Australian Valencias, a matter we take up below.

2.2 South Australia in the National Context

Before we look into the viability of national expansion, it is important to place South Australian orange juice production within the national context. The environmental and climatic characteristics of the South Australian citrus growing region make it a prime location for the production of high quality fresh fruit. South Australian produced fruit have the colour, sweetness and taste characteristics particularly prized in fresh consumption markets, both domestic and export. Hence, orange production in South Australia is predominantly for fresh fruit although, as with all orange production, some fruit also goes to juice. In other words, juice production will remain secondary to the primary activity of growing for fresh markets and will use only that part of the crop which is residual from or unsuitable for those markets. These comments fit with the views,

expressed by industry people, that it is unlikely any South Australian grower will opt for juice-only production.

On the other hand, the Riverina and northern regions of New South Wales appear to be more suitable for large-scale production of juicing fruit, both juice-only and combined fresh fruit plus juice. The land is flatter with suitable soil and climate, including “heatsums” more appropriate to juice production and a wider distribution of harvest seasons (Aurora, 2002). The Riverland’s higher winter chill factor is, by contrast, one of its competitive advantages in the fresh fruit market.

Moreover, the fact that, in the Riverland, Valencias usually ripen in September and flower in October makes the region unsuitable for the current methods of mechanical harvesting, since the crop would have to be harvested within one month. This would not suit the fresh juice market which requires a continuous supply of fruit.

These facts are borne out by recent data regarding budwood sales which show that there has been a major increase in plantings of Valencia, especially newer varieties such as Parson Brown, Hamlin and Salustiana. In 2004-05, budwood sales of these varieties was more than 145, 000. PIRSA understands that most of these are destined for plantings in northern NSW.

There is one more point to draw out of the comparison among the States. South Australia’s focus on the fresh market places packers in a key position in both the fresh and juicing-fruit markets and this makes them more important players in South Australia. The arrangements packers enter into with growers is therefore a critical matter to the local industry and we take it up again in the final section.

3. Strategic Issues

The strategic issues facing the orange industry in general and hence the orange juice sector in particular are a combination of intra-seasonal (short-term) and inter-seasonal (long-term) matters. The intra-seasonal problem is about coordinating harvest with the flow of product required in both the fresh fruit and juice markets. We have seen that annual production is variable and this causes problems in setting contracts for future supply, especially to juice processors given that juice is often made from the residual of the crop. In the longer term, it must be understood that orange production has a long lead-time, as much as 7 years, from planting to full production. The critical matter of matching varieties and quantities to domestic and export requirements for fresh and juice uses is therefore difficult.

These issues have created problems, evident in the lack of supply coordination in the most recent season but also as a constraint on future responses to the opportunities for premium fresh Australian juice.

3.1 The problem in 2004-05

In the 2004-05 season, industry data indicated that some 4,500 tonnes of Valencia fruit were in danger of being wasted because they were uncontracted.⁷ This was a result of an acute period of oversupply. There were some peculiar issues that exacerbated the glut in the last year⁸ but it is more important to focus on the underlying, strategic and therefore recurring causes.

In Section 1.3 we have described the basics of the contracting arrangements and noted that in South Australia packers play a major role,

⁷ Compared to 800 tonnes at the same time (June) last year.

⁸ These include:

- Cool stored summer navels were marketed later in the season within the traditional timeslot for early Valencia
- Sales of fresh premium orange juice declined. This was partly due to price increases and partly due to the lower quality in this category because of the addition of concentrate.

standing, in the fresh fruit market, between growers and retailers (or importers) and, in the juicing fruit market, between growers and processors. Many growers have long term or forward contracts for supply of their fruit but some choose to rely on selecting their packer depending on the price/packout combination the packers can negotiate with their various customers.

The processors, grower organisations and citrus boards use the national Fresh Fruit Marketing and Processing Forum to project fruit supplies and conditions. The forecasts have proven to be relatively accurate but the occasional inaccuracies can have important consequences, as was the case in 2004-05.

Given the configuration of contracting we have described and the great variations in annual production, spot prices for oranges can be highly variable and this fact is well known in the industry. However, if players inaccurately anticipate spot price movements, their responses can lead to perverse decisions by growers. So it was in the most recent season when the following scenario developed. The crops of Valencia oranges have been lighter than anticipated for two seasons in succession. In the current 2004-05 season, forecasts were initially pessimistic but were later revamped to reflect the emerging evidence that yields would exceed initial expectations. The early talk of shortages and therefore high prices had tempted some growers to hold back their uncontracted fruit. Some processors responded by increasing their juice imports to underpin their commitments to supply. In addition, leaving oranges on the trees meant that yields and fruit sizes increased, adding to the emerging glut. The end result was the large quantity of unutilised fruit. This was so even though the processors honoured all contracts (Berri alone purchased an additional 30% above contract obligations).⁹

⁹ Some imported concentrate remains in store because processors have continued to take fresh fruit and have also recontracted to normal levels for the coming season.

3.2 Longer-term Issues

We have already noted from the data in Section 2 that, on current trends, there will be an emerging shortage of locally produced Valencias. The question is then whether Australians can prudently increase Valencia output or are there long-term issues that make such a course unwise. The focus is on the long term because, as we have noted, the lead-time from new plantings to maturation is long. However, if filling the perceived gap between consumption of premium fresh Australian juice and local production can be done profitably, it is likely that the rate at which Valencia trees are grubbed will also fall, giving a boost in the short term compared to our projections.

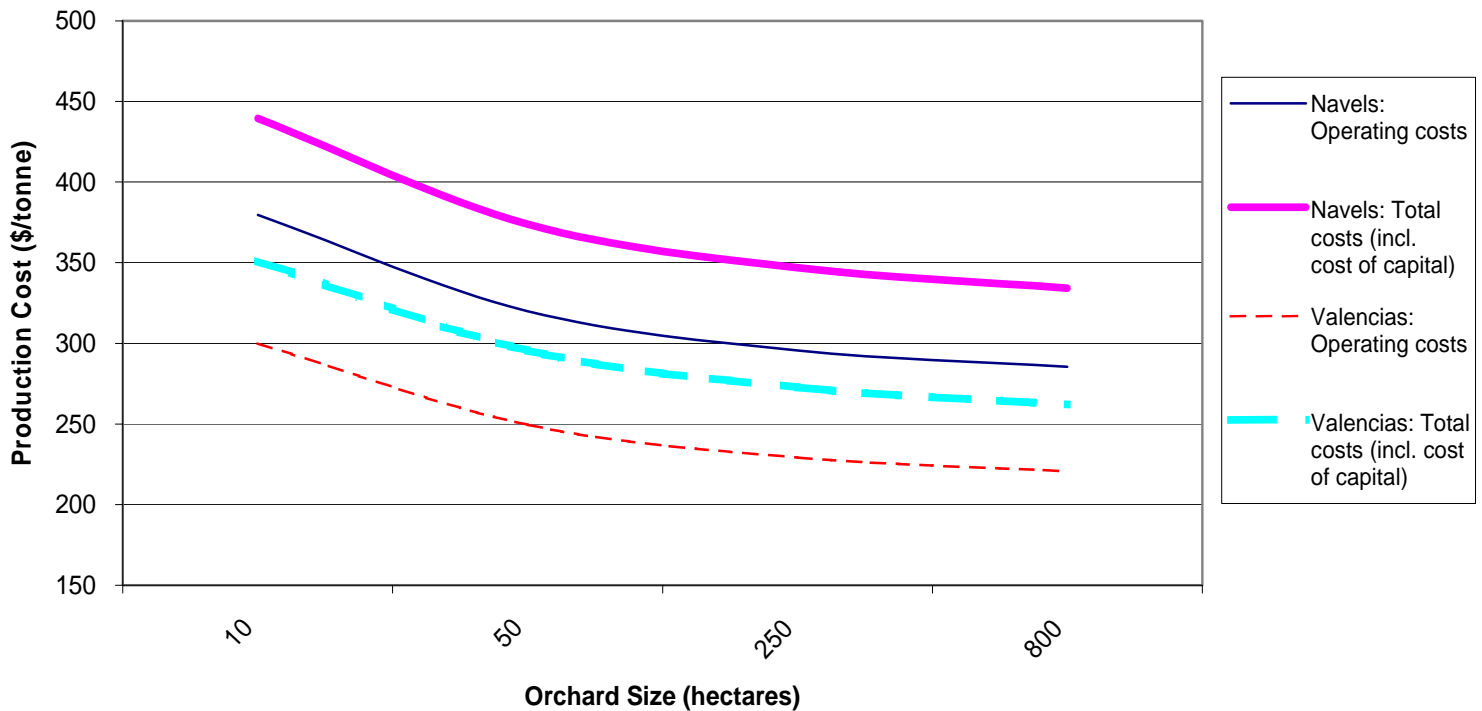
One consideration in assessing the potential to meet the perceived gap for premium juice is to assess the potential for increased import competition. We know that imports of FCOJ are growing. Further, we can surmise that the nations most likely to fill most of the gap are the low-cost citrus-producing nations, especially Brazil and the People's Republic of China (PRC). Do these potential imports mean that Australian producers would be ill advised to attempt to increase local Valencia plantings (or, again, reduce the rate of decline)?

For this study we have looked at the case of imports from the PRC (see Appendix 4). We have concluded that the PRC will not be a major source of import competition in supplying Australian orange juice consumers in the medium term. In addition, there appear to be problems in further expanding the Brazilian industry and it too is unlikely to be a major source of trade growth in the medium term (USDA, 2005). This suggests that we should look more deeply into the matter by considering the costs of local production at various orchard sizes and comparing this to what the processors have told us about the price they can afford to pay for fruit.

From our consultations with industry that price is in the vicinity of \$220-250/tonne. We have responded to that information by collecting data from

industry to construct the following Figure 5 which shows production costs at various farm sizes.

Figure 5: Production Costs of Navel and Valencia Oranges in the Riverland



Source (PIRSA)

Figure 5 is a long-run average cost curve for oranges grown in the Riverland.¹⁰ It shows the total production cost per tonne of fruit on the vertical axis and farm size (in hectares of orchard) of the horizontal axis. There are two curves each for Navels and Valencias. One shows total operating costs, including all overhead costs such as depreciation of plant, installations and the orchard itself (the latter over 40 years), administration and a salary allowance for a professional manager, even if an owner/manager does not draw a salary as such. The second curve adds an allowance for the cost of capital (assumed to be 8% of the total cost of the orchard, including land and water rights) to total operating costs. In some cases, much of this will be paid as interest on loans, but the rest is based on

¹⁰ The idea behind the long-run curve is that it describes the costs incurred at different output levels using the technology most appropriate to each level. In other words, it allows for change in production technologies as a farm increases in size and these changes can only be made in the long-run – hence the name of the curve.

the assumption that 8% is an acceptable rate of return on their own capital to many orchard investors.

Other assumptions include:

- A yield of 40 tonnes/ha for Navels
- A yield of 47 tonnes/ha for Valencias
- A high, professional standard of management expertise
- An averaging of costs and yields over a series of seasons
- Technology that is common in most mature orchards currently in the Riverland, that is, tree density below 500/ha and drippers or under-tree sprinklers.¹¹

The result is an indication of significant, but not great, economies of scale and is broadly consistent with other studies.¹² For example, the total operating cost for Valencia production falls by about 17% from \$300 to \$250 per tonne as scale increases from 10 ha to 50 ha. Despite the scale economies, even at 800 ha, the total cost of Valencia production (including cost of capital) is \$270 per tonne. This supports the view that juice-only production (with hand picking) would not be attractive at a long-term contracted price of \$220-250. However, with pack-outs of fresh fruit over 50% and average fresh fruit returns of \$300-350, the juice fruit operation would be marginally profitable.

On the other hand, 40 tonnes/ha of Navels sold for even \$400/tonne would generate about an extra \$3,000/ha in profit. This is the basis of the conventional wisdom that Navels are a better variety in South Australia.

We have done some analysis of costs under the newer technologies now being introduced into citrus orchards and the results appear impressive.

¹¹ It does not assume more recent innovations because, in this study, we are focussing on juice and therefore Valencias, of which most are mature and few new trees are being planted.

¹² For example, it has been shown that 30% of growers produce 90% of citrus output (86% in SA). Further, profitability is highly correlated to the size of the operation, again emphasising the importance of scale (PC, 2002).

For example, we have received evidence that large-scale orchards using higher-density plantings and the open hydroponic system are currently delivering Valencias to the packing shed door for \$110 per tonne, with the potential for further cost reductions, possibly of the order of 30%.

We have not investigated this information in detail, but its implications appear to be substantial, all the more so because the benefits of the new technologies appear to be greater at larger scales of operation. Thus, as we have seen in other agricultural sectors, the drive for greater competitiveness requires relentless pursuit of new technology and this, in turn, tends to increase the optimal scale of production.

One implication is that, with the new technologies, it should be profitable to plant Valencias. However, the previous points still stand:

- Juice-only operations will not extract the highest returns available, with either mechanical or hand harvesting; and
- The market season for fresh Valencias is being progressively squeezed by new Navel and easy-peeler varieties and, in our Asian markets, by Navel production from China and elsewhere.

This means that new Valencia plantings in SA will provide diversification opportunities to moderate the risks associated with Navels and easy-peelers and to bolster a long-term strategic alliance with a packer and juice processor to fill gaps in their supply portfolios. Moreover, the pack-out rates from the new technologies are generally higher.

Having looked at production scale and cost we have also been concerned to consider the strategic significance of some other current arrangements among the various private interests in the orange juice sector. In particular, the experience of 2004-05 suggests that current forecasting arrangements should be reviewed. It is critical that the annual predictions of fruit availability are as accurate as possible, given that we know some growers will attempt to respond tactically to forecasts so as to maximise their

individual benefit, even though, as the 2005 experience shows, many of them doing so can be self-defeating. In this regard, we have already noted the good but not faultless track record of Fresh Fruit Marketing and Processing Forum. We also note that Centre for International Economics is of the view that there are “substantial discrepancies” (CIE, 2005, p 2) between production data from the ABS and from various citrus Boards and that at least one industry voice is of the view that “our crop estimates ... seem to get both packers and growers into trouble” (Cox, 2001).

Another of the current arrangements in the local industry that is different from particularly the practices of the US and South African industries is that it is our local packers who contract for exports. This arrangement means that there have been occasions when Australian packers have undercut each other in export markets, leading to poorer industry returns. It is important to note that this behaviour does not occur when exporting to the USA because, in that instance, we have a legislated single exporter arrangement managed by Riversun Exports Pty Ltd.

The final strategic issue to be considered here is to acknowledge the inextricable link between oranges for fresh consumption and oranges for juicing. It is not merely that juice comes from the residual from fresh or that Valencias and Navels have different optimal mixes of fresh and juice. The fundamental link is through the contractual arrangements that overlap both fresh and juice activity. In the next section we develop that theme into a series of recommendations for industry and government. In coming weeks we will link that section to a second report on the orange industry as a whole.

4. Possible Responses by Industry and Government

We approach the question of what might be done in the orange juice sector from the perspective that industry players themselves are best placed to respond to the strategic issues we have identified. In particular, as we will argue in more detail below, the players need to look to the relations among them and develop institutional and contractual arrangements that ease the coordination difficulties. Government can help in that development and can also take action directly and we set out the possible elements of that response. Finally, we point to the next steps which PIRSA will take in conjunction with industry.

4.1 Strategic alliances and long term contracting

Orange juice production involves many dedicated investments. For example:

- growers must sink funds into long-lived trees which do not mature for some years and which commit the grower to future production of a particular variety, therefore also tending to lock in the end use
- packers must commit to supplying retailers and exports for a considerable period in advance of their obtaining the fruit
- processors need to supplement any shortfall from local production with imported fruit and that needs advanced planning.

In addition to these logistical matters, packers, processors and others along the value chain have brands and reputations to protect and, as in other industries, this creates a network of mutual dependencies running all the way back to the grower.

In short, the interdependence resulting from these sunk, transaction-specific costs is a challenge to industry and there is some evidence that it is not currently handled in an optimal manner. One influential industry

voice has claimed that there is an “adversarial relationship and lack of trust between growers and packers” (Cox, 2001).

PIRSA believes that the way forward involves better and more long-term strategic alliances within the Australian industry. In this section we explain how such a strategy fits with the issues we have identified in Section 3.

We have characterised the situation of the current season, with unused, unsold, uncontracted juicing fruit as one of intra-seasonal coordination: the need to link growers and packers in a more cooperative framework. To understand why this issue requires long-term strategic alliances, consider what happens in their absence. Then we have a simple market relationship where growers pick and choose among buyers of their fruit, sometimes choosing to wait for higher prices, sometimes selling their crop quickly in anticipation of price falls. This kind of behaviour makes the uncontracted price of fruit (also known as the spot price) highly variable. It can also send perverse, counter-productive messages to fruit buyers who sometimes look overseas in anticipation of restricted supply and sometimes fail to import enough when growers have placed their fruit in the market early in the season. In other words, a simple reliance on the market is not an effective way to manage the complexities of coordinating supply to numerous markets (domestic, export and juice).

This broad approach, of deepening the relationship among industry players, responds not only to the problem of last season, it also has the potential to help with the longer-term issues. In particular, it was evident from the discussion around Figure 5 that the local industry needs to capture some of the scale economies that are available in production and marketing. That can be done by the larger operators buying out the smaller and we expect some such rationalisation. However, it can also be achieved by forming long-term *horizontal* strategic alliances among growers and/or among packers. We also need *vertical* alliances between growers and packers. Other arrangements that secure the scale

advantages are also possible. Those alliances can be structured as cooperatives of various sorts or it could be that specialist management firms are contracted to manage production across a number of orchards. Whichever course emerges, and, again, we expect some of both, by getting bigger, players in the local industry would be following leading international trends and PIRSA believes that this is where the greatest potential gains are in prospect.

There is one further point which favours long-term contracting as an effective response in the orange juice sector. A peculiar feature of orange production (and indeed of some other primary produce) is that some of the critical quality characteristics are not evident at the time of sale. The best example of this is the longevity of the fruit. While there are some objective measurements, such as brix, that can be measured at delivery, other quality characteristics are best assured by specifying and monitoring the way in which the fruit is grown. Hence, a retailer who wants fresh fruit of the highest standard or processors who want to know how much of this season's crop will be suitable for juicing need to have established a relationship with players along the production chain. Quality assurances cannot be obtained from transient contracting in the spot market.

All this points to the need for contractual and institutional innovations which ease the difficulties of dealing with the underlying interdependencies. We note that there are some signs that the industry is already moving in this direction, including by engaging in a series of workshops to think through the possibilities of collaboration. We also note that the CBSA has developed a standard terms contract which it encourages growers and packers to use. The Board has also played a role by negotiating access to the US market and is active in providing weekly updates of production estimates to the industry.

One implication of strategic alliance contracting of the desired sort is that the quality systems and other investments required to nurture the

relationship tend to be of an up-front nature and this is a factor, additional to those mentioned above, that increases the economies of scale.

There is a lot of published research on how to build alliances, so this report will not traverse that ground, except to say that it requires excellent communication, transparency in dealings and honouring of commitments. We suggest also that improving and developing links in this way is needed to support the efforts of individual firms and that a critical component of this is to improve information flows in general and forecasting in particular.

4.2 How government can help

The discussion above places particular responsibility on industry to develop adequate responses to the strategic challenges facing the orange juice industry. This does not exempt government. Not only can government support the efforts of industry but also there are some things it can do on its own.

As to supporting the contractual and institutional innovations of industry, government has a role to play in providing the framework to bring the players together. PIRSA has been assisting other sectors in developing strategic plans that aim to focus the joint efforts of industry and government on addressing the issues that are critical to long-term growth that is both profitable and sustainable. It looks forward to working with the forthcoming Citrus Board (under the revised Citrus Industry Act) and other industry organisations to develop a strategic plan for the SA citrus industry. As in other sectors, such a plan will take a realistic look at the priorities for both industry and government.

This report concludes that the way growers amalgamate to extract production efficiencies and the way growers, packers and juice processors collaborate to coordinate supply of high quality fruit and juice to domestic and export customers should be some of the high priorities for the plan.

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Appendix 1(i): Method for Estimating of Trends and Projections in Australian Orange Juice Production and Consumption

Apparent Juice consumption and production (Figure 2, and Appendix Table 2) has been calculated with processed juice production data, and trade data obtained from Australian Citrus Growers. This figure was derived by taking from total production (and what is added or taken from the stock of juice), that part which is sent overseas and then adding what is imported from overseas.¹³

Data on all categories, excluding additions to stocks, from fiscal year 1994 until and including 2003, were sourced from Australian Citrus Growers. 'Additions to stocks' data until and including fiscal year 2002 were sourced from ABARE.

Figures 2 to 5 show the trends in Valencia and Navel production between 1989 and 2005 and projections from 2006 to 2015. The latter are based on trend analysis estimates for each of the market distribution channels.

Data pertaining to the volumes of Valencias and Navels going to the various market distribution channels (Domestic Fresh, Domestic Processing/Juice, Fresh Export markets) and total production of these varieties have been obtained from Australian Citrus Growers.

Projections from 2005 onwards have been based on trend analysis estimates based on the historical series of sales data. Similar calculations were conducted utilising a combination of trends in plantings, grubblings, yields and pack-outs to the various market distribution sectors. It is likely that the scale and composition of sales growth will affect the rate of net plantings and, on reviewing recent market developments these data were subsequently brought into line with the sales based projections. In the case of Navels, this meant

¹³ This can be described by the equation:
Apparent consumption = production of orange juice – exports of processed juice + imports of Frozen Concentrate Orange Juice - additions to stocks of Australian Frozen concentrate orange juice.

estimating the growth likely to result from new plantings to 2005 and by estimating the rate of plantings required (80,000 per annum) to meet the projected Navel sales in 2015. In the case of Valencias, we estimated the rate of net grubblings that will produce the projected Valencia sales from fiscal year 2006 to 2015.

With regard to production and market allocation data, where ACG and ABS data differ, we have preferred that by Australian Citrus Growers because their data are based on tonnages for which levies have been paid while ABS data is based largely on surveys.

Data pertaining to the volumes of Valencias and Navels going to the various market distribution channels (Domestic Fresh, Domestic Processing/Juice, Fresh Export markets) and total production have been obtained from Australian Citrus Growers from fiscal year 1989 until 2005.

All these data are shown in the following section (ii) of this appendix.

Appendix 1(ii): Data for Australian orange juice production and consumption

Appendix Table 1: Total Australian production and market allocations for Navel and Valencia oranges: Actual and Projections

Fiscal Year		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Valencias	Domestic Fresh	64,000	79,000	58,000	36,000	73,000	30,000	80,000	75,000	89,000	80,000	67,000	80,000	87,000	43,000	69,000	34,000
	Processing	230,000	243,000	228,000	234,000	319,000	333,000	326,000	180,000	250,000	211,000	175,000	211,000	233,000	195,000	272,600	147,000
	Fresh Export	30,000	25,000	34,000	56,000	41,000	39,000	42,000	48,000	49,000	44,000	40,000	43,000	49,000	46,900	31,400	18,000
	Total Production	324,000	347,000	320,000	326,000	433,000	402,000	448,000	303,000	388,000	335,000	282,000	334,000	369,000	284,900	373,000	199,000
	Domestic Fresh as a % of total production	20%	23%	18%	11%	17%	7%	18%	25%	23%	24%	24%	24%	24%	15%	18%	17%
	Processing as a % of total production	71%	70%	71%	72%	74%	83%	73%	59%	64%	63%	62%	63%	63%	68%	73%	74%
Fresh Exports as a % of total production	9%	7%	11%	17%	9%	10%	9%	16%	13%	13%	14%	13%	13%	16%	8%	9%	
Navels	Domestic Fresh	90,000	85,000	80,000	80,000	75,000	59,000	83,000	64,000	83,000	86,000	63,000	77,000	90,000	60,000	100,000	90,000
	Processing	40,000	56,000	51,000	57,000	78,000	70,000	70,000	30,000	50,000	50,000	19,000	37,000	58,000	39,000	96,000	51,000
	Fresh Export	6,000	9,000	11,000	16,000	36,000	46,000	50,000	42,000	68,000	73,000	54,000	69,000	98,000	86,000	100,000	67,000
	Total Production	164,000	150,000	142,000	153,000	189,000	175,000	203,000	136,000	201,000	209,000	136,000	183,000	246,000	185,000	296,000	208,000
	Domestic Fresh as a % of total production	55%	57%	56%	52%	40%	34%	41%	47%	41%	41%	46%	42%	37%	32%	34%	43%
	Processing as a % of total production	24%	37%	36%	37%	41%	40%	34%	22%	25%	24%	14%	20%	24%	21%	32%	25%
Fresh Exports as a % of total production	4%	6%	8%	10%	19%	26%	25%	31%	34%	35%	40%	38%	40%	46%	34%	32%	
Total Navels + Valencias	Domestic Fresh	154,000	164,000	138,000	116,000	148,000	89,000	163,000	139,000	172,000	166,000	130,000	157,000	177,000	103,000	169,000	124,000
	Processing	270,000	299,000	279,000	291,000	397,000	403,000	396,000	210,000	300,000	261,000	194,000	248,000	291,000	234,000	368,600	198,000
	Fresh Export	36,000	34,000	45,000	72,000	77,000	85,000	92,000	90,000	117,000	117,000	94,000	112,000	147,000	132,900	131,400	85,000
	Total Production	488,000	497,000	462,000	479,000	622,000	577,000	651,000	439,000	589,000	544,000	418,000	517,000	615,000	469,900	669,000	407,000
	Domestic Fresh as a % of total production	32%	33%	30%	24%	24%	15%	25%	32%	29%	31%	31%	30%	29%	22%	25%	30%
	Processing as a % of total production	55%	60%	60%	61%	64%	70%	61%	48%	51%	48%	46%	48%	47%	50%	55%	49%
Fresh Exports as a % of total production	7%	7%	10%	15%	12%	15%	14%	21%	20%	22%	22%	22%	24%	28%	20%	21%	

	Fiscal Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Valencias	Domestic Fresh	46,359	60,386	59,969	59,555	59,144	58,735	58,330	57,927	57,527	57,130	56,735	
	Processing	157,621	184,437	179,145	174,004	169,011	164,161	159,450	154,874	150,430	146,113	141,920	
	Fresh Export	27,816	27,433	27,208	26,986	26,765	26,546	26,329	26,113	25,900	25,688	25,478	
	Total Production	231,796	272,256	266,322	260,545	254,919	249,442	244,108	238,914	233,856	228,931	224,133	
	Domestic Fresh as a % of total production	20%	22%	23%	23%	23%	24%	24%	24%	24%	25%	25%	25%
	Processing as a % of total production	68%	68%	67%	67%	66%	66%	65%	65%	65%	64%	64%	63%
Navels	Domestic Fresh	93,000	90,636	92,273	93,939	95,635	97,361	99,119	100,909	102,730	104,585	106,473	
	Processing	52,025	58,318	59,674	61,061	62,481	63,933	65,419	66,940	68,496	70,088	71,718	
	Fresh Export	88,022	97,153	101,300	105,623	110,131	114,832	119,733	124,843	130,171	135,727	141,519	
	Total Production	233,047	246,108	253,246	260,623	268,246	276,126	284,271	292,691	301,397	310,400	319,710	
	Domestic Fresh as a % of total production	43%	36%	35%	35%	34%	34%	33%	33%	32%	32%	31%	
	Processing as a % of total production	26%	24%	23%	23%	23%	23%	23%	23%	22%	22%	22%	
Total Navels + Valencias	Domestic Fresh	139,359	151,022	152,242	153,494	154,778	156,097	157,449	158,835	160,257	161,715	163,208	
	Processing	209,646	242,756	238,819	235,065	231,491	228,093	224,869	221,814	218,926	216,201	213,638	
	Fresh Export	115,838	124,586	128,508	132,609	136,896	141,378	146,061	150,956	156,071	161,414	166,997	
	Total Production	464,843	518,364	519,569	521,168	523,166	525,568	528,379	531,606	535,254	539,330	543,843	
	Domestic Fresh as a % of total production	32%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	
	Processing as a % of total production	47%	46%	45%	44%	43%	42%	41%	41%	40%	39%	38%	
Total Navels + Valencias	Domestic Fresh	139,359	151,022	152,242	153,494	154,778	156,097	157,449	158,835	160,257	161,715	163,208	
	Processing	209,646	242,756	238,819	235,065	231,491	228,093	224,869	221,814	218,926	216,201	213,638	
	Fresh Export	115,838	124,586	128,508	132,609	136,896	141,378	146,061	150,956	156,071	161,414	166,997	
	Total Production	464,843	518,364	519,569	521,168	523,166	525,568	528,379	531,606	535,254	539,330	543,843	
	Domestic Fresh as a % of total production	32%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	
	Processing as a % of total production	47%	46%	45%	44%	43%	42%	41%	41%	40%	39%	38%	
Total Navels + Valencias	Domestic Fresh	139,359	151,022	152,242	153,494	154,778	156,097	157,449	158,835	160,257	161,715	163,208	
	Processing	209,646	242,756	238,819	235,065	231,491	228,093	224,869	221,814	218,926	216,201	213,638	
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	Total Production	464,843	518,364	519,569	521,168	523,166	525,568	528,379	531,606	535,254	539,330	543,843	
	Domestic Fresh as a % of total production	32%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	
	Processing as a % of total production	47%	46%	45%	44%	43%	42%	41%	41%	40%	39%	38%	
Total Navels + Valencias	Domestic Fresh	139,359	151,022	152,242	153,494	154,778	156,097	157,449	158,835	160,257	161,715	163,208	
	Processing	209,646	242,756	238,819	235,065	231,491	228,093	224,869	221,814	218,926	216,201	213,638	
	Fresh Export	115,838	124,586	128,508	132,609	136,896	141,378	146,061	150,956	156,071	161,414	166,997	
	Total Production	464,843	518,364	519,569	521,168	523,166	525,568	528,379	531,606	535,254	539,330	543,843	
	Domestic Fresh as a % of total production	32%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	
	Processing as a % of total production	47%	46%	45%	44%	43%	42%	41%	41%	40%	39%	38%	
Total Navels + Valencias	Domestic Fresh	139,359	151,022	152,242	153,494	154,778	156,097	157,449	158,835	160,257	161,715	163,208	
	Processing	209,646	242,756	238,819	235,065	231,491	228,093	224,869	221,814	218,926	216,201	213,638	
	Fresh Export	115,838	124,586	128,508	132,609	136,896	141,378	146,061	150,956	156,071	161,414	166,997	
	Total Production	464,843	518,364	519,569	521,168	523,166	525,568	528,379	531,606	535,254	539,330	543,843	
	Domestic Fresh as a % of total production	32%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	
	Processing as a % of total production	47%	46%	45%	44%	43%	42%	41%	41%	40%	39%	38%	
Total Navels + Valencias	Domestic Fresh	139,359	151,022	152,242	153,494	154,778	156,097	157,449	158,835	160,257	161,715	163,208	
	Processing	209,646	242,756	238,819	235,065	231,491	228,093	224,869	221,814	218,926	216,201	213,638	
	Fresh Export	115,838	124,586	128,508	132,609	136,896	141,378	146,061	150,956	156,071	161,414	166,997	
	Total Production	464,843	518,364	519,569	521,168	523,166	525,568	528,379	531,606	535,254	539,330	543,843	
	Domestic Fresh as a % of total production	32%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	
	Processing as a % of total production	47%	46%	45%	44%	43%	42%	41%	41%	40%	39%	38%	

Data from fiscal year 1989 (1988-1999) to 2004 (2003-2004) was sourced from Australian Citrus Growers Incorporated, and relates to sales data for which levies have been paid.

Figures in bold are PIRSA estimates. PIRSA estimates of total production for both Navels and Valencias in fiscal year 2005 were derived by multiplying estimated yields per tree with estimated numbers of bearing trees (estimated bearing trees in 2005 based on a combination of data obtained from the ABS, including numbers of trees, numbers of bearing and non-bearing trees from 1989 until 2004, and estimates of net plantings and grubblings).

For Navels, the percentages of total production allocated between the various market channels from fiscal year 2001 to 2005 are PIRSA estimates. For Valencias, PIRSA have made similar estimates for fiscal year 2005 based on ACG forecasts.

All figures from fiscal year 2006 onwards are projections. These projections were made by undertaking a trend analysis on the historical series of sales and export data.

Appendix table 2: Total Australian orange juice production and consumption: Trends and projections

Fiscal Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Juice Production	403,000	396,000	210,000	300,000	261,000	194,000	248,000	291,000	234,000	368,600	198,000	218,214
Apparent Consumption	396,000	441,744	390,580	384,710	414,098	511,216	459,935	477,567	489,771	667,040	450,091	609,513
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		
	245,871	242,323	238,977	235,830	232,878	230,119	227,551	225,171	222,977	220,968		
	621,247	644,510	669,263	695,593	723,592	753,359	784,994	818,607	854,310	892,223		

Apparent juice consumption (Appendix table 2, and Figure 2 (main document)) and production has been calculated with processed juice production data and trade data obtained from Australian Citrus Growers Incorporated. Apparent juice consumption was derived with the following equation: (Apparent consumption = production of orange juice – exports of processed juice + imports of Frozen Concentrate Orange Juice – additions to stocks of Australian frozen concentrate orange juice). This formula was applied from ABARE calculations of apparent consumption.

Appendix 2: Industry views

(Recorded by John Fennell)

PIRSA undertook to consult with industry bodies, packers and processors of Valencia oranges as part of doing an economic analysis of the citrus juice industry.

A series of interviews was conducted to determine current issues, gather market information and provide some base data for a production economics study in the Citrus Juice industry. The interviews were conducted between 27-29th June 2005.

The interview series produced a consistent view of current supply and pricing issues in the Valencia markets.

Initial consultations occurred with the Citrus Board of SA to determine which companies could provide a broad perspective on the issues. Discussions were also held with Hugh Cope, former CEO of Australian Citrus Growers and the Australian Citrus Industry Council.

Nippy's Fruit Juices (Jeff Knipsel)

Supply

This is a family owned company.

Back-to-back crop failures have caused supply problems.

Growers do not have the view that they grow Valencia's for juice. They believe that they are growing for packing fruit at better price, however in reality much of the fruit goes for juicing. A lot of Valencia trees have been removed or reworked with grafted Navel.

The Valencia market has a juice base price in it. Sheds compete for packing fresh domestic fruit down to a point where the juice price becomes the base in the market. However juice price does provide a safety net.

The last season has seen an estimated 250,000 t national crop. Packing companies have contracts with juice companies supplying fruit unsuitable for packing. These companies have seen a short fall of Valencia fruit early in the season due to prices offered and therefore had difficulty supplying the juice contracts for the 2005 season. In response juice companies sourced fruit as concentrate from Brazil to protect their markets from short supply. By the time Valencia juice fruit was available prices had eased and the availability and size of available fruit had increased substantially presenting an oversupply situation and a substantial drop in prices received for uncontracted fruit.

Only small quantities of Navel fruit are used for juice as it goes bitter and is especially undesirable for the Nippys product. However there is a window in late August-early September when Navel juice is acceptable.

Nippys commonly purchased fruit based on a door price and did not use a grower contract. Their business was relationship based and they maintained a strong empathy with growers.

Nippy's did not consider that small growers were a problem. There were ways in which small growers could incorporate cost efficiencies such as the use of contractors. Sourcing from fewer larger producers did reduce time and costs but there was a risk mitigation opportunity by spreading intake from a larger group of growers.

Issues

Nippy's does not believe that the current problems require government intervention. The market is supply and demand driven and will always find a way around controls..

Crop estimates need to be improved

Processors need to determine fruit quantities required and schedule of intake.

Branding is an important issue for Nippys as they produce primarily a fresh product without the use of concentrate.

Labelling awareness is an important issue to ensure customer driven responses to the product. Juice source and type is required

Lochert Bros (Robert Lochert, Stephen Morton)

Supply

This company packs fresh fruit sourced from local growers and sells to domestic and export markets. The company supplies the majority of its juice quality fruit to Crusta Fruit Juices Pty Ltd, a company previously owned by Lochert Bros.

A general discussion confirmed that the Productivity Commission 2002 Report effectively highlighted issues facing small growers. However there has been little industry action or acknowledgement of some of its recommendations.

Most Valencia growers average pack-out rates of around 30% whilst others can achieve greater than 50%. Growers whose fruit is not packed for fresh markets depend on processors to take their fruit either under a contractual arrangement or outside of contract where selling their fruit is based purely on market forces (supply vs demand). Fresh juice sales have declined by approximately 6% over the last year which has contributed to processors lower juice fruit requirements.

The delayed harvest and increasing fruit size of the crop combined to make the forecasted crop estimates lower than actually achieved. The original

estimates were not that wrong, rather delayed harvest and seasonal sizing increased fruit diameter.

Early harvesting of Valencias was the best opportunity for uncontracted growers during the 2004/05 season. Many uncontracted growers delayed harvest believing that higher prices would be paid later in the season. This left some uncontracted growers without a sale for their fruit.

The contracted Valencia growers supplying Lochert Bros were not raising any concerns over this year's sales. A higher crop is anticipated next season and growers without contracts may be disadvantaged.

Issues

The food safety programs were seen as important for industry to avoid risks from anyone cutting corners to reduce costs and ensuring that markets maintained their confidence in Australian citrus.

Better intra-season forecasts are needed that take picking pattern, marketing (fresh and processing) and seasonal conditions into consideration.

Crusta Fruit Juices (Richard Howell)

Supply

The company is now owned by Coca-Cola Amatil and its continued investment into the juice industry is in line with its growth expectations for this sector. Crusta produce chilled juices (citrus and other fruit blends) and a sister company, Pacific Beverages in Melbourne, produces the longlife products.

The two previous light crops were again highlighted in the interview with the possibility of a heavy one in the coming season. The forecasted short supply this season resulted in imports of concentrate and also import of single strength juice to maintain single strength products in the market. These imports were necessary following the initial crop forecasts.

The biennial bearing nature of citrus is a major problem to processors that count on getting supplies. Changes to the composition of product (especially country of origin) adds complications to the labelling requirements.

Crusta uses direct supply from the packing house as it has no bin or storage infrastructure.

Crusta has contracted fruit supply from Lochert Bros and down the chain to growers (back-to-back contracts).

Oil extraction was discussed as an option but was not currently considered viable for this plant. Like most other plants the waste products are disposed of for stock feed or dumped..

Issues

- Forecasting need to be improved
- The industry may need to consider longer term contracts

BP Fruit Packers (Chris Barry)

Supply

In the early part of the past season growers believed that they could achieve \$400/t and were not keen to harvest at cheaper prices. Prices of \$300 were available for Valencia's in this period supported by packing for export.

Expectations of high price were driven by anticipated shortage of supply to meet demand.

<u>Season</u>	<u>Tonnage</u>
2002	373 000
2003	199 000 (about 170,000 tonnes short of 2002)
2004	220 000 (about 150,000 tonnes short of 2002)
2005	350 000 (predicted)

A clear message was that market specifications for fruit should be used to differentiate it as being for juice or for packing fruit. To be profitable the packing % needed to be greater than 50%. Packing charges varied from \$5-7 depending on packing type and box used. Growers should only pick what can be sold.

Smaller growers must concentrate on producing premium fruit with high quality management. The group having significant problems were the operators of orchards around 15 to 20 ha size, the operations being too large for good part-time input and too small for full-time employment.

The consignment system tends to result in larger volumes of fruit on the market. No contracts are offered by BP Fruits but they do have a Berri contract.

BP Fruits were concerned about the negative media coverage regarding unsold uncontracted fruits in the past season. They indicated that they had advised the author that the message was misleading and that it had also negatively impacted on fresh fruit sales.

BP Fruits consider that there is a big opportunity for export of Valencia's to Japan in the coming season and that many packers will look to increase their market share in Asia.

BP Fruits aim to establish a good relationship with their growers and advise them of market conditions to be able to achieve the best price for all parties. Maintaining a strong loyalty base is an important objective.

BP Fruits were in favour of contracts and suggested that Minimum Price Contracts might be more flexible than Fixed Price Contracts

Berri Limited (Richard Keightley) and in Melbourne by videoconference (Kym Baldock, Colin Kop)

Supply

Berri Limited is the largest processors and manufacturer of Fresh Juice products in Australia, all policies and strategies are developed from a National perspective.

Berri Limited signed supply contracts during October/November 2004 and this included off-run from packing sheds. In addition Berri contracted fruit from Sunraysia and MIA Packers as well as the MIA growers.

During the period October to March there is normally sufficient off-run fruit from the packing operations to meet Berri's requirements. At other times of year Berri Limited is dependant on their contracted supplies to meet market needs.

To achieve a balanced Valencia supply season fruit needs to be packed for the fresh market as well as supplied to processors for fresh juice. In the past season late season Navel Fresh market fruit overflowed past the traditional start to the fresh Valencia market. However there were market opportunities for Valencia but grower would not pick as a consequence packing opportunities for Valencia's were missed and that fruit continued to grow, exacerbating the over supply at the end of the season..

When the crop forecast for the current crop of around 216 000 t nationally was announced in March 04 it was not enough to meet fresh juice market requirements and therefore concentrate and NFC was imported. The imports were assisted by the favourable exchange rate.

The factors that caused the non-utilisation of fruit this season were mainly:

Predictions that there would not be enough Australian product prompted juice manufacturers to cover their requirements with imported resources.

- The price of fruit increased during the contract negotiating period. This price increase could not be passed on as the consumer would not pay in excess of \$5.00 for a 2 litre pack of premium Fresh Australian Orange Juice. This caused this sector of the market to lose volume.
- The secondary sector which used concentrate to cover the lack of local juice was benefited by the low cost of imported concentrate but suffered for the loss in quality.
- During this short supply season there was little or no promotional activity for 100% Premium Fresh Australian Orange Juice.

- Growers were playing the market by holding fruit, however when the crop estimate was upgraded and the processors had committed to Imported resources the local requirement had been reduced. This resulted in a decline of price for uncontracted fruit and ultimately an excess of fruit that was not taken up by processors.

When it became apparent that there was an over supply of local fruit Berri Limited change its product formulation strategy to consume more local fruit. As a result of these factors all of Berri contracts were honoured and uncontracted fruit was taken up but at a lower price. This also resulted in a stock of imported resources still to be used.

Larger growers are more able to withstand this price easing.

Berri has used contracts to support their business and believes more packers will use back to back contracts to support their Juice Contracts with Processors.

The juice market needs to be rebuilt and consolidated by;

- Managing Valencia crops in line with contracts
- New varieties to extend juicing season
- Consolidation of farms to create more efficient farmers.
- Management of fruit resources that provide a consistent tasting products. (formulation)
- Navels can be used in juice but debittering needed.

Berri are concerned as the available bay size for juices in Coles and Woolworths has been reduced.

Issues

- Better crop forecasting is needed.
The fresh market flow of fruit and sizing effect to factored into the ongoing calculations.
- Crop management to bring supply and demand more into line.
- More defined products with fresh and concentrate products
- There is at least a 30% difference between growers in their production efficiency and there is a tendency that the prices are being influenced by less efficient growers.

Yandilla Park (Steve Burdett, Richard Roberts)

Supply

Yandilla Park is a major supplier to Berri and supports these with back-to-back contracts to growers to ensure supply. The base level for a juice contract is based on yield and packout. Future contracts include scheduling with a much higher percentage from the early part of the season.

The Riverland generally supplies pre-Christmas fruit and then supplies for Berri are obtained from the MIA.

Valencia fruit left to hang promotes alternate bearing and so reluctance to harvest early in the quest for improved prices can negatively influence the following season's returns.

The timing, quality and colour of Australian fruit continues to be Australia's primary competitive advantage. In addition Australia can provide coordinated and guaranteed programs not matched by other countries. Although South Africa has higher yields the fruit colour and taste is generally inferior.

The grower coordination resources put in place by Yandilla to keep their growers informed are substantial.

Issues

- The coordinated marketing to the USA is a strength for the industry
- Increasing production in the Northern Hemisphere will impact on Australia's export markets and may result in greater availability of locally produced Navel's being available for juice.

Appendix 3: Method of Crop Forecasting used by the Citrus Board of SA

The issue of the accuracy of crop forecasts was raised by most of the commercial companies. Therefore a right of reply was established to create balance in the discussion.

The Citrus Board of South Australia provided the following information.

The procedure for doing crop forecasting is based upon an agreed methodology:

Citrus Board of SA Crop Estimate Formula

1. Each year in January a review of tree numbers is done to work out a percentage of trees for monitoring throughout the season. Trees are broken down in area, tree age, variety categories.
2. In January density counts are carried out and trees are tagged and the measurements of fruit numbers begin. The trees are monitored until they are harvested except for Valencia's which we monitor until the end of October.
3. When all information is collated a meeting is called between the Citrus Board of SA, packers and processors. Estimate sheets are sent out to packers to compare the survey estimate v packer estimates and these figures are then discussed at meetings in March, May, August and October or November depending on the Valencia season. The figures are reviewed at all these meetings and if changes are made industry is notified immediately.

Data from the past season was as follows

**Appendix Table 3: Citrus Planting Statistics
January 2005**

Variety	Total Non Bearing Hectare	Total Bearing Hectares	Total Hectares
Winter Navels	709	1195	1904
Summer Navels	387	509	896
Valencia	68	2191	2259

Tree planting statistics are conducted on a yearly basis. South Australia is broken into 6 areas, Renmark, Waikerie, Berri, Loxton, Adelaide Hills and Mypolonga.

A Tree review is conducted each January and from this we determine monitoring sites for that area. Density and measurements are conducted in

January, measurements are then taken in the last week of each month from January until October in each region.

Navels

Fruit density counts for navels were up on last season to 6.3 fruit per frame and with the predicted average growth rate the season's projected estimate is 70,000 tons.

This estimate will be revised in May and industry will be notified on any significant changes.

Valencia

The Valencia density counts are up on last seasons to 7.8 and with the predicted average growth rate the projected estimate is 100,000 tons. A revised estimate for Valencia's will be conducted in August and industry will be notified of any changes.

The accuracy of estimates is shown from historical data of actual vs estimated yields.

Appendix Table 4: Average Fruit Size January 2001 to 2005

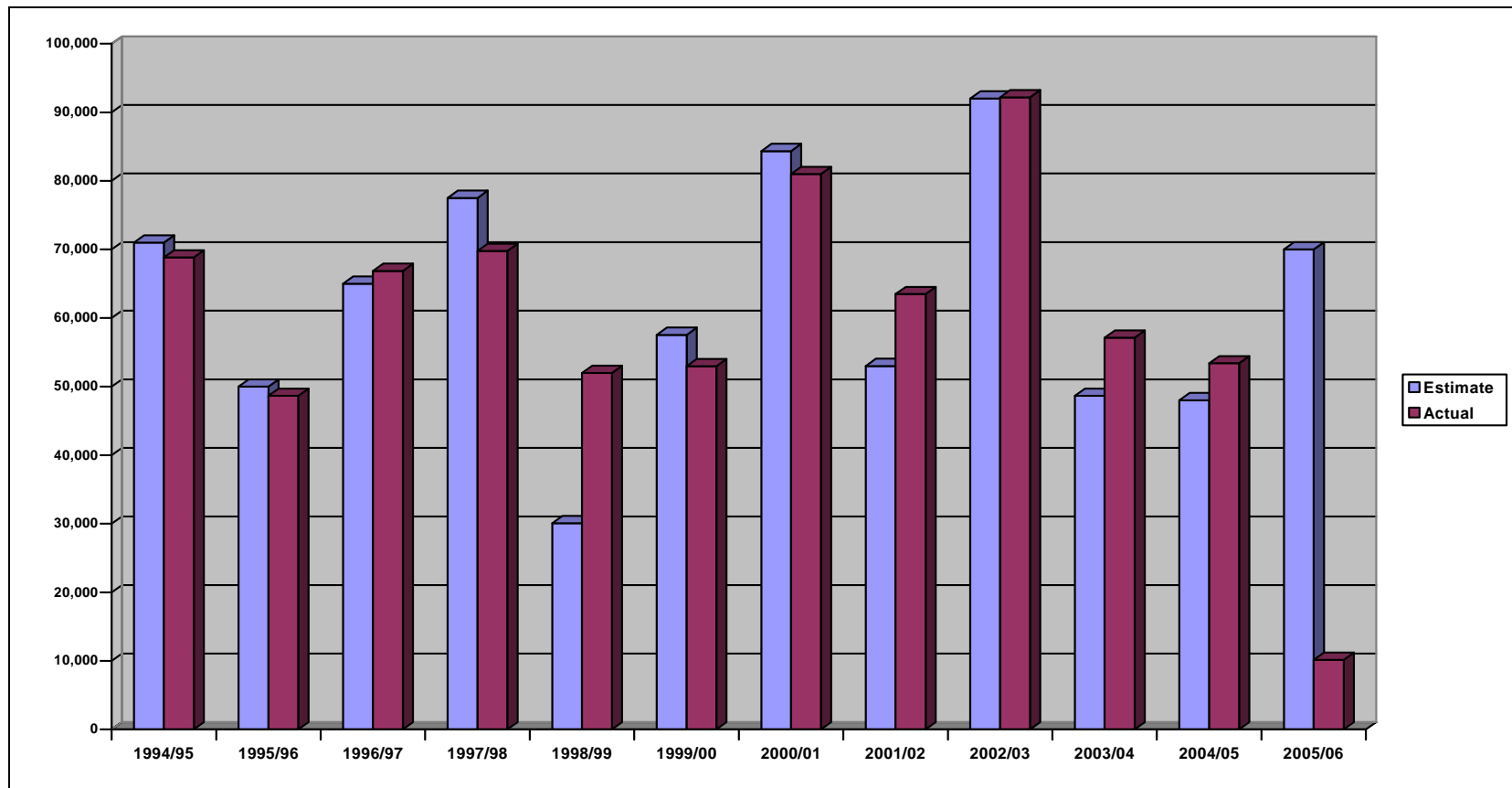
VARIETY	2001 Average	2002 Average	2003 Average	2004 Average	2005 Average	5 Year Average
Navelina			55.4	53.7	56.2	55.1
Washington	49.2	47.6	52.2	48.3	52.2	49.9
Late Lane	49.2	46.4	51.2	48.5	51.5	49.3
Valencia	41.8	39.8	48.3	45.9	44.7	43.6

In most seasons the crop forecasting provides a good estimate of yields and this is demonstrated in Appendix Tables 5 and 6 and in the accompanying graphs.

Appendix Table 5: Navel production 1994/95 to 2005/06

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Estimate	71,000	50,000	65,000	77,500	30,090	57,535	84,348	53,000	92,000	48,654	48,000	70,000
Actual	68,822	48,653	66,874	69,765	52,000	52,967	81,000	63,491	92,188	57,133	53,398	10,140
Density	7.5	5.2	7.4	8.4	3.3	5.6	9.1	5.4	9.2	5.3	5.0	6.1

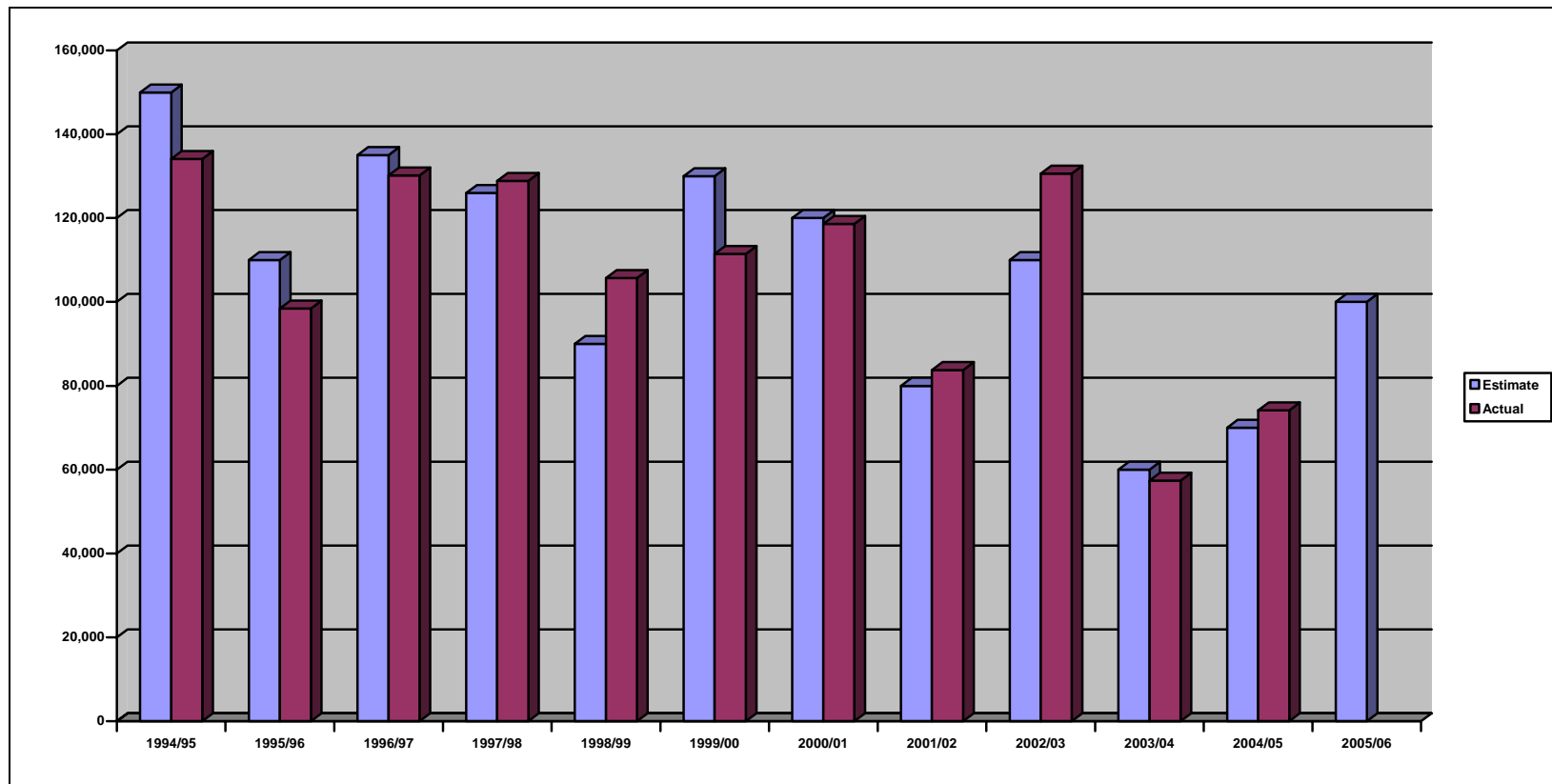
Note: 2005/06 harvest is incomplete.



Appendix Table 6: Valencia production 1994/95 to 2005/06

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Estimate	150,000	110,000	135,000	126,000	90,000	130,000	120,000	80,000	110,000	60,000	80,000
Actual	134,129	98,403	130,197	128,848	105,706	111,494	118,600	83,744	130,595	44,039	40,739
Density	6.5	5.4	6.2	5.8	4.0	5.9	7.9		10.4-	6.9	7.8

Note: 2005/06 harvest is incomplete.



Appendix 4: The Potential Threat of China's Citrus Industry to South Australia's Orange Industry

China is emerging as a major trading nation and its export competitiveness is threatening a wide range of industries. China is the 3rd largest producer of citrus fruits and the question arises as to whether this will constitute a threat to the local citrus industry over the medium term. This paper provides an overview of current trends and concludes that the threat to South Australia will be relatively minor.

Historical Trends and Current Production and Trade of Citrus Products in China

China has a very long history of involvement in citrus production, going back at least 2000 years. Modern growth of the industry can be divided into 3 phases:

- 1950s-70s: moderate growth at 5% pa but from a small base to 300Kt by mid 1970s
- 1980s-early 90s: much faster growth in production (25%pa); relaxing controls; some increase in domestic consumption
- mid 1990s - : adjustment phase; slower growth; so-called "controlling acreage, adjusting structure, improving quality and promoting profit" period; changes in varieties (especially move to oranges); and, consolidation of production to Yangtze River areas, based on World Bank funding.

Citrus matures in China from October to January with October-December being the high point.

Total citrus production in China is estimated at 10 million tons in 2003, approximately that reported in 1999 by the Xinhua News Agency. Estimates for 2005 vary from 12.9 million (USDA) to 15 million tons (Chinese Intfruit).

There are reasons to expect a substantial increase in Chinese citrus production over the medium term:

- it is estimated that 30% of total acreage (1.3 million ha) are young trees not yet fully in fruit
- while yields in China are currently only 7.8 T/ha, half the global average, they are rising with the application of new technologies
- China is undertaking water reforms and developing water infrastructure which is likely to increase the amount of irrigated land substantially.

These factors are all accelerating growth and China is the only one of the big 5 citrus nations (Brazil, US, China, Mexico and Spain) which is growing rapidly. It should be noted that the 2003 estimate of 12 million tons within 5 years has already been surpassed (but note that Chinese data for food production and consumption are considered to be problematic).

It is critical to realise that only a small, albeit growing proportion of China's citrus production is made up of oranges. The changing make up of China's citrus production is shown in the following table:

Table 1: Varietal Composition of China's Citrus Production (%)

Variety	mid 90s	2003
Mandarins	65	55
Sweet oranges	20	30
Pommels and kumquats	15	10

Source: Xinlu (2003) *nb unclear if data by value of volume*

China exports only 2% of current output, amounting to 200K tons pa. 90% of exports are mandarins and most go to Canada and Russia.

China imports sweet oranges and juice concentrate from the US, Brazil, Australia and South Africa.

The Future of Orange Juice Production and Consumption in China

China produces very little orange juice. The local juice market is small but growing quickly (at about 12%pa) but the consumption level (0.5 l/capita pa) is still well below the global average. Chinese orange juice is made predominantly from imported concentrate. Current Chinese policy is focussed on improving supporting infrastructure, both storage facilities for fresh fruit and processing capacity for juice.

The clear expectations are that Chinese consumption of oranges and juice will both rise over coming years and that an increasing portion of local juice consumption will come from locally produced concentrate and fresh juice. Of course, it is possible that there will also be growth in trade so that Chinese exports of fruit and juice might increase along with Chinese imports. However, it seems reasonable to assume that if this were the case, China would meet its domestic juice consumption requirements predominantly from concentrate and relatively low quality juice, sourced predominantly from locally producers, while using the few high quality, domestic sources for export to high value markets such as Australia.

Will Chinese Exports Threaten Local Juice Producers?

Although there are considerable uncertainties surrounding the underlying data, PIRSA believes that China will not be a primary source of import competition for Australian juice producers over the medium term, either at home or in our most valuable export markets. The reasons for this are that:

- China remains focussed on citrus varieties other than sweet oranges¹⁴
- The short supply season in China increases the cost of juicing operations
- China has limited orange juice processing facilities and this will remain a constraint over the medium term
- Growth of domestic consumption will take up most of the likely increase in China's orange production, including oranges for juice¹⁵

¹⁴ The USDA believe that "large supplies of juicing oranges are simply unavailable"

- International pressure in response to China's growing trade surpluses, especially from the US, suggests that a substantial revaluation of the yuan is likely over the medium term. This will reduce China's export competitiveness.

The USDA believes that "it will take years before sizable orange juice volume is produced" (DoA, 2005) in China. Having said that, it is possible that China might make in-roads into some of Australia's non-premium export markets, particularly in countries neighbouring China. However, Brazil currently dominates global orange juice trade but is suffering declines in production. This will open up opportunities for Chinese and Australian exporters which should reduce competition between them.¹⁶

¹⁵ One source makes the same point with regard to Asia generally, that "Citrus production and consumption in Asia ... will be supported primarily from domestic production" (Spren, 2003).

¹⁶ Note that Brazilian production fell in recent years due to disease infestations.