To: Senate Economics Legislation
Inquiry into the Truth in Labelling Bill

Dear Committee,

During our appearance at public hearing on the 30th October 2009, two Questions on Notice were addressed to Riverina Citrus.
The first referred to the Debittering process. My research has revealed some broad information, but the issue remains a commercial prerogative. I submit –

The Production of Fresh Citrus Juices

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Introduction

The production of orange juice has undergone several cyclical changes since the inception of the citrus processing industry at the beginning of the twentieth century.

The first juice product was from hand squeezed oranges. It had a very short shelf life and a local distribution radius. Consumption was close to the point of production and very seasonal.

In the 1940s a giant step forward was made with the development of automated juice extractors which greatly increased the volume of juice available and lowered its cost. This, coupled with new processing technology, led to the rapid development of a processing/concentrating industry which allowed the consumption of orange juice to continue throughout the year without the cyclical interruptions of seasons and fruit availability.

It is from this point that today's world production and trade of FCOJ (Frozen Concentrate Orange Juice) has grown and upon which the world's juice converting industry has been based.

The 1990s Period

Until now, Australia has been a mass consumer of reconstituted FCOJ and not of fresh orange juice from retail outlets. Those who have wanted the fresh taste have hand squeezed their own oranges faithfully each morning with a dedication akin to those who punish the body with jogging.

Today the demand for a fresh orange juice has suddenly arisen as a part of the renewed consciousness of eating and living healthily. Australians are rediscovering the FRESH taste of orange juice, exchanging reconstituted juices for those which are freshly sqeezed.

Fresh Juice Production

Fresh juice production falls into several categories, each with its peculiar characteristics, which offer the consumer a number of choices. The common denominator here is that fresh juice is a more expensive product than those juices made from concentrate, not only because of the technical problems incurred but also because much of our concentrate is imported at a low price from nations which both subsidise the product and offer local people minimal standards of living.

In an effort to extend shelf life, fresh juice can be:

(i) pasteurised, often with resultant burnt tastes permeating the product;

(ii) preservatised;

(iii) both (i) and (ii) together;

(iv) chilled only.

The Hillston Operation

The Outback Juice Company at Hillston has taken a unique approach in an effort to gain its market share and acceptance, producing only a freshly squeezed product to which no external processes are applied or preservatives added.

The juice produced under these conditions is unique because it is still a living product which in turn limits its "life". This has required an innovative approach to juice production, as a minimum shelf life of 7 days is required for commercial acceptance.

The juice produced is a mixture of living cells, enzymes, volatile flavours and microorganisms. To maintain its inherent quality, both the respiration/ oxidation rate and the development of microorganisms and enzyme action must be inhibited. Fortunately this can be achieved with sustained low temperatures at all points of production.

The Process

Fresh oranges are placed in a cool room and chilled to 3oC. This is an expensive process considering only 50% of the chilled orange is juice.

The oranges are then run across a sorting table where substandard fruit is rejected. This is essential as a single bad orange can spoil a batch of juice, as opposed to those preservatised/pasteurised products which have a high tolerance of contaminated fruit.

After sorting, the oranges are washed and sanitised and proceed directly to the mechanical juice extractor which requires special adjustments to minimise the amount of albedo entering the juice (causing premature bittering).

The freshly squeezed orange juice is then stored in a refrigerated vat, in which the

temperature is further reduced to 2oC.

Aseptic containers are direct filled with the chilled juice, palletised and placed into cold storage for despatch in refrigerated transport. All juice is then placed onto the retail shelf, up to 1000 km away, within 24 hours of squeezing.

As long as the product is treated by consumers in a manner similar to milk, a shelf life of 7 to 9 days is achievable.

Special Considerations

There are several special considerations necessary to successfully produce this sensitive product - all resolve around hygiene. All machinery which contacts the juice product must be sanitised with meticulous care both before and after each production run to prevent the accumulation and development of bacterial and yeast cultures. Regular bacteriological tests can identify an unseen problem area developing.

The entire factory area must be regularly sanitised to prevent the accumulation of yeast spores, bacteria and dust. In a similar manner the juice extractor must be cleaned of all peel and juice debris after each use to prevent yeast colonies from forming.

Waste peel and orange oils are disposed directly into trucks. This product is then fed to sheep.

Other Developments

New developments hold the promise of improved product and prolonged shelf life. Some of these are:

(i) deoxygenation of the juice and air space in the bottle to reduce the rate of product oxidation;

(ii) debittering of navel juice (removal of limolin), without pulp separation and pasteurisation. This will allow the use of fresh navels throughout winter and thus offer a better quality winter juice;

(iii) deacidification of juices to improve the taste of early season juices; essential, as most Australians, while having a sweet palate, decline the added sugar option to modify the taste. In a similar process to debittering, this is traditionally performed upon pulpless, pasteurised juice causing loss of fresh aromas and imparting a burnt sugar taste into the juice. A process is sought to achieve the above results using resin bead technology on bulk, pulpy juice;

(iv) new pasteurisation techniques are being investigated which will, with minimal temperatures, inactivate both enzymes and microorganisms, whilst maintaining the original flavour.

The fresh juice industry, whilst still in its infancy, is at the centre of innovative and

exciting technological changes which will produce a better product.

The Second question requested details on the costings of Concentrate relative to domestic juice. I would like to submit the following research on this subject from Bruno Coelho of the SA Government. Some of the figures are 4 years old, but the current high AUD probably reinforces the conclusion that "**imported FCOJ is still far cheaper than locally produced product".**

PIRSA Horticulture

Juice Import Study

The Price of Frozen Concentrate Orange Juice

Introduction

The price of Frozen Concentrate Orange Juice (FCOJ) is one critical determinant of the price for Australian juicing fruit. This paper collects imported FCOJ price data and verifies them by means of a number of alternative estimation methods to estimate the competitive price for local juicing fruit.

Consultations done to collect the data

Discussions were done with

- Australian Citrus Growers Inc
- 1 Australian importer of juice concentrates
- 4 Brazilian exporters of orange juice concentrates

Analysis

Firstly, landed FCOJ price data collected by industry are presented. Secondly, checks are performed by comparing those price data against

- information previously held by PIRSA
- customs data
- FOB prices for exports from Brazil
- the so-called folding equation used by Berri Australia P/L.

Thirdly, using estimates of the cost of processing in Australia, an approximate competitive price for local juicing oranges is provided.

Table 1 below shows landed costs of imported from Brazil into Australia, as provided by the Australian Citrus Growers (ACG). The values represent average prices calculated from imported quantity and value data. Prices are provided for Brazil, by far the largest source, and for imports from all sources. Figures 1 and 3 which follow show changes in

the landed FCOJ price since 2000.

Table 1: Unit price of imported Frozen Concentrate Orange Juice into Australia

Year	2000		2001		2002		2003		2004	
	($A/KG)	$A/Litre	($A/KG)	$A/Litre	($A/KG)	$A/Litre	($A/KG)	$A/Litre	($A/KG)	$A/Litre
Brazil	2.12	2.81	1.62	2.1	1.62	2.14	2.22	2.94	1.68	2.22
Total	2.12	2.81	1.65	2.2	1.66	2.20	2.19	2.90	1.68	2.22

Source: Australian Citrus Growers

Notes:

- Data obtained from ACG and collected via ABS *1*
- Data includes duties and charges
- $A/Litre = per litre of concentrate (not per litre of single strength)
- Assumption: FCOJ is at 66 Brix
- Assumption: gravity of 1.3239 used to convert kilograms into litres of concentrate *2*

1 Data is provided to the ABS by the Australian Federal Customs authority, which compiles a comprehensive list of statistical information on all goods that are imported into Australia. In reference to this enquiry, all data including: value, weight/quantity, origin, mode of transport etc are collected by customs. Customs runs automated checks on the data it is provided, and all data is forwarded to the ABS on a daily basis.

Figure 1: FCOJ unit price per Litre

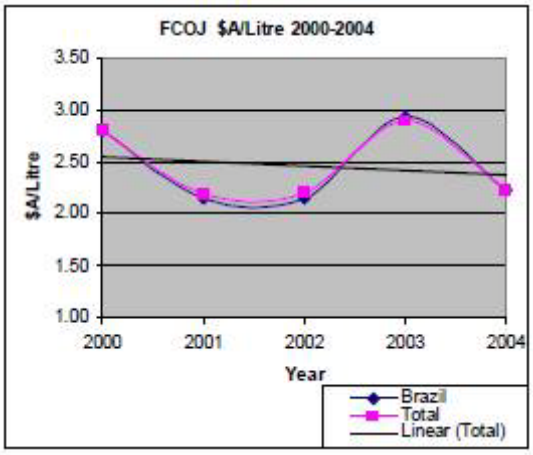
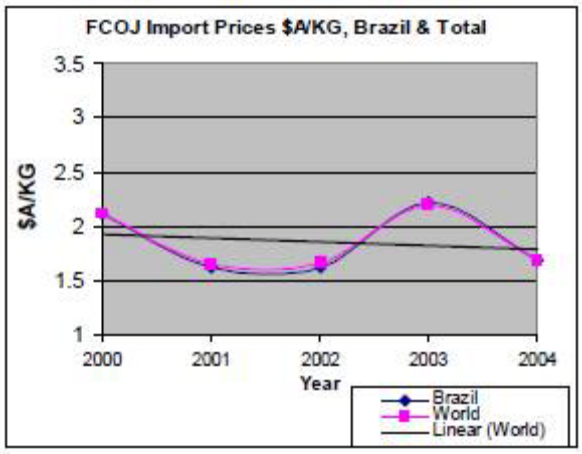


Figure 2: FCOJ unit price per kilogram



As we can see from figures 1 and 2, the landed unit price in Australia of FCOJ from Brazil has risen and fallen over the last 5 years, but is on a downward trend. Factors influencing the oscillations include changes in the value of the Australian dollar and industry-specific issues in Brazil.

The accuracy of the estimates in Table 1 can be partially confirmed from price data previously given to PIRSA by Australian processors. Those data are $A1.959/litre of concentrate (66 Brix FCOJ) and $A1.48/kilogram of concentrate (66 Brix FCOJ). The minor differences between these data and those in Figures 1 and 2 might be due to:

- differences among prices offered by different companies
- quality differences (intrinsic or otherwise)
- differences in quantities imported providing different volume discounts.
- the specific time of purchase and the associated exchange rates
- movements in shipping and freight costs
- the state at which the FCOJ was landed.

ABS customs data further support the accuracy of the data in Table 1 and Figures 1 and 2. They also show that unit price varies by state of final destination.

Table 2: Imported FCOJ from Brazil by destination ($A/Kg) – May 2003

State of Final Destinat	$A/KG
New South Wales	2.62
Victoria	1.97
Queensland	1.77
South Australia	1.63
Western Australia	2.14
Tasmania	1.52
Total	2.15

2 This is the measure provide by processors.

The estimates in Table 1 are also supported by Table 3 below which displays quantities and FOB values for FCOJ exported from Brazil to Australia and the world. The differences between these values and those stated in Table 1 constitute the costs associated with ocean freight, insurance clearing and duties. Industry sources place those costs at between $A0.50-0.70/Kg concentrate (66 Brix), meaning that the landed price in

2002-03 was between $1.70 and $1.90 ($1.60 and $1.83 in 2003-04). Those values are consistent with the estimates in Table 1.

Table 3: FCOJ Exported from Brazil (KG and US$ FOB)

	2002/2003					2003/2004				
	Quantity	Value (US$)	US$/MT	$A/MT	$A/KG	Quantity	Value (US$)	US$/MT	$A/MT	$A/KG
Australia	25,238	22,370,000	$ 886	$1,182	$ 1.2	11,416	9,423,000	$ 825	$1,101	$1.10
Total	998,851	874,383,000	$ 875	$1,167	$ 1.2	887,761	749,794,000	$ 845	$1,126	$1.13

Source: USDA Foreign Agricultural Service, obtained via Brazilian Department of Foreign Trade (SECEX)

Notes:

- Quantities are in kilograms
- All prices represent unit prices (value/quantity) and are FOB
- Year 2003/2004 represents only 10 months of data however this will have marginal impact on the unit price

Australian processors use a so-called folding equation which refers to the process by which concentrate is transformed into single strength juice. By inserting the prices from Table 1 (not necessarily the prices used by processors) into the so-called 'folding' equation provided to PIRSA by Australian processors, we arrive at a cost per single strength litre of $0.26 (PIRSA cannot provide the details of the equation as it is confidential). That figure of $0.26 is consistent with the prices stated by industry, which have varied from $0.20-$0.40/single strength litre (SSL).

The final task is to estimate the competitive price for local juicing oranges. To do so it is necessary firstly to convert the FCOJ to a fresh fruit equivalent. That is generally accepted to be a factor of 13 ie 1 tonne of FCOJ is equivalent to 13 tonnes of Australian juicing fruit. Applying that to the 2004 landed cost of $A1680/tonne, gives a figure of $A129/tonne for juice processed from Australian fruit. The second adjustment is to subtract the costs of processing in Australia which industry sources place at around $A85- 100/tonne. That gives an estimated competitive price of between $29 and $44/tonne.

There is some uncertainty about the exact price of FCOJ and hence the estimates here are provided as a range of values. However, the conclusion of this analysis is that imported FCOJ is still far cheaper than locally produced product.

Prepared by Bruno Coelho

PIRSA: Corporate Strategy and Policy

Thank-you for the opportunity to contribute to this important issue, and we look forward to the passage of the Truth in Labeling Bill.

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