SUBMISSION TO PRODUCTIVITY COMMISSION: CITRUS GROWING AND PROCESSING

ISSUE: INDUSTRY RESTRUCTURING AND COMPETITIVENESS

Industry organisations involved with variety and rootstock improvement:

The Australian Citrus Improvement Program is an industry driven program aimed at enhancing the productivity and profitability of the Australian citrus industry by ensuring that citrus budwood and seed of the highest quality is made available to and fully utilised by citrus nurserymen and growers.

To achieve this a number of specific objectives have been set:

- Importation of new varieties and selection of superior local clones
- Virus indexing and virus elimination to ensure healthy trees
- Pre-immunisation with a mild isolate of citrus tristeza virus to protect against stem pitting and other adverse effects of CTV
- Maintenance of virus-free and preimmunised clones in insect-proof screenhouses to supply budwood for new budwood multiplication blocks or for rapid nursery multiplication
- Maintenance of two trees of each approved clone in a foundation block.
- Horticultural evaluation of new varieties and locally selected clones

The Australian Citrus Improvement Association (ACIA), (now incorporated with the Australian Citrus Propagation Association as Auscitrus), representing citrus growers and nurserymen, has responsibility to ensure that these objectives are achieved. (NB Until 1991, this responsibility lay with a Technical Subcommittee of Commonwealth and State Department

(no industry) representatives and was financed on a 50:50

Commonwealth/State basis. When Commonwealth and then State funding was withdrawn, a national industry forum was held at Gosford in 1990 and the Citrus Propagation Committee formed, which in 1991 was renamed the Australian Citrus Improvement Association (ACIA). ACIA consists of a Management Committee of 13 representatives from various citrus production and nursery organizations throughout Australia. The operations of ACIA are currently funded through the Australian citrus industry grower levy from Horticulture Australia. Technical support to the program is from NSW Agriculture on a cost recovery basis.

The Australian Citrus Propagation Association (ACP), now trading as Auscitrus, is responsible for the production and distribution of virus-tested budwood and rootstock seed, and operates as a self-funding, non-profit organisation. Associated with Auscitrus, are the operations of the South Australian Citrus Improvement Society and the Queensland Citrus Improvement Committee.

To improve the coordination of the variety improvement program, I have been appointed as the National Citrus Improvement Manager (funded by CMDG and citrus levy) to add value to, and promote, the improvement scheme by developing a quality management system, a nursery accreditation system, and a flow of market-focussed information about the varieties. Overall, the position will involve the implementation of the Auscitrus Business Plan. This is crucial for the industry as it restructures to new fresh fruit or fresh juice varieties. Although focussed on varietal improvement, the position is based on an industry development model and is largely aimed at

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adoption of best practices. As such, it will be an integral part of the citrus communications strategy developed over the past few years.

Why new varieties?

The executive summary of the report of the citrus working group to the Horticultural Task Force stated that "there is general acceptance of the urgent need for the industry to adjust away from the juice concentrate end of the market to fresh fruit' and 'to develop its export base so that at least one third of fresh production is exported by the year 2000.

The AHC Benchmarking Study (1995): "Focusing on market needs and satisfying customer requirements is a key component in achieving success in the Asian marketplace. The overseas markets for mandarins are undersupplied especially in Asia. An early season export variety and a better variety to replace the late season Murcott are required. Currently available cultivars restrict ability to provide quantity over a long season (HRDC Review of Citrus Scion Breeding 1995).

The President of Australian Citrus Growers Federation in his address to the 7th National Citrus Industry Convention identified the need to develop and assess new varieties of oranges and other citrus to meet consumer requirements overseas and in Australia and to provide a continuous supply of good quality juice oranges for the 100% 'Not from Concentrate" orange juice

At the Tri State Citrus Processing /Marketing Forum held in Sept. 1996, ACGF considered the outlook for the 1996/97 Valencia orange season: The forum discussed the urgent need for new orange varieties with good juice quality characteristics, which would supplement the supply of Valencia oranges and provide processors and juice marketers with top quality "fresh/fresh style" orange juice for 12 months of the year (Australian Citrus News, October, 1996).

Australian Business Ltd. in their **Citrus Export Market Research report** (Nov. 2000), (commissioned by HRDC through the citrus levy pointed out that):

- •a supply window exists for Australian navels arriving in overseas markets in September / October each year. This is after the last export navels depart South Africa (end July) and before Spanish navels first enter markets (early November). Competition from South American suppliers in this period is, for the moment, weak. The window applies to all markets throughout the world that Australia can access. The window may include much of November in East Asian markets. Country monthly citrus import statistics suggest above average returns can be achieved in many markets during this period, also that consumption could be supply restricted and thus capable of expansion. Increased exports to arrive in markets in Sept/Oct/Nov should ease pressures on our domestic market and improve local returns.
- •a similar window exists for easy peelers in September and possibly August (a gap in supply of easy peelers to Canada also occurs in April-May).

This ABL research appears to be supported by Thomas of the Thames Marketing Co. (in his address to 2001 ACG Conference) in his chart of global procurement (next page): Upward arrow indicates window of opportunity for Australian navels and downward arrow indicates window for late easy peel mandarins.

These market driven opportunities have implications for the industry in overseas marketing / promotional strategies, new growing regions, type and number of new plantings, varietal / rootstock research, also exchange with other growing countries, market entry strategies - issues desirably addressed and co-ordinated by an industry peak body" (ABL Report).

	Oranges	Easy Peelers	Lemon
Canada		\checkmark	Х
UAE	\checkmark	Х	Х
India	Х	\checkmark	Х
Taiwan		Х	Х
Netherlands	\checkmark	Х	Х
UK		\checkmark	Х
Japan		Х	\checkmark

The 10 "Best Bet" Market Opportunities (proposed by ABL report)

Source: HAL "Citrus Export Market Intelligence System"

From early August to mid October, Australia is the only supplier of fresh navel oranges to world markets. During this period Australia has a supply

widow to all markets that have a preference for Navel over Valencia oranges and at current levels of domestic production, Australia remains unable to meet global Navel demand during this period.

Russell Witcombe, (Chairman, Australian Horticultural Exporters Association Inc. and Managing Director, Mildura Fruit Company) in his paper "Markets and research need for the future, products and access impediments" (Disinfestation Workshop, 2001) pointed out that most of the 10 "Best Bet" Citrus Market Opportunities, as identified in the HAL study share a common weakness - potentially limited product shelf life on arrival in the market, because of transit time (Canada, Netherlands, UK or delays due to "on shore" cold disinfestations –Japan). Most importers will require a minimum of 14 day shelf life for citrus to clear the marketing chain through to the consumer. This will result in citrus being 8 to 9 weeks "off the tree" at consumption in UK, Europe, Japan. In seasons like 2000 where there is a widespread inherent rind weakness, Australian growers, packers and exporters will be exposed to potentially heavy claims for poor product arrival condition in distant markets. In many cases the packer will have completed a 6 week packing program before the first fruit arrives in the market and a rind condition problem is evident.



Who has imported new citrus varieties into Australia?

Since the quarantine embargo on importation of citrus budwood was lifted in 1986, the **Australian Citrus Improvement Association (ACIA)**, (now part of **Auscitrus**) has been the major importer of new citrus varieties. Prior to the formation of ACIA in 1991, state departments of agriculture imported new varieties. A few varieties have been imported privately. Auscitrus has a track record in procuring new varieties from Spain, South Africa, Argentina, Israel, New Zealand, USA, Corsica and Japan and over **60 new varieties have been imported** (Table 1) and evaluated, with funding through the citrus levy.

Accession No.	Variety	Virus Free	Pre-Immunised
Grapefruit/ Pummelo			
I.N. 91.0736	Flame	*	*
I.N. 89.0620	Henderson	*	*
I.N. 90.0743	Melogold ^P	*	*
I.N. 89.0708	Rio Red	*	*
IN 89 0709	Star Ruby	*	*
IN 80.0610	Pay Puby	*	*
I.N. 85.0015	Oroblance ^P	*	*
Citrar	Orobialico		
Citron			ste
I.N. 94.0904	Buddha's Hand	*	*
Lemon/Lime			
I.N. 89.0703	Fino	*	*
I.N. 89.0705	Verna	*	*
I.N. 00.0915	Genoa lemon ^P	*	
I.N. 00.0918	Limoneira 8A	*	
Orange			
IN 90 0739	Pera (Bianchi) ^P	*	*
IN 90.0741	Pera (Olympia)	*	*
I.N. 90.0741	Pore (Limpire)	*	*
I.IN. 90.0742		د	
I.IN. 92.0901	Lima 150	÷	<u>۴</u>
I.N. 93.0860	Salustiana	*	
I.N. 86.0549	Parson Brown	*	
I.N. 92.0900	Natal	*	*
I.N 87.0547	Pineapple	*	
I.N. 86.0548	Hamlin	*	*
LN. 98.0921	Sanguine	*	
IN 94 0902	Delta seedless Valencia	*	*
IN 04 0002	Midknight Valencia	*	*
I.N. 94.0903	Washington novel (A two od)	*	*
I.N. 80.0000	wasnington navel (Atwood)	*	ate .
I.N. 99.0912	Fukumoto navel	*	*
I.N. 97.0924	Cara Cara	*	
I.N. 87.0551	Newhall (55-1 Spanish) navel	*	*
I.N. 86.0597	Washington navel (Fisher)	*	*
I.N. 86.0598	Newhall navel (California)	*	*
LN 94 0906	Navel (Palmer)	*	*
IN 93 0899	Navelina (315) ex Italy	*	*
IN 87.0546	Navelina (S15) ex hary	*	*
IN 86.0550	Navelate	*	*
I.N. 80.0330	Navelale	·•·	·•·
Mandarin/tangor			
I.N. 98.0920	Clementine (Caffin)	*	
I.N. 91.0740	Clementine (Hernandina) ^r	*	*
I.N. 91.0770	Clementine (Arrufatina) ^P	*	*
I.N. 87.0544	Clementine (Fina)	*	*
I.N. 87.0545	Clementine (Oroval)	*	*
I.N. 89.0704	Clementine (Clementard)	*	*
IN 87 0543	Clementine (Nules)	*	*
IN 87 0552	Clementine (Marisol)	*	*
IN 00.0010	Clementine (Corsice 1)	*	
I.IN. 97.0710	Clementine (Corsice 1)	*	
I.N. 99.0911	Ciementine (Corsica 2)		
I.N. 91.0/33	Daisy	*	*
I.N. 90.0736	Encore	*	
I.N. 86.0599	Pixie	*	
I.N. 89.0707	Fallglo	*	
I.N. 99.0909	Afourer	*	*
I.N. 99.0913	Avana Tardivo	*	*
IN 99 0914	Avana Apireno	*	*
IN 89 0706	Satsuma (Clausellina)	*	
I.IN. 07.0700	Satsuma (Olitau Wasa)	*	*
LIN. 91.0852	Satsuma (Okitsu wase)		т
I.N. 91.0853	Satsuma (Miho Wase)	*	*
I.N. 98.0919	Tsunokaori ^r	*	
I.N. 90.0818	Topaz tangor	*	
I.N. 93.0859	Fortune	*	
I.N. 91.0734	Nova	*	*
	Bergamot	*	
	N D-:	*	
	Nam Kol	•	

Table 1:Imported Varieties and clones in the Citrus Foundation Repositories, EMAI

= private

Evaluation of new citrus varieties.

- The new varieties imported by Auscitrus have been evaluated in a quick and efficient manner (by topworking healthy mature trees and through observation blocks of trees on 3 rootstocks), providing production and marketing information to growers via the Varietal Fact sheets available on the Australian Citrus Growers' website (<u>www.austcitrus.com.au</u>), the Auscitrus column in the Australian Citrus News and visits by growers to the trial site.
- As well, sensory evaluations have been done on some mandarins and trial shipments of two promising mandarins, Nova and Daisy, were sent to USA in 2000 for market feedback, with excellent out-turns and favourable comments. The comments of agents and buyers at the Melbourne markets have also been canvassed.
- CITTGROUP tours have provided an opportunity for growers to view new varieties early in their development.

An examination of Table 2, (Estimated Harvest Periods of Some Mandarin Varieties in Sunraysia), and also the Fact Sheets on <u>www.austcitrus.com.au</u>, show that the easy peelers we would have available in April-May are Imperials from the Central Burnett, Fallglo, Nova (seedlessness is required) and satsumas (Okitsu, Miho) from Riverland/Sunraysia. The only mandarin of acceptable quality available for markets in August – September is Murcott. But to date, the Murcott we are growing is seedy and not the less seedy irradiated Murcott (eg Israeli Mor) required byEurope. (NB less seedy Murcotts from QDPI and 2PH Orchards, and importation of Mor may rectify this situation, if they live up to expectations). Obviously Australia's requirement is for an alternate late maturing mandarin to the seedy Murcott.

Given that half the acreages of mandarins planted in Qld. are non-bearing and of the Imperial and seedy Murcott varieties, reworking will be required, should one of the less seedy Murcotts or another mandarin (imported or bred locally) prove to be "a goer".

Commercial interest in new mandarin varieties (Table 3) is based on grower inquiry (Cittgroup farmwalks, grower visits, phone) at Dareton Agricultural Research & Advisory Station and on budwood sales from Auscitrus.

National Citrus Scion Breeding Program:

The National Citrus Breeding Program (Project CT0012 funded through the citrus levy) aims to produce new scion varieties adapted to Australia's varied regional conditions, through conventional hybridisation, triploidy breeding, mutation breeding and genetic transformation. The first varieties from this program are undergoing field evaluations.

Benefits to industry of the citrus improvement program:

Budwood multiplication schemes operating in Australia in the last 30 years have resulted in more uniform and productive orchards free of debilitating diseases such as shellbark of lemons, psorosis and exocortis. These and other virus diseases, cause important economic losses through tree decline, loss of vigour, low yields, poor fruit quality and a restriction on the use of many rootstocks.

Of course the higher average yields enjoyed by citrus growers cannot be entirely credited to the use of healthy budwood. Better cultural practices, higher density plantings and better disease tolerant rootstocks are major factors. However unless orchards are planted with disease-free trees, their full potential cannot be realised.

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	Variety	TAI	BLE 2: ES	TIMATED	HARVES	T PERIO	D OF SON	IE MANDA.	RIN			
				VARIE	ETTES – SU	UNRAYSL Matur	A, 2000. rity Season	_				
		March	April	May	June	July	August	September	October	November	Decer	nber
		Week	Week	Week	Week	Week	Week	Week	Week	Week	We	ek
		1 2 3 4	1 2 3 4	1 2 3 4 1	1 2 3 4 1	1234	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2	4
Very Early	Miho Wase											
	Okitsu Wase											
	Clausellina											
Early	Fallglo											
	Imperial											
	Arrufatina											
Early/Mid	Nova											
	Success											
	Daisy											
Mid	Clementard											
	Hernandina											
Mid/Late	Sunset											
	Murcott											
	Pixie											
Late	Fortune											
	Topaz											
	Encore											

TABLE 3: COMMERCIAL INTEREST IN NEW MANDARIN VARIETIES

		Commercial Interest	
Variety	High	Medium	Low
Okitsu wase satsuma	X		
Miho wase satsuma	X		
Clausellina satsuma			Х
Marisol clementine			X
Fina clementine			X
Oroval clementine			X
Nules clementine	Х		
Arrufatina clementine			X
Hernandina clementine			X
Clementard clementine			X
Fallglo	Х		
Nova		х	
Daisy	Х		
Hickson (Success)			X
Sunset			X
Pixie			X
Afourer	Х		
Fortune		x	
Topaz	X		
Encore			X

Varieties to fruit in 2002: Corsica 1 and 2 clementines, Afourer.

2003: Avana apireno, Avana tardivo, Caffin clementine

The combination of export market research, evaluation of new cultivars and ready availability of variety information, are powerful tools in helping to make correct planting decisions, provided adequate quantities of true-totype, high health status planting material are available to meet nursery/grower demand.

Effectiveness of government policies:

There are a number of government policies, which impinge on the Australian Citrus Improvement Program, the budwood scheme and the health of the citrus industry.

Paramount is the **quarantine policy** of AQIS in relation to the importation of citrus budwood. Where possible, budwood is accessed from high health status sources eg improvement programs and is fully tested in post-entry quarantine, upon arrival in Australia. If the budwood has not undergone pathogen elimination or is from an orchard source, it undergoes pathogen elimination and pathogen testing in quarantine. This is the accepted procedure by countries such as USA, Spain, South Africa and is a safeguard against exotic devastating diseases, such as citrus canker, greening, mal secco and citrus variegated chlorosis.

Harmonisation of quarantine procedures under the International Plant
Protection Convention (IPPC) allows a country to regulate against
damaging pests and diseases not known to occur in that country, but
eliminates all domestic pests from consideration <u>unless the pest is being</u>
<u>contained or eradicated by an OFFICIAL control program.</u>
A list of pathogens currently excluded by AQIS, but not now considered

quarantine or regulated pests under IPPC, would include tristeza, exocortis, psorosis, cachexia etc. ie diseases we test for in the budwood scheme.

If AQIS were to adopt IPPC guidelines and no longer test for these pathogens, the impact of importing viruses in new varieties, could be great. Time to release of the new variety to the grower would double, as Auscitrus would have to test for these pathogens after AQIS testing for exotic pathogens OR the importer/grower would have to accept the risk and the losses.

A mandatory budwood scheme under government regulation qualifies as an official control program under IPPC. But since the repeal of the Horticultural Stock and Nurseries Act NSW (1969), we have no government regulation underpinning the Citrus Budwood Scheme. European countries have all moved to mandatory budwood schemes to protect their nursery and growing industries, particularly from the influx of nursery trees coming from countries with low production costs and few regulated pests.

Until Dec. 2000, **the NSW Horticultural Stock and Nurseries Act 1969** underpinned the operations of the budwood scheme in terms of health status and requiring nurseries to label whether the citrus budwood used had been from an approved source. That Act has been repealed and replaced with the

Horticultural Legislation Amendment Bill 2000. The objects of this Bill are: to facilitate the continued regulation of the horticultural stock industry in accordance with the principles of National Competition policy after that repeal by:

- amending the Plant Diseases Act 1924 to facilitate the making of Ministerial orders and proclamations in respect of plant disease and pest control, and
- II. amending the Agricultural Industry Services Act 1998 to enable the Minister to establish an agricultural industry services committee under that Act in relation to a horticultural stock

industry without first conducting a poll of its proposed constituents.

The HS&N Act Review Group considered that some regulation was warranted in relation in relation to pest and disease controls and that this should occur through the Plant Diseases Act 1924 (NSW)." "Specifically the Review Group recommended the following:

- the creation of an order under the Plant Diseases Act 1924 which prevents the sale of diseased stock, including a schedule of commercially significant diseases and pests that need to be managed and
- that existing protection under the NSW Fair Trading Act 1987 be supplemented through an order made under the Plant Diseases Act 1924 requiring prescribed stock to be labeled with the name of the propagating nursery and the rootstock and scion".

To date, NSW Agriculture has not provided any inclusions in the Plant Diseases Act to support the Citrus Budwood Scheme. As a consequence, Auscitrus is moving towards an accreditation scheme for nursery usage of Auscitrus budwood along the lines of the Australian Vine Accreditation Scheme.

Interstate quarantine: Even though there are state acts in place to prevent movement of budwood interstate from Queensland, there is a high probability that the devastating orange stem pitting (OSP) strain of citrus tristeza virus will be introduced to southern citrus growing regions in illegal introductions of budwood of the new less seedy Murcotts (QDPI is commercialising the less seedy Murcotts before virus free sources are available and even though one of the cultivars is known to be infected with

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OSP). The effect of OSP in southern regions will be greater than in Queensland where mandarins (tolerant of OSP) are the predominant variety.

Conclusion:

I have attached a floppy disk of the submission and a CD, which gives more details of the Citrus Improvement Program.

Yours sincerely,

Patricia Barkley National Citrus Improvement Manager, PO Box 46, MULGOA, 2745. Tel: 61 2 47 739 864 Fax:61 2 47 739 874 e-mail: <u>pat.barkley@bigpond.com</u> October 30, 2001.