Australian Citrus Propagation Association Incorporated

ANNUAL REPORT

2011

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Auscitrus Mission Statement

"Auscitrus will ensure that adequate supplies of healthy, true to type, and certified citrus propagation material are produced in a scientifically sound, efficient, and economically sustainable manner"

Chairman's Report

It has been a challenging year for the Australian Citrus Industry, after a number of years with water restrictions in the south and a large crop of small fruit after last summer's ample rains. With small fruit and a very poor exchange rate, most growers would have had one of their worst years return-wise in the last 20 years.

This in turn will certainly have a flow on effect to Auscitrus, with less demand for seed and budwood, making it a very tight year for the management committee and our staff. We continue to look at ways of cutting our spending. Citrus, grapes and almonds by world standards are very small industries in Australia, and any way we can work together to save costs with joint ventures will be looked at very seriously, and by doing so should get support from Government.

Most nurseries now do not grow trees on spec, only growing on fixed orders, even so some nurseries have had large cancellations as growers are finding it hard to find the extra money for expanding or replants. We can only hope the dollar can move back another ten cents or so then again we can be competitive on world markets.

We do sell excess seed oversees, but again the dollar has a large impact on our sales.

A number of new varieties have been brought into the country by private growers. By-passing the Auscitrus scheme can be a very dangerous and costly mistake. Mother trees which are not checked regularly for disease [I speak from experience] will prove costly in the long run. I thank the variety owners that do support our scheme as it is of benefit to all the industry.

We found with the pressure of work and our small staff the Nursery workshop we had hoped to run this year had to be canceled. As soon as time permits we will run a 2 day work-shop at Dareton. The Dareton property continues to flourish and a number of overseas visitors and others who have visited say they are impressed with what we have achieved in such a short time.

This will be the first year that half of the committee retire and those elected will have a two year term. This will allow continuity in our management committee. I thank all the Management Committee for their support and direction and especially congratulate Ben Swane for his AM in the Queen's Birthday Awards. Ben has spent a lifetime of support to the nursery industry.

My thanks to Tim and his staff for their interest and support of Auscitrus.

Mike Arnold AFSM
Chairman

Auscitrus representation

State	Component Organisations	Grower	Nursery
South Australia	South Australian Citrus Improvement Society (2)	M. Arnold	S. Burdette
	Citrus Growers of SA(1)	B. Dring	
Victoria	Sunraysia Citrus Growers(2)	M. Cottrell	G. Chislett
Queensland	Qld Citrus Improvement Society(1)	N. Ulcoq	
	Qld Nursery Industry(1)		W. Parr
Western Australia	Fruit West (1)	J. Cutting	
New South Wales	Nursery & Garden Industry NSW & ACT Limited(2)		G. Eyles B. Swane
	Riverina Citrus (1)	J. Valenzisi	
	NSW Farmers Association (1)	J. Cade	
National	Citrus Australia Ltd	K. Parr	
	Totals	**8**	**5**

Auscitrus Management

Executive Committee:

Mike Arnold	(Chairman)
Wayne Parr	(Vice Chairman)
Ben Swane	
Steve Burdette	
Kevin Parr	

EMAI Management committee:	Gary Eyles, Ben Swane, Tim Herrmann
Auscitrus Manager:	Tim Herrmann
Public Officer:	Ben Swane
Auditor:	WHK Thomsons Audit Services Mildura VIC

Manager's Report

Despite good seed sales and firm bud sales, it is continuing to be challenging to run Auscitrus as a profitable operation. Budgets are being set to just break even, and although we have exceeded budget it is only by small amounts. Operating reserves are not being built up, and no allowance can be made for capital works or depreciation. Investment returns have been decimated by the ongoing instability in the global financial markets.

As with many businesses at present, costs continue to increase yet returns fail to keep pace. Several steps have been taken to minimise operational costs, however further cuts will result in reduced productivity. The seed and budwood operation is being run with a core staff of around 3.5 full time equivalents, including administration and management, and the indexing operation is operating on a reduced staff. Further staff reductions are impossible if we are to continue operating to an acceptable standard.

Our support from citrus industry levies has diminished to zero over the past few years, with a resultant decrease in external funds to our operation in the order of $80,000 per annum. A large part of this is due to the decision by HAL to cease funding the repository program, which is now funded by a VC project using Auscitrus funds. Continued lobbying to Citrus Australia to reinstate levy funding for what is an industry bio-security asset has so far been unsuccessful, but discussions are ongoing.

At present the seed and budwood, indexing, and repository functions are all entirely funded through commercial sales, so nurseries are bearing the full cost of running the industry seed/budwood scheme. Most nurseries comment that they cannot pass this cost on to growers. Citrus growers and retailers need to understand this, and accept that a tree produced using tested propagules is worth the small amount extra that needs to be charged by the nurseries.

A significant issue for Auscitrus to address is the increasing pressure from exotic diseases around the world. Most other citrus producing countries have had to deal with serious incursions such as Citrus Canker and Huanlongbing, and it would be naive to think that Australia is immune from these problems. Risk management strategies need to be developed to ensure our operation is ready for foreseeable problems, and a workshop is being planned to address these issues. This could see significant changes to the way Auscitrus operates the budwood scheme, and external capital funding may be required depending on the future strategies chosen.

Despite this financial hardship and the general uncertainty in the citrus industry, there is some positive news in the increasing number of private varieties coming into the scheme. I encourage all private variety owners to use the Auscitrus scheme to protect the health status of their varieties and therefore the citrus industry.

To reinforce what the chairman wrote, we are facing a period of lean times as the citrus industry struggles with poor returns. It will require careful management to ensure we continue moving forwards as an organisation, while fulfilling our roles in the citrus and nursery industries during this period.

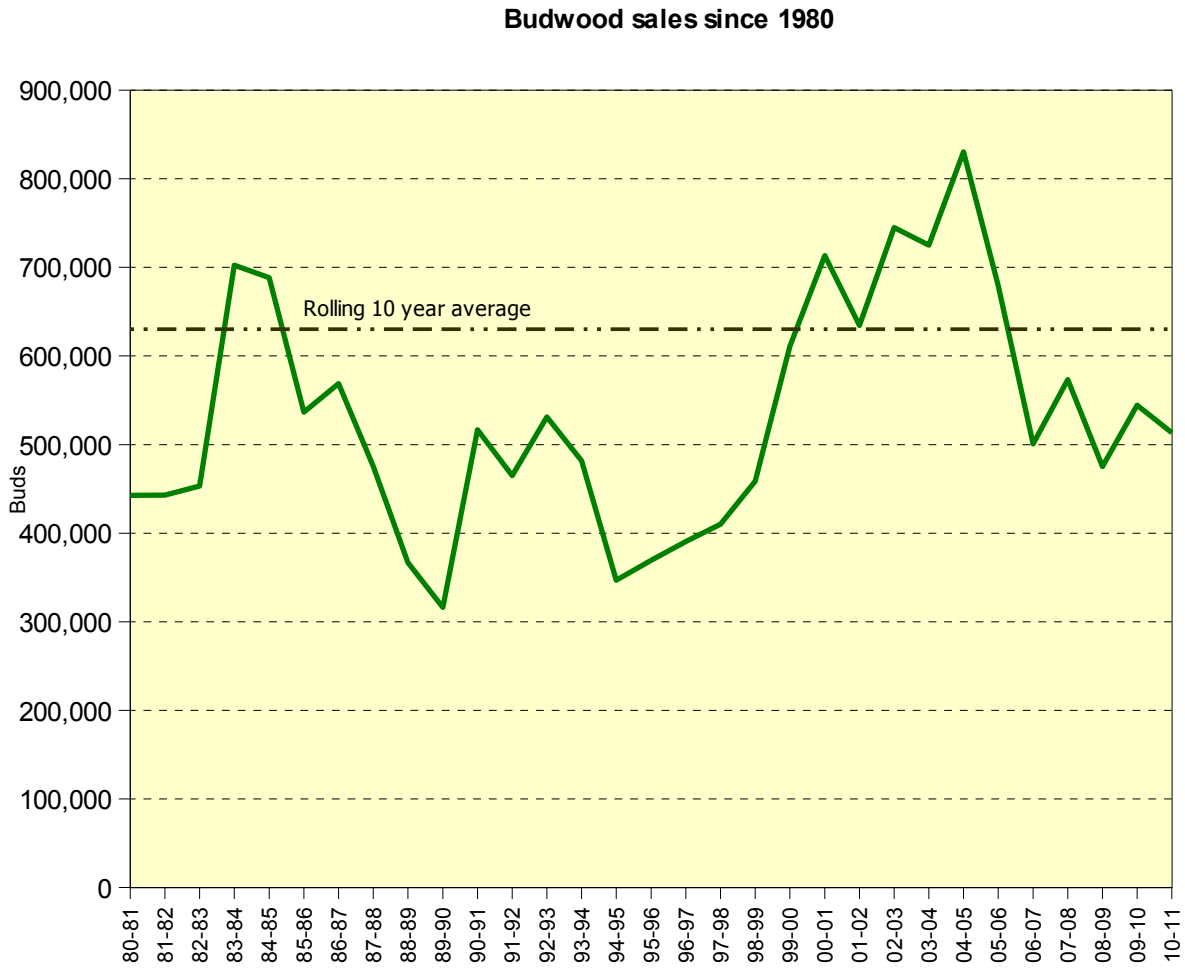
Tim Herrmann B App Sc Ag
Auscitrus Manager

Commercial Operations

Tim Herrmann	Manager
Melinda Van Egmond	Administration-Finance officer
Hannah Bowes	Field Assistant (nursery)
Robert Bysouth	Field Assistant (general operations)

Budwood sales

Budwood sales were down slightly from last year, although still above the 500,000 mark.

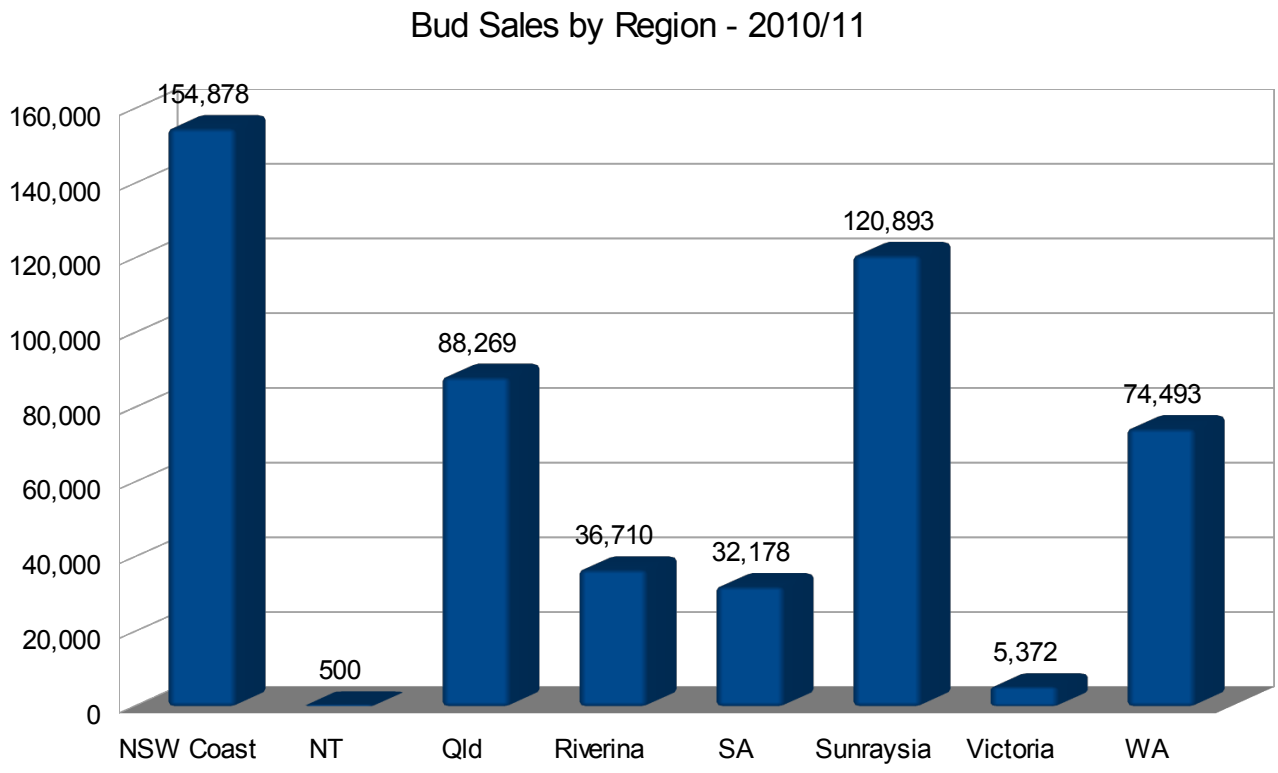


Top selling ten varieties (private varieties excluded) were:

Variety	Buds sold
Mandarin W. Murcott Afourer	48,202
Lemon Eureka	44,514
Lime Tahiti	42,840
Navel Washington	42,520
Mandarin Imperial	40,330
Valencia Keenan	34,530
Mandarin Emperor	25,320
Lemon Lisbon	23,155
Lemon Meyer	19,601
Navel Navelina (7.5 Spain)	10,755

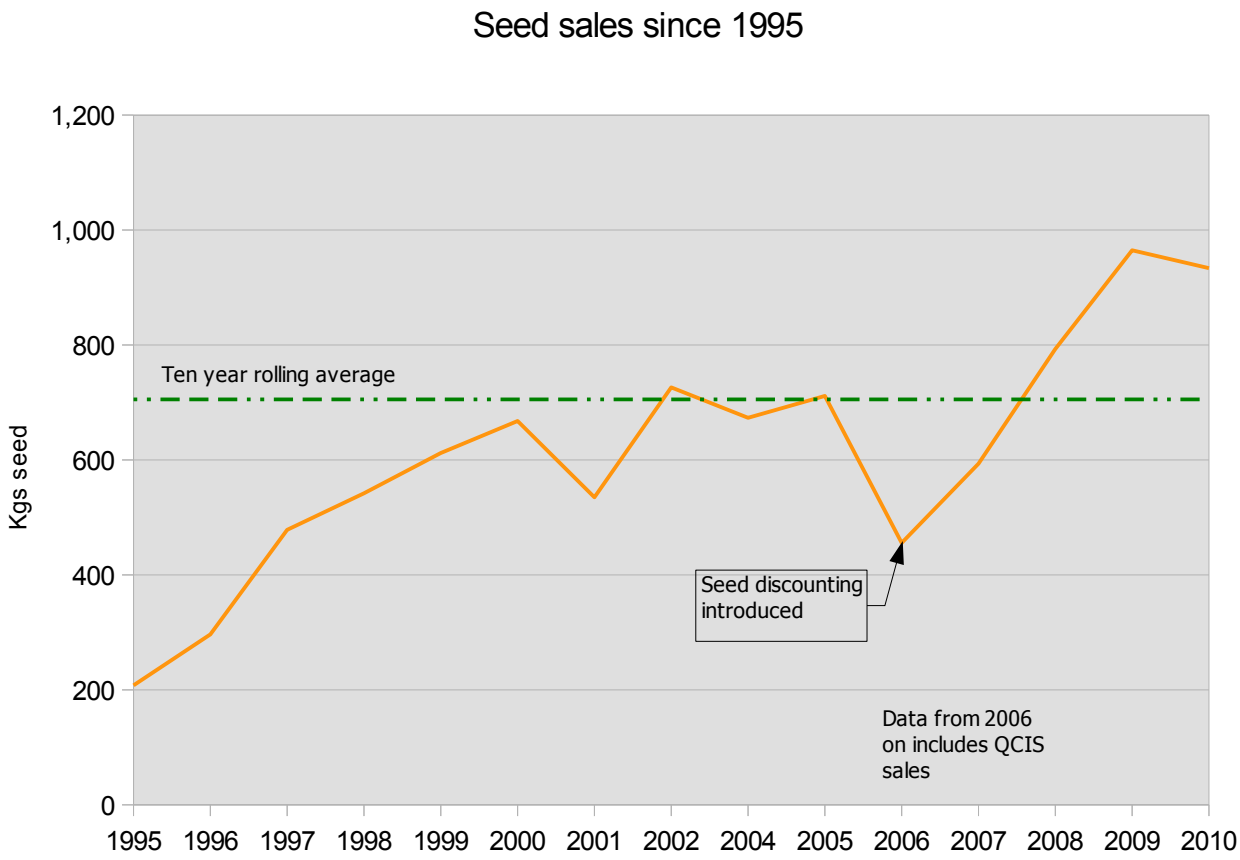
There has been a resurgence in interest in W. Murcott Afourer, but otherwise the top sellers have remained unchanged for the last few years.

Total bud distribution by region shows similar trends to previous years, apart from a noticeable jump in sales into the Riverina region (up from zero last year).



Seed Sales

Seed sales for 2010/11 were lower than last years records sales, but still strong at 933kgs.



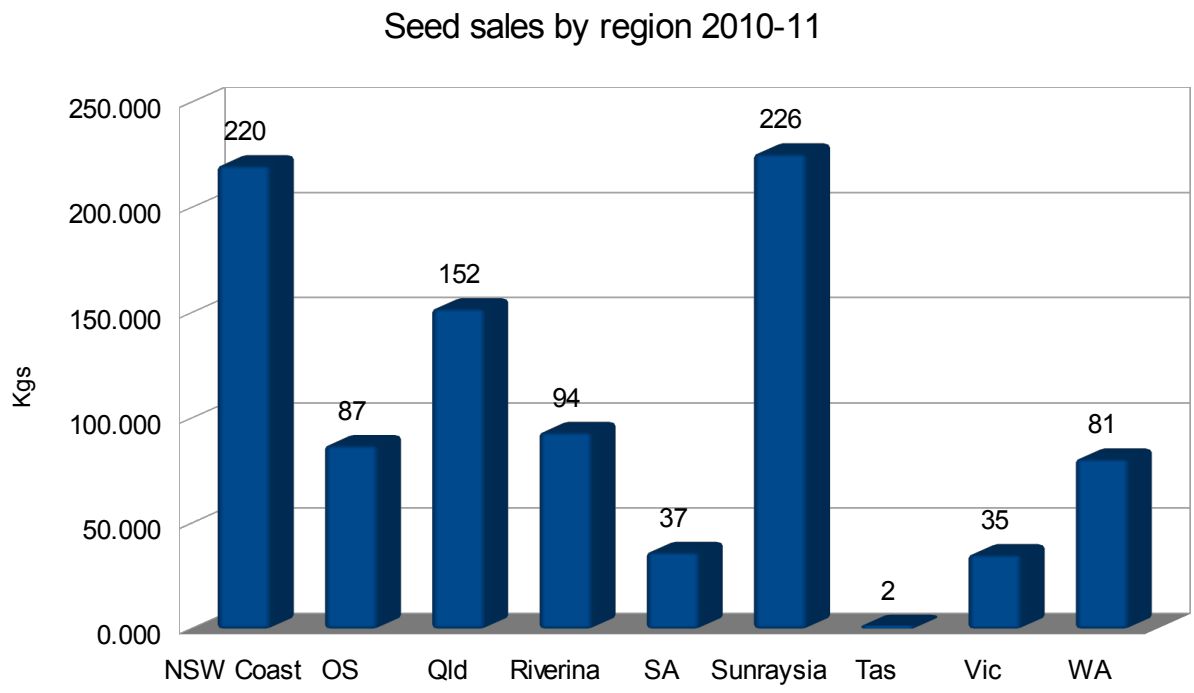
Qld harvested and extracted 225kgs of seed, Dareton 880 kgs, while around 3kgs of Flying Dragon and Rough Lemon came from Monash as the citrange from there was again not required.

Rough Lemon was the only variety in significant shortfall, as demand continues to increase faster than production in recent years. It is expected 2011/12 should see good supplies of all seed varieties.

Carizzo, Troyer and Tri continue to dominate sales as shown in this table of total sales:

Seed variety	kgs sold
P Trifoliata	273.710
Troyer Citrange	193.970
Carrizo Citrange	132.810
Flying Dragon	116.738
Swingle Citrumelo	64.273
Benton Citrange	39.945
Rough Lemon	28.355
C35	28.250
Cox Mandarin Hybrid	20.150
Volkameriana	19.310
Cleopatra Mandarin	10.350
Rangpur Lime	3.300
Sweet Orange	1.070
Sour Orange	0.500
West Indian Lime	0.250
Total	**933.541**

Distribution of seed by region follows similar patterns to previous years:



Seed export sales continue to provide a significant bonus income to the scheme.

Auscitrus operations at EMAI

Elizabeth Macarthur Agricultural Institute (EMAI) is located in a non citrus producing area at Menangle, on the outskirts of south western Sydney. At EMAI there is a NIASA accredited nursery and laboratories that are certified under ISO 9001:2008. Auscitrus is involved in 2 main areas at EMAI:

- Citrus Foundation Repository
- health status testing of its commercial budwood and rootstock seed trees

The following report covers activities during the 2010/11 financial year.

Citrus Foundation Repository

Repository for virus-free clones, EMAI & Dareton

The repository currently holds 160 virus free citrus clones with at least 1 tree of each variety held in screen houses in 2 locations at Dareton and EMAI.

The virus free repository at EMAI fills 2 screen houses, with 50 private varieties held separately from the public varieties. All fruit observed on EMAI repository trees are photographed and the images are maintained in a database.

One new local private variety was added to the repository in April 2011. No new imported varieties were released from quarantine over the 2010/11 year.

One screen house at EMAI housing the public varieties was refurbished in 2010, funded by NSW DPI. An application for capital works funding has been submitted to NSW DPI to refurbish the other screen house.

Repository for pre-immunised clones, EMAI

The repository for pre-immunised clones is housed in a controlled environment glasshouse at EMAI. This repository contains over 80 citrus clones that have been pre-immunised with a mild strain of citrus tristeza virus (CTV). This mild strain serves to protect against more severe strains of the virus that may be introduced to trees in the field by aphids – this control mechanism is called mild strain cross protection.

Trees in the citrus repositories are tested regularly for graft-transmissible pathogens. Refer to the section on ‘Health status testing for citrus pathogens’ for testing details.

The maintenance and testing of public varieties is funded by HAL and Auscitrus via VC project CT10008 ‘Protecting Australia’s citrus genetic material’ from July 2010 to June 2015. The maintenance and testing of private varieties is covered by a contract agreement between the private variety owner and Auscitrus and is paid for by the variety owner.

It is important to note that the *virus-free* status of repository trees means that no viruses or viroids that we test for have been detected in these trees using our current test methods. These trees have a *high health status* but pathogens may be detected in these trees through improved test methods and the discovery of new pathogens.

Health status testing for citrus pathogens

Virus indexing greenhouse at EMAI

Citrus viroids

All budwood source trees are tested every 3 years for citrus viroid infection using biological indexing methods on Etrog citron indicator plants. All suspect results from the biological indexing are investigated further using molecular techniques.

Viroid testing commenced for 161 Auscitrus budwood multiplication trees during the 2010/11 year. Molecular testing will be performed on a selection of trees from 2009/10 and 2010/11 testing before the results can be finalised.

Samples were extracted from all EMAI repository trees for molecular testing for viroids in spring 2010. Dareton repository trees will be sampled and extracted in spring 2011. All extracts from EMAI and Dareton trees will be tested by PCR for viroids CEV, I, II and III.

Citrus tristeza virus (CTV)

CTV is endemic throughout Australia. There are many strains of the virus from mild to severe causing a range of disease symptoms.

Every tree in the citrus repositories is tested annually for the presence of CTV using a serological test called direct tissue blot immunoassay (DTBIA). This test is used to confirm that the virus is not present in the virus-free clones and to confirm that the virus is present in the pre-immunised trees.

Trees in the EMAI and Dareton screen house repositories for ‘virus-free’ clones were tested for CTV by DTBIA in autumn 2011 with no CTV detected.

All trees in the pre-immunised repository tested positive for CTV in autumn 2011, except for the following trees:

Bergamote TID# 5001, Miho wase 5084, Afourer 5089, P/I rough lemon 5103, Herps 5141, IrM1 5164, IrM2 5169, Pomelit 5184, Primosole 5185, Yosemite Gold 5188 and Afourer 5196.

A number of trees were weakly positive but viral particles were still detected:

Midknight TID# 5019, Keenan 5022, Hernandina 5080, Genoa 5093, IrM1 5160 and IrM1 5170.

Budwood is only sourced from pre-immunised trees that have tested positive for CTV during the past year.

All grapefruit trees in the budwood multiplication blocks are tested annually to confirm the presence of a mild isolate of CTV that protects trees against more severe grapefruit stem pitting strains. Molecular testing conducted in 2008 detected more than 1 strain of CTV in many trees.

During the 2010/11 financial year, 77 grapefruit trees from budwood multiplication blocks at Dareton were inoculated onto West Indian lime indicator plants to check for the presence of the mild pre-immunising strain of CTV. Biological indexing results confirm the presence of a mild protective CTV strain in the trees.

Citrus psorosis virus

Budwood multiplication trees are tested for psorosis virus every 9-12 years via biological indexing. During the 10/11 year, 81 budwood multiplication trees were tested for psorosis. No psorosis symptoms were observed on the foliage of the indicator plants. The stems will be peeled to look for symptoms of CTV stem pitting.

Citrus tatterleaf virus

Repository trees on tolerant (symptomless) rootstocks are tested for citrus tatterleaf virus every 9-12 years. Samples from a subset of EMAI repository trees were inoculated onto Rusk citrange indicator plants in October 2010 with no CTLV symptoms observed to date. Molecular testing will be conducted on all EMAI and Dareton trees on tolerant rootstocks later in 2011. The same extracts will be used for viroid and CTLV testing.

Field inspection

The Auscitrus budwood multiplication blocks at Dareton Agricultural Research and Advisory Station were inspected on 18/4/09 by Sylvia Jelinek and Nerida Donovan. All trees in the budwood blocks 2 and 4 were inspected for disease symptoms and off-type shoots.

No suspect disease symptoms were observed of pathogens of concern. Any off-type shoots were reported to Auscitrus in person immediately after the inspection and via the EC update submitted in June 2011.

General business

Pathogen elimination

Viruses and viroids can be removed from infected mother trees by shoot tip grafting and heat treatment. Successful shoot tip grafted plants then require testing to determine if all known pathogens have been eliminated.

Pathogens were successfully removed from 1 private variety, which was included in the repository in April 2011. Variety testing is in progress for 5 private varieties submitted over the past year, 3 of these varieties require shoot tip grafting. Another private variety is being shoot tip grafted for the second time.

Quality assurance

The EMAI nursery is NIASA accredited and the Citrus Pathology and Soil Health Team is ISO 9001:2008 certified. The EMAI repository for virus-free citrus clones is also accredited as a MAF Biosecurity NZ off-shore quarantine facility (renewed in April 2010). The unit has been inspected and audited during the 2010/11 financial year and maintained both the NIASA accreditation and ISO certification. The Auscitrus and EMAI management committee has also inspected the site on 3 occasions over the year.

EMAI Auscitrus Staff

NSW DPI staff involved with Auscitrus activities at EMAI during the 10/11 financial year:

Sylvia Jelinek	Technical Officer, Auscitrus Pathogen Indexing
	Full-time from Dec 2010
Allise Fail	Technical Assistant
	Part-time (2.5 days per week)
	Maternity leave from April-June 2011
Elissa Dell	Technical Assistant – casual
Craig Gaunson	Leading Hand – Gardener
Nerida Donovan	Citrus Pathologist
Mark Walker	Professional Officer, Auscitrus Pathogen Indexing
	Part-time (2.5 days per week) from Jul-Oct 2010
Margaret Coogan	Technical Assistant – casual from July-Dec 2010

List of pubic varieties in virus free repository

Type	Variety
Citron	Bergamote
	Buddah's Hand
Cumquat	Nagami
Etrog	Etrog citron
Grapefruit	Flame
	Henderson
	Marsh 3962
	Marsh 3970
	Ray
	Rio Red
	Star Ruby
	Star Ruby R. Cant
	Thompson (Eagle)
Lemon	Allen Eureka
	Fino
	Lambert Eureka
	Lemonade
	Limoniera 8A
	Prior Lisbon
	QLD Lisbon
	Taylor Eureka
	Verna
Lime	C. hystrix Eyles
	C. hystrix Malaya
	C. hystrix Nathanael
	Schweppes W.I.L
	Tahiti STG

Mandarin	Avana Apireno
	Avana Tardivo
	Clausellina Satsuma
	Clementine (Arrufatina)
	Clementine (Caffin)
	Clementine (Clementard)
	Clementine (Corsica 1)
	Clementine (Corsica 2)
	Clementine (Fina)
	Clementine (Hernandina)
	Clementine (Marisol)
	Clementine (Nules)
	Clementine (Oroval)
	Daisy
	Eloise
	Encore
	Etna
	Fallglo
	Fortune
	Fremont (4566 R8T2)
	Hickson
	Imperial (0043/2)
	Miho Wase Satsuma
	Nour
	Nova (Spain)
	Nova (Trott)
	Okitsu Wase Satsuma
	Orogrande
	Parsons Special
	Pixie
	Primosole
	Sidi aissa
	Silver Hill Satsuma
	Sunburst
Navel	Benyenda Navel
	Cara Cara
	Fukumoto
	Hockney STG/HT
	Hutton Navel
	Leng Navel
	Navelate
	Navelina 315
	Navelina Spain 7.5
	Newhall (55-1 Spanish) navel
	Newhall (California)
	Palmer
	Thomson
	Washington navel (Atwood)
	Washington navel (Fisher)
	Washington Navel (Houghton)

Orange	Arnold blood
	Bintang Cheng Renbin #5
	Bintangchen #2
	Hamlin
	Jincheng
	Lima
	Natal
	Parson Brown
	Pera (Bianchi)
	Pera (Limeira)
	Pera (Olympia)
	Pineapple
	Salustiana
	Sanguine
	Smith (Joppa)
	Tarocco Ippolito
	Tarocco Meli Nuc. C8158
	Tarocco Meli Nuc. C8158
	Tarocco Rosso Nuc. C4977
	Tarocco Rosso Nuc. C4977
Pommelo	Namroi
Tangor / Tangelo	Ellendale (Herps)
	Ellendale / EM3
	Murcott Tangor (Benham)
	Topaz tangor
	W.Murcott Afourer
Valencia	Berri 3501
	Benyenda Valencia
	Delta seedless valencia
	Keenan 3125
	Keenan 3247