

# Talking Avocados

A white ceramic bowl filled with a vibrant salad. The salad includes sliced avocado, fresh cilantro leaves, and other green vegetables. The bowl is placed on a dark brown, textured placemat. A pair of white chopsticks rests on the right side of the bowl. The background is a soft-focus light green.

**HAL Update**

**Ayoman Version 2**

**Rootstock Development Plan**

**Winter 2004**

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# Avocados Australia Limited

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**We all make mistakes:** If we make a mistake please let us know so a correction may be made in the next issue.

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# Chairman's Perspective

## The Market

At the end of June wholesale prices of avocados were better than what have been gained in June in previous years. Most of the "experts" are at a loss to explain the reasons. A number of issues are probably contributing to the better prices including no "old" fruit in the system, the reduction in volumes of other varieties such as Fuerte, the chain stores regularly including avocados on their specials list, crop size may be smaller than expected and the industry funded TV promotions which have been running in May and June. I would also like to think that we growers and packers are getting smarter and managing the flow of fruit onto the market better than we have in the past. Maybe I'm being a little optimistic as there are few obvious signs that fruit flow is being managed. However, the returns are good news for those harvesting and they also provide some hope for better returns through the remainder of the season.

The greatest risk to the market now is probably a significant frost event in one or more of the growing areas resulting in an influx of frost affected fruit. I strongly recommend that if you are unfortunate enough to be affected by frost that you are careful how you market your affected fruit. If the fruit is high risk then consider sending the fruit direct to one of the two oil processors now accepting fruit. If the fruit quality is not a serious concern then inform your wholesaler that the fruit may be frost affected. If they know about it then the fruit can be moved through the system quickly and the problems that developed last season in August can be avoided. Also if you need to harvest an abnormally large volume of fruit at any time advise your wholesaler in advance so they can market that fruit and possibly slow down their other suppliers.

## Packaging

Woolworths is implementing changes to its retail presentation of fruit and vegetables which will have a significant impact on the avocado

industry. They expect all products to be delivered in either returnable plastic crates (RPC) or in black modular cartons that are either a 6 or 12 per pallet footprint. The advice is that the P84 tray, which has been widely used by industry in recent years, will not be acceptable, as its dimensions do not fit the new display units. AAL has been involved in meetings with Woolworths and with a number of its major avocado suppliers in an effort to ensure that the adverse consequences of the changes are minimized.

Woolworths are implementing the changes to gain efficiencies in their distribution system and at store level. The production sector needs to gain some efficiency from any changes as well. The cost of packing and packaging our fruit is already excessive and improvements are needed. Ultimately however we have to provide the consumer with satisfaction. The industry moved to the P84 style tray some years ago as it gave a better quality product at retail level than the old "chocolate box". Whichever system is identified as being the preferred option to supply Woolworths, is likely to then become the industry standard. Unfortunately these changes are being pushed onto industry by one of our major customers with little or no consultation with us. However, they were happy to meet with our CEO when he approached them. Consultation with most of the fruit and vegetable industries has been limited to discussions with major suppliers.

## AAL Board

Following the Board election process I welcome Jim Kochi and Ron Simpson to the Board. I look forward to welcoming them to the table at the first meeting and am confident their skills and experience will be appreciated and utilized as we manage the industry issues over the next few years. On behalf of all involved in the industry I must congratulate all Directors on their nomination and election and thank them for their commitment to the industry. There are going to be some major challenges for our industry in the next 5 years with the increases in production that will be coming through, the development of export opportunities and the ever present threat of imports.

As a consequence of the election Col Cummings can now concentrate on his own business activities. I thank Col for his valued contribution to our industry over the last 3 years as the representative from north Queensland.

*Rod Dalton*

Rod Dalton

AAL Chairman and  
Director for the South Queensland Growing Area.



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# Industry Matters

By Antony Allen

Antony is CEO and IDM of Avocados Australia

## Newly Elected Avocados Australia Board

The new Board of Avocados Australia Limited took office as of 1 July 2004. The new Board met for the first time on 13 and 14 July to determine the future direction of the organization and the Australian industry. The upcoming Strategic Plan development and the R&D and Marketing plans for the current financial year were discussed. To have your say please contact your local Director (see the inside front cover for contact details).

North Queensland: Jim Kochi

Central Queensland: Ron Simpson

Central Queensland: Lachlan Donovan

Sunshine Coast: Henry Kwaczynski

South Queensland: Rod Dalton

North New South Wales: Peter Molenaar

Central New South Wales: Chris Nelson

Tri State: Colin Fechner

Western Australia: Wayne Franceschi

## The Avocado Barcode

The next in the line of "Heart Tick" avocado barcode stickers was launched in May. The variety Wurtz becomes the third variety to receive a barcode sticker. The other varieties are Hass and Shepard. The AAL sees the continuation of the industry generic barcode sticker program as an essential part of lowering costs for growers. We are able to ensure an "access for all" policy. Please go to [www.avocado.org.au](http://www.avocado.org.au) for more information regarding the avocado barcode sticker.

## Woolworths and Coles Packaging

The largest issue impacting on all growers and packers is the imminent changes to Woolworths requirements on packaging. These will flow on and will result in a change to the overall industry's packaging systems. In short the only thing that is sure in this change is that we will be forced to change from the current eight trays per layer on a pallet to six or twelve. Avocados Australia is working with a number of Woolworths direct suppliers to try to ensure the best outcome for "growers". As more information becomes known we will keep you all informed.

## Chemical Reviews

The AMPVA is undertaking a number of reviews on chemicals that avocado growers generally use, including dimethoate, carbaryl and fenthion. The endosulfan review final report was released in May and the final recommendations do not adversely affect use in avocados although reentry after spraying is a concern. These reviews are of products that were registered prior to the current chemical data requirements, so the AMPVA is systematically reviewing chemicals that could present human health issues. The onus is on us to demonstrate the safe use of the chemical for both growers and consumers. Avocados Australia is working hard to retain access to these chemicals on your behalf.

## Export Development

The first meeting of the AAL Export Development Committee was held in Brisbane on 26 May 2004. The members of the Committee include, Henry Kwaczynski, Ron Simpson, Amos Weigall, Jim Kochi, Bryan Raphael, Lachlan Donovan, Brian Prosser, Antony Allen and Wayne Prowse. The Committee decided to allocate its budget of \$20,000 to a Hong Kong supermarket co-operative promotions program for avocados in store, the development of a set of promotional brochures for Australian avocados and the attendance of Australian avocados at the Fruit Logistica International Trade Fair in Berlin. If you have an interest in exporting avocados please contact a member of the Committee. Their contact details can be found at [www.avocado.org.au](http://www.avocado.org.au)

## Strategic Planning for 2005-2010

The current plan is coming to a close. The next six months will see the current plan assessed and a new plan developed for the 2005 to 2010 period. We will keep you updated with the process and seek your input over this period.



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Industry Matters  
continued

**Government Fails,  
Yet Again**

The "Retail Grocery Ombudsman Review" has finally been released by the Federal Government. The Government has yet again failed the Horticulture industry. Horticulture produces in excess of \$6.4 billion (GVP) for the Australian economy and employs over 80,000 people. The Government has indicated that it will hand over control and management of disputes between wholesalers and growers to the wholesalers Peak Body "The Australian Chamber of Fruit and Vegetables Industries", continuing to place the balance of power strongly in the wholesalers. We don't ask for control, we just ask for "a fair go", an enforceable system that would benefit everyone. We don't want the "sharks guarding the fish pond"!!! If you are concerned make your local Federal member aware of those concerns.

**AAL Membership**

**Thailand-Australia  
Free Trade Agreement  
(TAFTA)**

Australia and Thailand have signed a free trade agreement. It is Thailand's first and Australia's first with a developing country. Thailand has had a high tariff system for fresh produce. With the introduction of TAFTA, avocados will go from a tariff of 42% to zero in 2005. The advantage for Australian business is that in this period before any other country has the same advantage we should be able to develop our business relationships that will survive competition from others in the future.

With the launch of the new organisation, "Avocados Australia" in January this year, we were able to give for the first time Australian avocado growers the ability to become a member of their Peak Industry Body (PIB). Over the last six months the membership has grown substantially, but there are still some growers that have not taken the opportunity to join. I ask you to consider joining and help grow your PIB so that we are able to achieve the greatest and most effective outcomes for your business. Please contact us on 1300 303 971 or go to [www.avocado.org.au](http://www.avocado.org.au) for more

information and membership application forms.

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## Australian Roundup

### Sunshine Coast Report

By Henry Kwaczynski,

AAL Director for the Sunshine Coast Growing Area.

#### Everything changes - everything stays the same.

At a recent SCAGA meeting, we were honoured to have as guest speaker Mr Keith Anderson. Keith began growing avocados in this region over 50 years ago, and has been at it ever since. Keith told us about how it was in the early days - prices were substantially higher than they are now, how difficult it was to obtain trees with good root stock, the impacts of the 1974 flood, early days of the formulation of AAGF, how he was involved in progressing the establishment of a local avocado support group, how return to growers has been steadily declining every year and continues on the downward trend, and how, when he turned 70, he decided to get off all the committees that he was involved with and create a garden. He has done that, and his garden is magnificent. We were grateful to hear Keith's story.

As I mentioned in this column last time, problems with immature fruit do not seem to recede, and some growers continue to send fruit which is simply not yet ready for consumption. I recently cut open fruit from three trays purchased at Brisbane market, and 80% of the fruit was immature and had stem end rot. This fruit can only be described as food for pigs. You are not doing yourself or anyone else any favours selling fruit such as this - consumers will not continue to purchase avocados if they are offered such poor quality.

#### Brisbane Ekka (Exhibition), 5 - 14 August.

SCAGA is again involved in creating and staffing a stand in the horticulture pavilion. This is a great opportunity to interact with actual or potential avocado customers, and the stand continues to be a successful marketing opportunity. So this is a call for volunteers to give half a day of your time to staff the stand. As usual it is a battle to find people to fill all the slots, and the same people do this job year after year. If you are able to take part in the Ekka this year, please give me a call on 07 5442 1767.

### Western Australia Report

By Wayne Franceschi

AAL Director for the Western Australia Growing Area.

WA has had a good season and some high prices were reported. The coming season is looking pretty good so far. Perth should be up on last year and the South West is much the same. Some very hot days in November and then in February caused some bad sunburn and some heavy losses of fruit.

Our AGM was held in March with Alan Blight the returning chair. Alec McCarthy from AG WA presented a report on his trip to the national congress.

It was good to hear from growers saying the Roadshow was a great success and that everybody found it very informative. Thanks to everyone who helped on the day.

### North Queensland

By Colin Cummings

Colin was the AAL Director for the North Queensland Growing Area. Jim Kochi is the newly elected Director for North Queensland.

#### Are we ready to accept change, if not, expect to be left behind.

Two years ago QA was nice to have, now you must have it to sell your produce to the leading chains. Until now packing your fruit in a tray/carton was all that was needed, shortly the chains will move to Returnable Plastic Crates (RPC), change the size of packaging and require further documentation on packs and pallets.

#### What will this change mean to you?

RPC will reduce significantly the need for tray/carton packs, fruit will be transported in bulk to central packing/ripening facilities where differential packaging ie, RPC, 4 pack and other packs will be put together on demand, ripened and delivered to the chains.

These central pack houses will have close liaison with processors which will see all poor fruit pulled out of the main stream with only quality fruit hitting the market, ensuring balanced reasonable returns for your produce.

This season saw our production exceed 1,000,000 trays for the first time, with Shepard accounting for around 60% of that total.

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## Australian Roundup continued

Seasonally adjusted, this is about where we should have been in 2003 when we achieved 905,000 trays down from 945,000 in 2002.

I am concerned at the level of uptake of membership in Avocados Australia from our area. Your peak industry body is your voice for the future of our business and needs your active support to ensure you have a say in how the industry is managed. They are your levies. Get involved and be part of a sustainable, growth industry.

### Tri-State Report

By Colin Febner

AAL Director for the Tri-State Growing Area.

On May 6th we held our AGM and mini field day. One item that was raised which has far reaching implications, was safety regulations for Elevated Work Platforms (EWP). Safety regulations for EWP are standard for all applications. It was moved that all horticultural groups should get together and adopt a code of practice for EWP that is applicable. NZ has a set of regulations for EWP in Horticulture and these could be adapted for Australia, with minor alterations, instead of writing our own.

Marie Picone was our guest speaker for the day. She talked about her work with canopy management analysis. She talked about canopy management and then we broke into small groups and discussed what was being done in our area and what was working and what wasn't.

In the afternoon we visited 2 orchards trying different methods of canopy management. There was good discussion on whether what was being practiced would work and what else could be a better option. The afternoon ended with a BBQ and drinks at Colin and Carol's home.

The Royal Adelaide Show is fast approaching, 3 - 11 September. This is a reminder to growers that you will be getting a letter soon asking for help during the show. If you haven't worked at the show before and would like to help for 1 or 2 days, call Colin on 0414 716 401. The Show is a very good way of promoting avocados, and a good way for growers to talk directly with consumers.

The Hass crop is looking good; however, the crop is down a little on our big year and the size of the fruit is quite large for this time of year. Growers are looking to start harvesting some of their crop in September so they can work on their canopy.

## What's on in 2004?

### JULY

24rd: Bundaberg Fruit & Vegetable Growers 2004 Gala Industry Dinner, Bundaberg Civic Centre, Bundaberg, Queensland. Ph: 07 4153 3007

### AUGUST

2-3rd QSA International Third Asia Pacific Forum, Parramatta, Sydney, New South Wales. Website: [www.qsanet.com](http://www.qsanet.com).

24th AAL R&D and Marketing Committee Meeting - Brisbane

25th Avocado Researcher Workshop - Brisbane

31-1 Sept: Chemcert Australia National Conference, Canberra, ACT Ph: 02 6161 0477, Email: [national@chemcert.org.au](mailto:national@chemcert.org.au)

### SEPTEMBER

1-3rd Australian & NZ Societies for Horticultural Science's Inaugural Joint Conference, Hyatt, Coober Pedy, Queensland. Website: [www.aushs.org.au](http://www.aushs.org.au)

6-9th Fine Food Australia - 24th Australian International Food & Drink Exhibition, Melbourne Exhibition Centre, Melbourne, Victoria. Ph: 03 9261 4500, Email: [food@austexhibit.com.au](mailto:food@austexhibit.com.au)

8-10th Southern Hemisphere Congress, Melbourne, Victoria. Email: [melbourne2004@fruitnet.com](mailto:melbourne2004@fruitnet.com). Website: [www.shcongress.com](http://www.shcongress.com)

15-16th Riverland Field Days, Sturt Highway, Barmera, South Australia. Ph: 0409 099 122

14-17th Avocados Australia - Board and Industry Advisory Council Meeting Rydges Oasis, Sunshine Coast, Queensland.

16th Avocado Levy Payers Meeting, Rydges Oasis, Sunshine Coast, Queensland.

16th Avocados Australia Limited 1st Annual General Meeting, Rydges Oasis, Sunshine Coast, Queensland.

21-24th Second Australian New Crops Conference, University of Queensland Gatton Campus, Gatton, Queensland. Ph: 07 5460 1311, Email: [r.fletcher@mailbox.uq.edu.au](mailto:r.fletcher@mailbox.uq.edu.au)

### OCTOBER

15-19th PMA Fresh Summit International Convention & Exposition Anaheim, California USA Website: [www.pma.com](http://www.pma.com)

### NOVEMBER

30th Avocado Strategic Plan Workshop - Brisbane

### DECEMBER

1-2nd Joint New Zealand (NZAGA) - Australia (AAL) Board Meeting, Toowoomba, Queensland.

*If you have any local grower meetings, field days or events that you would like to include in "What's on in 2004", please contact us with the details.*

# HAL Update

**By John Tyas**

*John is the HAL Industry Services Representative to the Avocado Industry*

## 2004-05 Annual Investment Plan finalised

HAL (Horticulture Australia) and the Avocado Industry Advisory Committee (IAC) have finalised the Avocado Annual Investment Plan for 2004-05. The plan covers proposed expenditure from marketing levies, R&D levies, industry-endorsed voluntary contributions and commonwealth matching funding for R&D.

The majority of funds from the marketing levies again will be directed to the highly effective TV advertising program. Other smaller investments include public relations, magazine advertising, point of sale material, contribution towards a generic fruit and vegetable marketing program and export strategy development.

The majority of matched R&D levies will be invested in disease management research, plant nutrition, rootstock development and a new canopy management project to be implemented across the major production regions. Other smaller investments include work to support registration of Phosphorus Acid and updating of AVOINFO. A study will also be commissioned to gather accurate information on the current extent, impact and management practices of fruitspotting bug as a foundation for possible further investment decisions.

Communication and industry consultation will continue to be an important part of the investment mix. The plan also includes an allocation to review and update the avocado industry strategic plan to cover the next five year period.

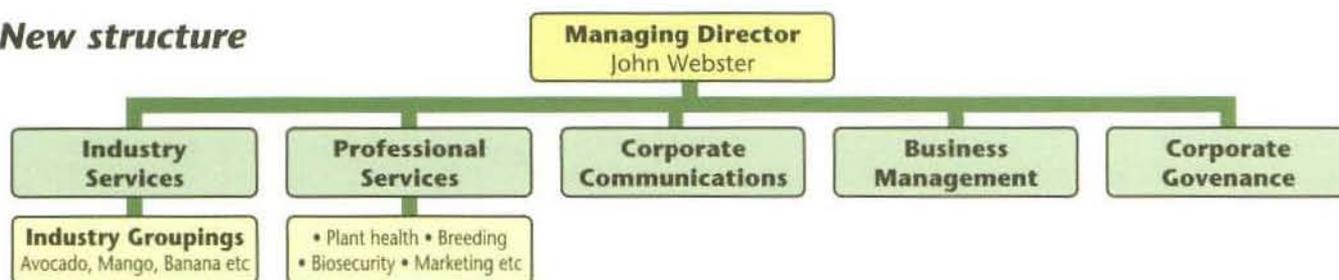
The groupings for these industries have been based on natural synergies that exist in industry programs. The avocado industry will be grouped with mango, banana, papaya, custard apple, passionfruit, lychee, ginger, persimmon, pineapple and melons where there are many areas in common, as these industries are predominantly tropical or sub tropical fruit industries.

**Professional Services** - this team will provide specialist program management to ensure efficient delivery of the outcomes identified by Industry Services representatives and will facilitate delivery of outcomes back to the avocado industry. They will work across areas of specialisation covering all of HAL's R&D and marketing activities to ensure synergies across industries are captured to the benefit of individual industries.

Each professional services team member will be responsible for a specific research or marketing area. An example may be plant health. The professional services team member will be responsible for ensuring best practice is used for all industries and opportunities for cooperation are identified. Other areas of specialisation include domestic marketing, export marketing/market access, postharvest/supply chain management, sustainable production practices, breeding/biotechnology, agronomy, skills development and commercialisation. There are opportunities for the avocado program to streamline costs and efficiencies within this new system.

These teams are supported by **Corporate Communications, Business Management** and **Corporate Governance**.

## New structure



## HAL announces new organisational structure

HAL announced a change to its organisational structure on 6 April to improve the level of service it provides to industry. Under the new structure HAL will be in a better position to apply its across-industry knowledge and expertise to benefit each individual industry.

The new structure has established two key teams to manage industry programs. They are:

**Industry Services** - this team will work with industry on planning and developing programs. They will be the main point of contact for industry.

Industry Services representatives will work with multiple industries.

## The difference it will make to industry

Industry will be getting a better level of service and will benefit more from the knowledge and expertise HAL has gained from working across industries. HAL will have a stronger focus on industry planning needs, will be better able to deliver commercial benefits to industry and will be improving communication to industry.

## What does this mean for the avocado industry?

Under the new structure, John Tyas has been appointed as the Industry Services representative for avocados. John will continue to work closely with the avocado industry on the management of the program.

# Notice of Annual General Meeting

## Avocados Australia Limited

Notice is hereby given to the voting Members of Avocados Australia Limited (AAL) that the Annual General Meeting of AAL will be held at the Rydges Oasis, Landsborough Pde, Caloundra, Sunshine Coast, Queensland, on **Thursday 16 September 2004** commencing at **3:30pm**.

### Agenda

#### 1. Financial Statements and Reports

Presentation and consideration of the financial statements of the AIPM, Directors' and Auditors' Reports for the year ended 30 June 2004.

#### 2. Auditors

Appointment of auditors for the 2004-2005 financial year.

#### 3. Other Business

Consideration of any other business for which proper notice has been given.

By order of the Board.

Antony Allen  
Company Secretary

*If you are unable to attend the AGM, a member entitled to attend and vote is entitled to appoint a proxy to attend and vote in their stead. Proxy forms will be provided directly to all members of AAL.*

# Annual Avocado Levy Payers Meeting

Avocado Industry Advisory Committee and the AAL Board advise that the 2004 Annual Avocado Levy Payers Meeting

Will be held at

**Rydges Oasis,**  
Landsborough Pde, Caloundra, Sunshine Coast, Queensland.

On **Thursday 16 September 2004** commencing at **2:00pm**.

### Purpose of the meeting:

For Levy payers to receive presentations from the Avocado Industry Advisory Committee and the AAL Board on the Industry Strategic Plan, the Annual Investment Plan and the IAC Annual Report (including reports from Horticulture Australia on R&D and Marketing).

The meeting will be followed by afternoon tea. If you are attending, please advise the AAL Office for catering purposes.

AAL Office Phone: 07 3213 2477

# WARNING

Avocados Australia has for a number of years paid a large amount of money for the industry's right to use the Heart Foundation "Heart Tick" on avocados.

If you are using a "Heart Tick" logo from anyone other than the label companies "Label Press" or "Compass Labels" you are acting illegally. No other label printers are able to legally print the "Heart Tick" for use on avocados.

Avocados Australia is undertaking a clean up of the "Heart Tick" printing. We will lose access to the "Heart Tick" logo if it is used illegally.

Avocados Australia, AUF and the Heart Foundation will enforce their Registered Trademark rights to the fullest extent.

If you have non-genuine labels do not use them. If you know of label companies offering to print non-genuine "Heart Tick" labels for you please let us know on 1300 303 971, so we can all help keep this valuable tool.

All growers could lose access to the "Heart Tick" logo if you don't act now.



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## Turning fruit on the ground into dollars in your pocket

**By Alec McCarthy,**  
*Alec is an avocado researcher with the Western Australian Dept of Agriculture, Bunbury*

Through modifying irrigation practices you may be able to reduce summer fruit shed in avocados, thereby increasing yields.

Fruit shed from avocado trees during the summer period (late January to April) has long been a frustrating occurrence for Western Australian avocado growers. In some seasons, growers experience shed in excess of 50% of an individual tree's starting crop. Some shed fruit are in excess of 150g when they drop. Therefore the tree wastes a lot of energy and a lot of production is lost. If this summer fruit shed can be reduced, this will help increase the production per hectare.

One potential cause of this fruit shed is hot dry conditions leading to high water vapour pressure deficits, which results in excessive water potentials within the tree. To counter the hot dry conditions experienced in Western Australia, growers have been experimenting with modifications to under tree irrigation practices. The theory is that by using regular short irrigation bursts during the day (referred to as pulsing), the micro-climate around the tree is modified sufficiently to reduce the water potentials within the tree and thereby reduce fruit shed. There is also a side benefit to pulsing, the milder conditions about the tree may result in increased stomatal openness and thereby increased photosynthetic activity.

Over two seasons, 2001-02 and 2002-03, we monitored trees on a property in Carabooda, 50km north of Perth, to determine the impact of irrigation pulsing on the microclimate about the tree and on fruit shed and subsequent yields. The trees were mature Hass variety grown on deep sandy soils at a spacing of 7m x 7m with a reasonable mulch cover and irrigated using under tree ball engine sprinklers delivering approximately 5.5mm of water per hour to the entire orchard floor.

In the first year, in addition to the normal nightly irrigation, we irrigated with 8 short irrigation bursts of 10 minutes each at 0930, 1010, 1130, 1210, 1430, 1510, 1630 and 1710 hrs as a substitute for the midday irrigation. In the second year, we modified this to 0930, 1010, 1130, 1210, 1330, 1410, 1530 & 1610 hrs, plus it was programmed to only occur when the temperature was predicted to rise above 30°C. The pulsing block was compared to a similar block that received the grower's normal nightly (1 hr) plus midday (30 mins) irrigation.

In the first season, there was no significant impact on the number of

fruit shed as a result of the pulse irrigation. We did, however, see a significant change in the relationship between initial fruit set (after first shed) and the summer fruit shed numbers. There was a mild straight linear relationship showing increased summer fruit shed with increased initial fruit set. The pulsing treatment reduced the slope of this relationship. In the first season, measurement trees were selected based on flowering intensity, before the completion of the early shed of fruit. This resulted in a rather variable fruit set. Therefore, the lack of significance in the number of fruit shed in the first season may in part have been a result of this quite variable fruit set. In the second year, we selected trees after the initial fruit shed had finished to provide more even starting crop loads.

In the second season, we achieved a highly significant reduction in the rate of summer fruit shed. Reducing from an average of 395 pieces of fruit shed per tree (72% of fruit set) for the standard treatment to 156 pieces of fruit shed per tree (26%) for the pulse treatment. This represented an almost 250% increase in production, or in this case an increase from 34kg per tree (standard treatment) to 82kg per tree (pulse treatment).

There were two major differences between the first season and the second season, firstly the extended gap from pulsing in the middle of the day due to a programming issue which was fixed for the second season. Secondly, in the first season the trees were in an 'on year' averaging 161kg per tree (pulsed treatment) and 134kg per tree (standard treatment), whereas the second season was an 'off year'.

The reason for the pulsing being effective at significantly reducing the summer fruit shed in the second year, yet not in the first year is still open to speculation, as indeed is why it is effective at all. Data we collected on the impact of the pulsing on the micro-climate about the tree did show the pulsing was effective at reducing the vapour pressure deficit (VPD) within the block, by as much as 10mbars on hot, dry days, averaged out at about 3mbars. This was a reasonable impact and should have reduced the water potentials within the tree, thereby reducing stress and potentially increasing photosynthesis. However, the difference between the two seasons in regard to the pulsing effect on the maximum VPD was not great. Perhaps we are playing right at the critical limits, so very subtle differences are effective. The 'on year, off

### **Batson Avocado Nursery** **ANVAS accredited Avocado Trees**

**Varieties include:**

**Fuerte, Hass, Sharwill, Wurtz, Pinkerton & Reed**

Batson's have been growing avocados on their farm on the Sunshine Coast for 30 years and have operated the avocado nursery on a commercial basis for 20 years. They have a wealth of experience and knowledge and are more than happy to spend the time with customers to pass on this knowledge.



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PO Box 213 Woombye Q 4559

Contact: Greg Hopper

# AVOMAN gets Mark of Approval

By Dell, Don and Peter Lavers  
growers from Atherton Tableland, Queensland

Avocado growers wanting to monitor costs and improve the efficiency of their operation will find AVOMAN a valuable management tool.

We are the Lavers family and we run a four thousand tree avocado orchard at Walkamin on the Atherton Tableland. We are pleased with what AVOMAN has done for our business. We were looking for a record keeping system that would let us encompass all activities on the farm and tighten our operations. We had tried the earlier versions of AVOMAN but it was not until Version 2 was released in 2003 that we seriously adopted it as the preferred method of recording all our farm data.

We found recording of block details, leaf and soil results and all input costs relatively simple and user friendly. We particularly liked the use of multiple blocks to quickly enter data like foliar sprays and fertiliser applications and then allowing AVOMAN to calculate the amount for each block. Also AVOMAN is useful for recording labour and machinery costs making it easier to establish gross margins.

Production figures are equally simple to enter. We would have liked to use AVOMAN to calculate packout details for each block but since we pick and pack from multiple blocks, this is not possible. AVOMAN, however, can tell us the total number of Class 1, Class 2, reject, loose sales and processing fruit for each variety per season.

We feel it is important to assess the performance of each block to know when the trees are at their performance peak and when production and quality start to fall away. This tells us when we should be ringing the bulldozer contractor to commence preparing the soil for a new planting.

The nutritional recommendations in AVOMAN are helpful but we tend to use them as a guide only rather than a firm course to follow. In the last couple of years we have been moving in the direction of biological farming and we try to put more into our soil in the form of organic materials - humus, carbon rich products, silica, compost tea etc - rather than straight NPKs.

Some members of our staff take a great deal of interest in entering data at the end of a job, preparing AVOMAN reports and discussing various details at the smoke-o table. This gives them a much greater interest in the management decisions and an opportunity to contribute.

On our farm we have as many mango trees as we have avocados and we would like to calculate gross margins for mangoes to benchmark them against avocados. The great flexibility of AVOMAN should allow us to do this and it will only require the time to enter the mango block details along with their particular fertilisers, chemicals etc. This is a task for a rainy day.

What of the future? We would dearly love to record our jobs on a hand held electronic organiser. This would make it much easier to enter data immediately after the job has been completed and allow the operator to enter directly into AVOMAN rather than into a workbook, then into AVOMAN. We would strongly urge the AVOMAN team to consider this as the next part of the AVOMAN evolution.

Congratulations to all the people who have contributed to the development of this useful management tool. Thanks to the AVOMAN team and to the many growers who used it and nursed it through its early developmental stages. Thank you also to the AVOMAN Guru who used to plague us frequently if we made errors when entering data in the earlier versions but is less obvious in Version 2. We love him dearly and if we have improved our entering skills and miss his appearances, we can still see him by selecting Help Index and typing "guru". He appears instantly with sneakers and wizard staff but at least you can now get rid of him by exiting Help.

If any progressive growers have not yet tried the new AVOMAN, we recommend that you give it a go.



**Four and a half stars.**

## Turning fruit on the ground into dollars in your pocket. continued from page 10

year' issue might be an important factor. In an 'off year' there is much greater foliage growth from early on than in 'on years', this would provide increased competition for plant assimilates, perhaps it is under these conditions that pulsing is most effective.

One interesting point to note, is the relationship between final yield fruit number and total weight per tree. In the second season, the trees displayed a fairly good straight linear relationship between the number of fruit per tree and total weight per tree. Pulsing did not appear to affect this. Normally one would expect that if the tree is struggling to carry a crop load, this relationship would see a reduction in the rate of increase in total weight with increasing fruit numbers. This result was for an 'off year' and as shown by the crop loads

achieved in the 'on year' we were probably not in the critical yield to tree size ratio to show this reducing trend. But the trees still shed a considerable amount of fruit. This suggests that summer fruit shed is not overly influenced by increasing crop load, that is, it does not appear to be simply an act of crop load 'balancing' by the tree. This further suggests that there are other factors involved that you, as a grower may be able to manipulate to reduce the severity of summer fruit shed. Thus, turning that fruit on the ground into dollars in your pocket.

Full research report available from Horticulture Australia, project AV00016, 'Reducing summer fruit drop in avocados.'

## Marketing Report

# Eat Globally...Think Locally

In February this year the 'Eat Globally...Think Locally' media relations campaign commenced. The key aim of the 2004 program is to continue to educate the media on the versatility of the Australian Avocado in easy, everyday dishes and adopt a global cuisine angle - 'Eat globally, think locally' to drive this message home.

The 'Eat Globally...Think Locally' campaign is currently in progress with the key objective as outlined above being achieved via a targeted media relations campaign.

Overall objectives of the 2004-05 program are as follows;

- To continue to increase consumer awareness of Australian Avocados as an 'every day' fruit, hence removing the 'luxury' tag;
- To distinguish the difference between each Australian Avocado variety;
- To raise the profile of Australian Avocados and its year round usage for all seasons - summer, autumn, winter and spring;
- To generate media interest in Australian Avocados and hence generate maximum media coverage, and;
- To subsequently increase consumption of Australian Avocados, among all ages and all seasons, increasing sales.

## Media Relations Program

Four media releases (each with a different world cuisine angle) make up the media relations program. Each will be distributed at strategic stages during the Public Relations program to create a 'drip' effect ie a steady output of information on Australian Avocados to a wide range of media.

A media kit is currently being forwarded to media as a 'ready reckoner' on Australian Avocado's. The kit includes:

- A tailored media release/s (as outlined above);
- Profile of the celebrity chef (endorsing the release) including photography where available;
- Product samples, where requested (if available);
- Relevant cuisine recipe, and;
- Australian avocado and recipe photography.

By **Trudy Gosney**

Trudy is a member of the HAL Professional Services team

## Recipe Development and Photography

Recipe development was commissioned, photography coordinated and four individual recipe sheets prepared for Australian Avocados.

The Italian media release has been issued to the media along with the Italian themed Avocado recipe.

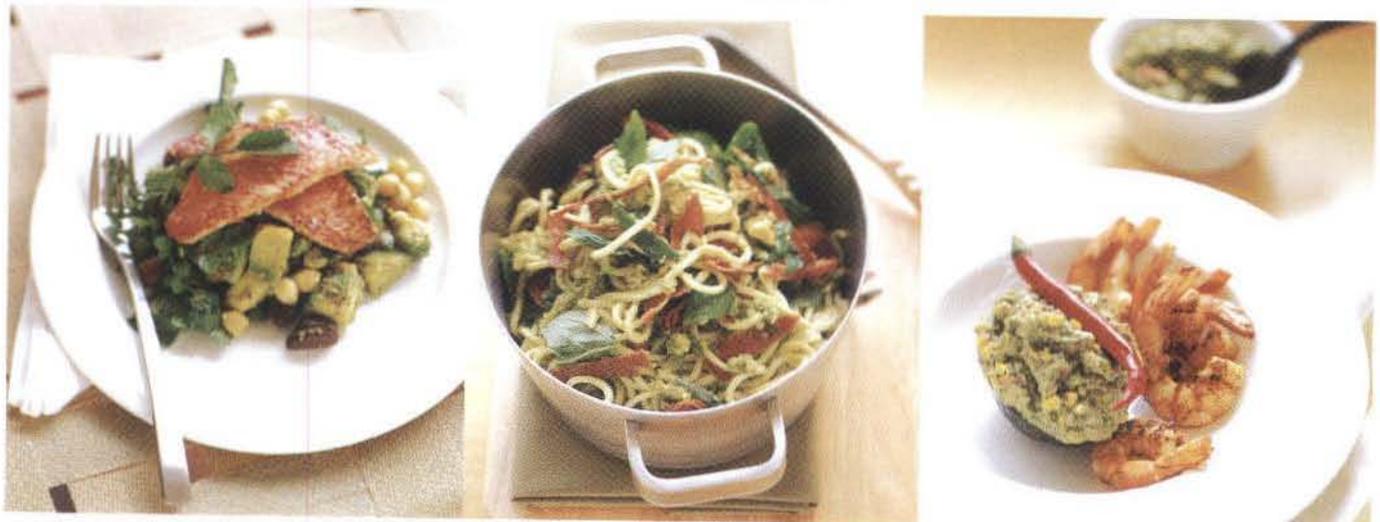
Each media release is being endorsed by a celebrity chef (who is well known and regarded in the cuisine being highlighted). For the Italian release Danny Russo from L'Unico restaurant in Sydney was quoted. Carol Selva Rajah, a highly regarded chef, was secured for the Asian focused Avocado release and the media release and recipe is being rolled out in July. The Asian release will be sent to media along with the Avocado recipe which has a modern Australian twist to it.

From July onwards the Asian, Mexican and African releases will be issued to the media.

## Target Audience

The Australian Avocado's target audiences for this Public Relations Program includes the following media:

- 'Foodie' media such as *Australian Good Taste* and *Australian Table*;
- Health-based media such as *Australian Slimming* and *Good Medicine*;
- Lifestyle/Women's magazines such as *New Idea*, *Fresh* and *Woman's Day*;
- Family/parenting media such as *Australian Family Circle*;
- Retirement publications such as *50 Something*, *Seniors*;
- Metropolitan newspapers including *The Australian*, *Daily Telegraph* and *The Courier Mail*;
- General suburban and regional press and radio;
- Metropolitan radio stations such as *Radio 2UE 'Healthy Living'*, and;
- Relevant television programs such as *Burkes Backyard* and *Fresh TV*.



Think Globally...Eat locally  
continued

**Media Relations Feedback to date**

Below is feedback to date on anticipated and negotiated coverage.

<b>Publications</b>	<b>Date</b>
<b>Newspapers</b>	
The Canberra Times	June 2004
The Sunshine Coast Daily	May/June 2004
The Australian	TBC (approx. 4 weeks)
The North Shore Times	July 2004
<b>Magazines</b>	
Good Medicine	August 2004
Australian Country Style	August 2004
Woman's Day	June 2004
That's Life	June 2004
New Vegetarian and Natural Health	TBC Grower interview
Heartwise	June 2004
<b>Electronic</b>	
www.dietclub.com.au	May/June 2004
Radio 2GB / Sheridan Rogers	TBC
Radio 5AA, BodyTalk	June 2004

A particular media 'coup' has been secured in *The Australian* food pages, with an interview between Helen O'Neill at *The Australian* and two Avocado growers. The piece will run as an insight into the world of the Avocado industry looking at the production chain, and varieties, through to how consumers can choose a ripe avocado. Two recipes will also run with the feature.

In addition to the 'Eat Globally...Think Locally' campaign any opportunities are maximised to secure editorial coverage. One such opportunity arose with the findings of recent research into Avocados on weight loss and the effect on coronary heart disease.

A media release was drafted based on the South African research into the health benefits of Avocados. Health writers were targeted and coverage secured. In particular Radio 5AA 'Bodytalk' segment, which airs every Sunday in Adelaide, interviewed Antony Allen, of Avocados Australia Limited. *Slimming magazine*, *The Canberra Times* and *The Gold Coast Bulletin* all plan to run a piece when space allows.

Focus over the next few months will also be on securing larger features on Avocados and where possible looking at all four recipes to drive the 'Eat Globally...Think Locally' message home.

*eat globally...  
think locally*

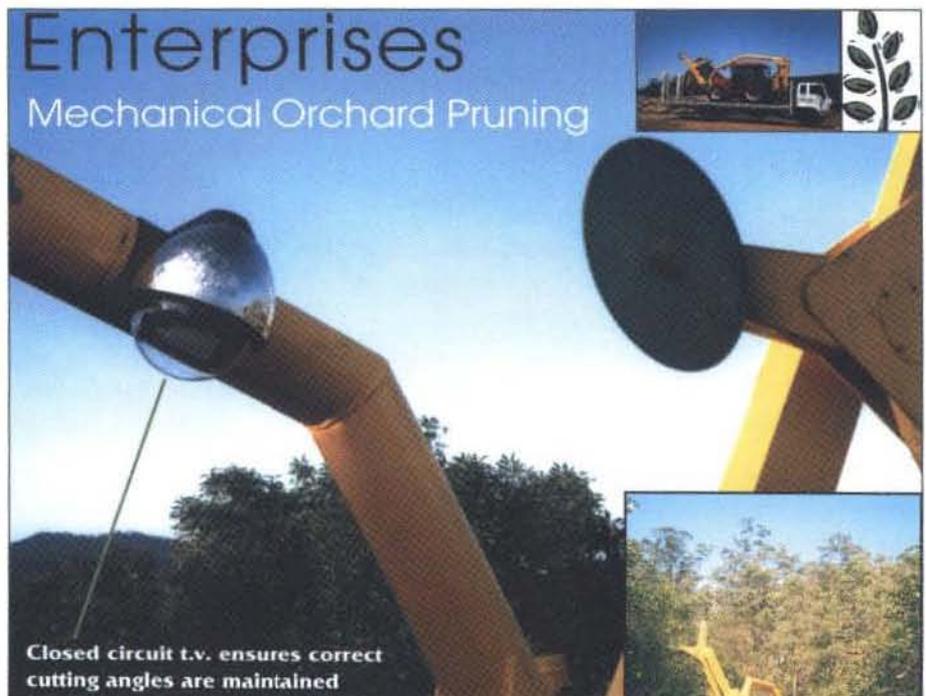
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# Exporting, Packaging, Marketing, Processing and Distribution

(Chapter 3 of Project AV030008 "Avocado Study Tour")

By Nola Stumm

Nola is a grower from the Mid North Coast of New South Wales

"Science has led from avocado scarcity to avocado over production, and marketing has failed go hand-in-hand with science". This quote from Horacio Frias of Argentina, summaries the crisis that the industry now faces. The speed of production change has been underestimated and marketing has just not kept pace with the change.

We now require worldwide cooperation in a marketing effort to increase consumption around the world. This needs to be done by creating a need in consumers and not by price reduction.



*Agrocannillas Auto packing...*

## EXPORTING

All major producing countries of the world including South Africa, Mexico, Chile, Peru, Kenya and New Zealand are looking to export into Europe and USA. These areas are seen to have huge market potential. Asia is also developing as a market for avocados.

### Spain

Spain sees itself as the gateway into Europe for exporting countries.

They offer packaging and distribution through their state of the art facilities. The African and South American countries are utilising these facilities but also market directly themselves. Spain relies heavily on exports into France and Europe since they have a low domestic consumption of 0.306kg per capita i.e. only 8% of European consumption.

### Mexico

With 22% of the world's export of avocados, Mexico depends heavily on USA and Europe, supplying 14% of European consumption. They are developing the Asian market also, exporting 14,353 tonnes into Japan in 2002. They have been successfully promoting in the USA over the years.

### South Africa

Exports directly into the UK, to a market that they have worked hard to develop, having successfully doubled the UK consumption. South Africa also exports directly into France, while Spain distributes for them through the rest of Europe. South Africa supplied 24% of European consumption in 2003.

### Israel

Israel has been exporting into Europe since 1960; however, their production started dropping after reaching a peak of 128,000 tonnes in 1980. It's now on the rise again, 2002/3 yielded 48,000 tonnes. They supplied 19% of the European consumption in 2003.

### New Zealand

NZ exports 60-65% of its production mainly into Australia 30% and USA 25%, plus 3 % into Asia, Japan, Korea, Singapore and Taiwan.

### Peru

Peru exports almost exclusively into Europe, suppling 7% of consumption. Of this 20% goes into the UK, 40% into France, 40% into Spain. A small amount goes into Canada.

### Chile

Chile exports 73% of its production into USA and Europe.

### Kenya

Kenya exports into the UK and France directly, or into Europe using Spain for distribution and/or packaging.

### Australia

Australia has not needed to export in the past. It has required imports to satisfy its market. However, this situation is soon to change unless we are capable of increasing home consumption faster than our increase in production. We are investigating export possibilities into Europe and Asia where we have exported some small amounts into Singapore.

Australia needs to continue its vigorous local promotion of avocados. If we can raise consumption from 1.9kg to 3kg per capita over the next four years this would absorb our growing production.

## PACKAGING

We visited excellent state-of-the-art packing facilities in both Africa and Spain. The importance placed on the integrity of the cool chain was emphasised in the latest fully CA controlled packing shed of Reyes Giuterrez in Spain, and in South Africa where fruit is packed straight into the CA containers, transported to the wharves and then to their European destination. The flexibility of the Montosa and Reyes

## Exporting, Packaging, Marketing, Processing and Distribution continued



*Hall & Sons Ripe and Ready...*

Giuterrez packing was most impressive with many forms of packaging: 2 packs hand wrapped, 4kg cartons, 10kg packs of smalls, 12kg packs, net bags and punnets of smalls - all done to order.

It became obvious that Australia, the only producing country that has not been dependant on export has enjoyed the freedom of self-packing, since the pressure of value adding has not been intense.

This situation needs to change if we are to be serious about increasing Australian consumption. We need to offer the consumer greater choice, this requires packaging facilities that can add value. In Australia this requires big capital investment since we do not have cheap labour. South Africa doubled their supermarket orders of 2 packs by using the firmness testing machine and then packing 'Ready in 2 days' and 'Ready in four days'. This accuracy meant dollars to them.

### PROCESSING

Mexico has 14 avocado processing plants for pulp and guacamole. South Africa has several pulping factories and 4 oil plants supplying the cosmetic industry. Australian value adding for avocados is still in its infancy. It will be crucial for growers to support any efforts made to remove 2nd grade fruit from our market floor into processing of any kind. There is great potential to improve our industry if this can be achieved.

### MARKETING AND DISTRIBUTION

Roger Jupe, CEO of Richmond Towers Ltd London, a specialist food marketing and advertising company, addressed the conference on the success of generic food marketing. He claimed that food promotion must be done by people passionate about the product, and that without promotion products will die. That puts the responsibility of avocado promotion back to the growers and packers worldwide, not the retailers, for they are not passionate about any product. He claimed that health benefits were the most successful tool in selling food today, on that basis we need to vigorously promote the many health benefits of the avocado for heart disease, diabetes and obesity. Research into health benefits need to

continue.

Science is coming to the aid of an export industry, troubled by the long sea voyages. It seems as if we can hold the avocado in perfect condition for at least 40 days with the use of special plastics (Xtend™) or ethylene blockers (SmartFresh™) which stall the ripening process. This technology is not in regular use yet, but should be by next season. The improvement in quality of exported fruit should in itself increase consumption in these countries. This technology could also influence the distribution chains in Australia.

### CONCLUSION

We were told that avocado growers worldwide need to collaborate to generate consistent generic promotion. To this end the world avocado growers are requesting a voluntary levy on every tray of avocados to go into Europe to raise money for a promotion campaign. We have to create a need among consumers (and potential consumers) through the promotion of the health benefits of avocados and avocado products, such that avocado is on their shopping lists!

With the interest being shown in healthy products today Dupe suggested that we should be targeting:

- Women's magazines for over 35yrs - health benefits
- New mothers magazines - first foods
- Men's sports magazines - potassium rich
- Men over 50yrs magazines for cholesterol and polyunsaturated
- Cooking magazines
- Lifestyle literature
- Editorials
- TV Lifestyle programs, and
- TV Advertising

Australia is to be congratulated for their initiative with TV advertising.

As Richard Jupe said *"Every product has its time, and this is the time for the avocado"*

That is our challenge.

## Attention Avocado Growers

For the best results and a personalized service consign your fruit to:

**W. ARKELL & SONS**  
**568 Brisbane**

Established since 1892

**Proudly serving Australian growers for more than 100 years.**

Contact our Sales Team

Phone **07 3379 8122** Fax **07 3379 4158**



# Avoman version 2 simpler, smarter, more powerful

Version 2 of the AVOMAN orchard management software was released in late 2003, replacing the first commercial version which came out in 1998.

After consultation with users of the first version and involvement of a grower planning committee, major changes were undertaken to update the program, load it with extra features and make it easier to use. Special effort has been made to ensure that it meets the changing needs of the Australian avocado industry.

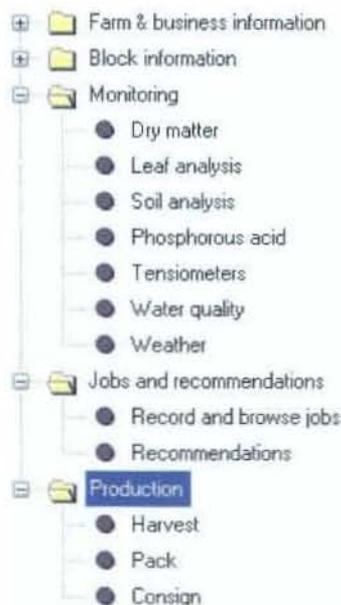


Figure 1. The expanding menu on the main page used to access different parts of the program.

By **Shane Mulo and Simon Newett**

Shane is a Senior Analyst/Programmer and Simon is a Senior Extension Horticulturist for Queensland Dept. of Primary Industries & Fisheries

The latest version has a stronger focus on recording and reporting, with more powerful tools for analysing farm records. The scope of information that can be recorded within the program has been significantly increased in response to the statutory demands placed on growers and feedback from users.

## New features

A number of new facilities have been added to the already extensive list of program features including:

- filterable data browsers to work with your records
- new, integrated harvest, pack and consign section
- fruit traceability
- water management chart
- notes templates (eg. to assist with Endosulfan reporting requirements)
- monthly crop calendars
- ability to use the best product and best rate features with your own nutrition schedule
- root phosphonate monitoring
- scheduled reminders

The filterable data browsers make it very easy to find specific records, for example the last time you sprayed for a particular pest, the last time you applied a particular nutrient, how many times in the season you applied a specific pesticide.

# We still need more fruit!! PRICE INCREASED TO \$0.70/kg

Natures Fruit Company ("NFC"), in conjunction with Olivado International Ltd ("Olivado"), is still seeking process grade avocados for pressing to oil.

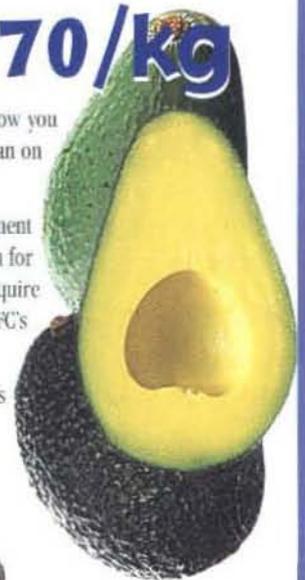
Due to strong demand for marketable fruit, we have increased the price for process grade fruit from \$0.50/kg to \$0.70/kg. The price will henceforth be quoted on a weekly basis; please contact NFC or visit our website [www.naturesfruit.com.au](http://www.naturesfruit.com.au) for latest pricing.

Olivado's processing plant in Cleveland is now operational and

oil is flowing. We would be only too happy to show you around. To organise an inspection, call Chris Nathan on the number below.

East Coast growers should have received a document from us regarding delivery points and specification for fruit. If you have not received a copy, or require clarification on any issue, please telephone NFC's Nambour office.

We look forward to your continuing support of this venture.



NFC  
P: 07 5441 3699  
F: 07 5441 3688



Chris Nathan  
Olivado  
P: 0407 658 077



Avoman version 2 - simpler, smarter, more powerful continued

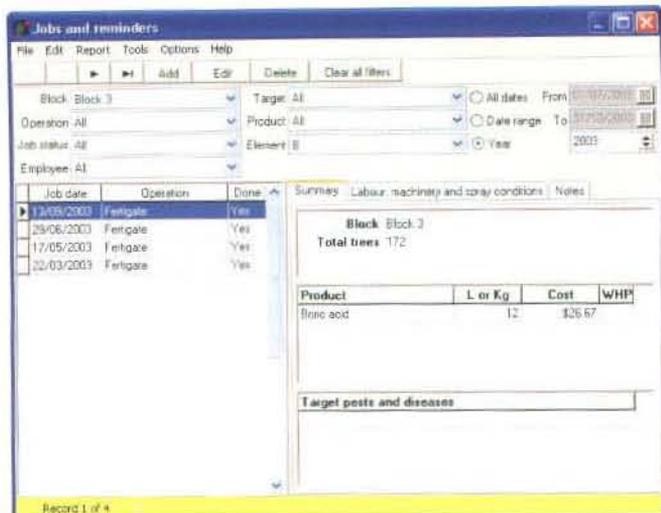


Figure 2. Example of how filters in the jobs browser can be used to quickly interrogate the list of jobs. In this case the filters have been used to find out how many boron applications were applied to Block 3 during 2003.



Figure 3. Tasks and job reminders appear on the main page. Jobs in red are overdue.

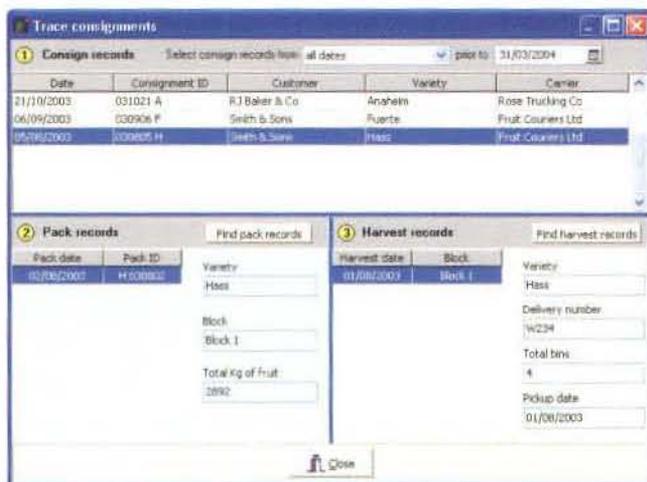


Figure 4. Harvests, pack records and consignments can be traced forwards or backwards. In this example a consignment is being traced back to the block it came from and shows the date it was harvested.

More flexible

To better suit a broader range of management styles and business sizes, all major aspects of the program can now be customised, including:

- employees
- machinery
- water sources
- varieties
- fruit grades
- farm operation properties
- customers
- chemicals
- target pests
- locations
- pack styles
- report headers & logos

Transfer reports to other programs, and email them

As well as being able to print tabular reports, you can now save them in a range of popular formats for transfer to other programs (such as MS Excel and Acrobat). This means that you can work with the data in other programs (such as spreadsheets) and you can also send them by email as attachments. For example you can now email consignment notes to your agent.

New reports and charts

Many new reports and charts are available including:

- a water management graph which compares irrigation, rainfall and tensiometer readings on the same chart
- irrigation, chemical, fertiliser and weather summaries
- comparative block costs
- harvest details
- pack details including packout %
- pack chart showing yields between blocks and seasons (in total kg, per ha or per tree)
- rejects • consignment note • weather overlay chart

In addition, the new filterable data browsers mean that you have wide control over the data that appears in reports.

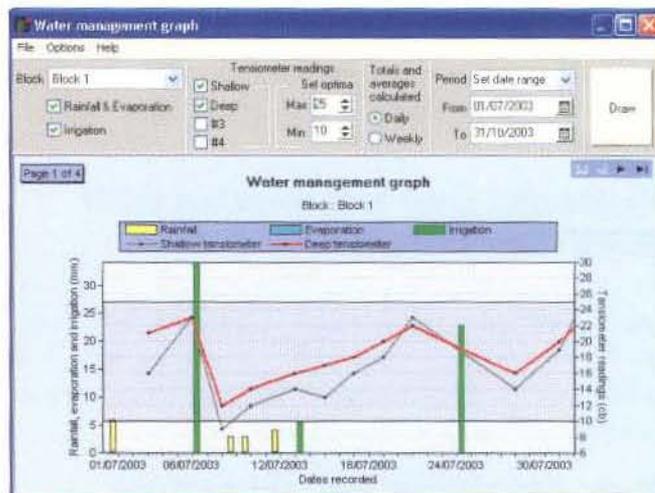


Figure 5. A water management chart. This chart enables you to compare the effect of rainfall and irrigation on soil moisture as measured by tensiometers.

Avoman version 2 - simpler, smarter, more powerful  
continued

Consignment note				Consignment ID: 030903 H					
<b>Packed fruit</b>									
Company: Doolittle & Co		Farm: Assisi Farm		Contact: Dr Fred Doolittle		Phone: 123456			
Address: Creatures Lane, Animals		Grower No: VV4356		Fax: 123457		Mobile: 0401 234 253			
IPSCA No: ICA 3409		AIRE: 12345678908876		E-mail: doolittle@oppsnt.com		Dispatch date: 03092003			
Consigned to: Smith & Sons		Via: Fruit Couriers Ltd		Variety: Hass					
First		Second		Third					
Count	Trays	Net \$/tray	Total net \$	Trays	Net \$/tray	Total net \$	Trays	Net \$/tray	Total net \$
13	30		39			27			
14	38		72			61			
16	38		61			12			
18	15		18			20			
<b>Totals</b>	<b>122</b>		<b>190</b>			<b>120</b>			
<b>Notes:</b> Note for agent: Please enter prices on this report and fax back to Fred on fax num ber 123457 Storage details prior to despatch: Cool room 2 days at 7 C Post temperature on despatch: 8 C Pallet numbers: 345 432									

Figure 6. Consignment notes can be generated from the Consignment section and e-mailed, faxed or sent with the consignment to the customer.

### Easier to use

While the function of the AVOMAN program has been substantially increased, greater emphasis has also been placed on making it easier to use. This has been achieved through a number of features including:

- a new Explorer style menu tree
- simplified data entry windows
- filterable data browsers which provide rapid, powerful and transparent access to all stored records
- streamlined and simplified reports

### Recommendations

Recent avocado research and development has been incorporated into existing agronomic recommendations in the program to ensure they remain relevant to industry. A new recommendation has also been created for the effective use of the growth regulant Sunny(r).

The recommendations matrix has been expanded to show a 12-week time frame and the process of actioning recommendations as jobs, including appropriate chemical and rate selection has been further simplified.

### Expanded crop information with more illustrations

The already extensive library of crop information within AVOMAN has been updated and expanded through collaboration with leading avocado research and extension staff. This section, which now includes many full colour pictures and drawings, is directly accessible from within AVOMAN via a new menu tree.

### Your data from the old version transfers to Version 2

Filters have been developed to automatically translate your records

from the previous version of AVOMAN into the latest version. This translation process includes interrogation of the chemicals database, deletion of products that are no longer registered and addition of new registered products.

### New manual, new program help files

A new, generously illustrated user's manual has been written to accompany the new version. An integrated help system has also been developed to accompany this version; if you need help from anywhere in the program simply press the F1 key on your keyboard and you will be taken to the appropriate help.

### Upgraded utilities

All utilities associated with the AVOMAN program have been improved and integrated directly into the AVOMAN program. These include the backup system with optional automatic backups, network file sharing support, a data archiver and a data repairer.

### What's next?

Work has commenced on updating the AVOINFO avocado reference database which was first released in 1998. In addition to the 4000 references included in the original version, the new edition (due for release in 2004) will incorporate the abstracts from the last two world congresses (Mexico and Spain) as well as many other references published since 1998.

Many thanks to all those who responded to the recent AVOINFO survey, your feedback will help shape the new AVOINFO interface.

Once the update of AVOINFO is released the project team will focus on maximising the adoption and effective use of the AVOMAN program by growers. This will be achieved by working with individuals and with Regional Productivity Groups.

### Enquiries

If you haven't yet upgraded to Version 2 or would like to purchase a copy of AVOMAN for the first time please get in touch with Simon Newett at the DPI&F Maroochy Research Station on phone 07 5441 2211, fax 07 5441 2235 or e-mail avoman@dpi.qld.gov.au. For those growers who purchased a copy of the first commercial version of AVOMAN the upgrade is free (the old version is no longer supported). For growers paying avocado levies purchasing a copy for the first time the program costs \$352 which includes the software, user's manual and support.

### Acknowledgements

We would like to acknowledge Avocados Australia Ltd, Horticulture Australia Ltd and the Queensland Department of Primary Industries & Fisheries for funding the "Advancing AVOMAN" project and for the contributions of officers from New South Wales Agriculture and Department of Agriculture Western Australia.

# News from around the world

## Hot weather disrupts South Africa's production pattern

By Fred Meintjes

The South African avocado industry is to have another "off" year in terms of production during 2004. Nevertheless, the country's major exporters are expecting a receptive market, with international cooperation continuing to provide a solid basis for market development.

South Africa is expected to ship around 8.5 million cartons of avocados this year compared to last year's 9.4 million carton export total. As an alternate-bearing crop, avocado yields were expected to be greater than last season but hot and dry conditions experienced in the major production regions during December and January put paid to hopes of a bumper haul. However, high rainfall during February and March is expected to boost fruit size.

According to leading players within the South African sector, the industry is continuing to develop, with the grower-exporter concept becoming increasingly prevalent. "There are strong indications that exporters with strong grower influence and involvement are gaining ground," says Derek Donkin, chief executive of South African Avocado Growers' Association (SAAGA).

This year, four main exporters are expected to handle more than 75% of the crop - Westfalia, Katope, Hall's and Afrupro, a new grower-driven

exporter founded two years ago. Last season, Westfalia handled some 28% of all South African avocado exports, followed by Afrupro with 14.9%, Katope with 12.9% and Hall's with 9.4%.

Dr Andre Ernst, a director of Afrupro, says a new producer-driven initiative has resulted in a substantial reduction in the number of exporters. "We realized that our biggest competition was ourselves," he says. "That is why there has been considerable consolidation amongst those companies that have a strong production base of their own or where growers are heavily involved with their export partners."

At an international level, cooperation between the world's leading avocado exporting countries is bearing fruit. "It is somewhat frustrating that we have not yet been able to make sufficient progress with the idea of joint generic promotions to increase consumption," says Nic Reay of Hall's, and former chairman of SAAGA. "But we now have a high level of information exchange which allows us all to make better marketing decisions. This has contributed to greater market stability."

According to Mr Reay, efforts are continuing to be made to convince various supply countries to participate in a joint campaign to boost consumption. "In the long run we really have no choice," he says. "We must grow the market or risk going out of business. It is always tough to get growers to part with their money, but we are really only talking about one euro cent per carton."

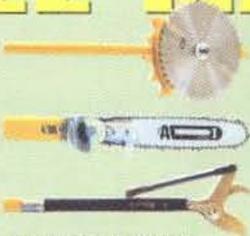
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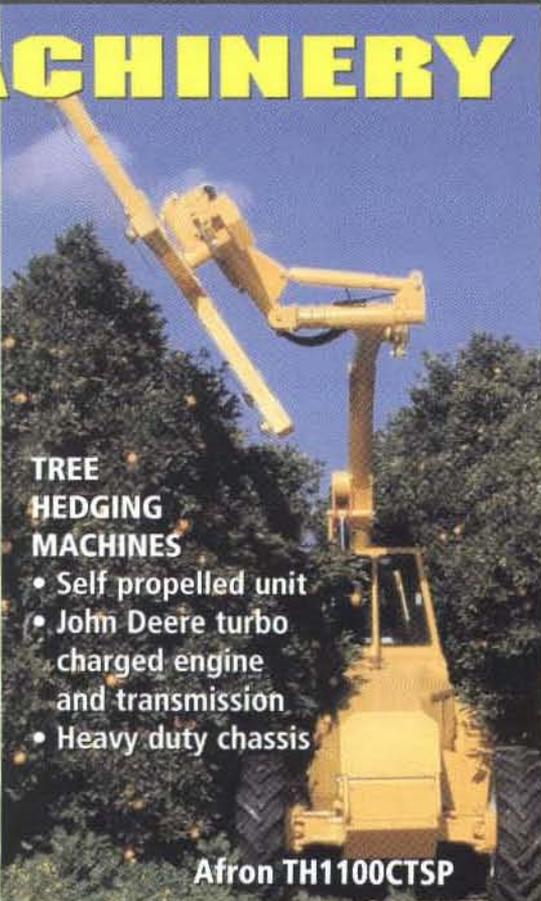
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News from around the world  
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It is also clear that the South African industry is facing increasing competition from other supplier countries in its traditional season. The Kenyan export crop is likely to be around 5million cartons this season, while increasing volumes of Peruvian avocados are now being sold in Europe during the traditional South African season. "We know now that the European market can absorb around 700,000 cartons per week but that any additional volume causes tremendous problems," says Mr Reay. "We experienced this last year when Peru, for various reasons beyond its control, shipped high volumes during particular weeks. Thanks to good communications we were warned in advance and were able to take certain measures to soften the impact."

South Africa's leading exporters are looking increasingly towards sourcing avocados outside South Africa to complement their own supplies both inside and outside their season. While Katope has been sourcing internationally for some time, Westfalia and Hall's are now looking at supplying more non-South African fruit in the off-season. This year, Westfalia plans to market around 500,000 cartons of avocados from Kenya and is also developing its relations with Peruvian suppliers, according to Louis Vorster, general manager of international business at Hans Merensky Holdings (Westfalia). Hall's is also planning to handle more Peruvian avocados. "The fruit will enter the market in any event so we might as well supplement our own supplies by sourcing from Peru in an orderly way," says Mr Reay.

Since the disastrous campaign of 1998 when the South African



industry shipped 12.8 million cartons to an already oversupplied market, much progress has been made in finding a balance between supply and demand. The industry is determined not to make the same mistake again and has managed to stabilize export volumes during "on" years at around 11 million cartons.

"The last three years have been relatively good ones and with 8.5 million cartons predicted for this year, we are hoping that the recent good rains will contribute to better size specification and therefore boost returns," says Mr Donkin.

The sector has also made tremendous progress in improving the quality of the fruit and the use of CA containers has made a huge difference, according to Mr Vorster. New technology to extend shelf-life, including Smart Fresh, is also being tested and shippers are seemingly excited about their prospects.

The South African industry has enjoyed a great deal of success in recent years in promoting the concept of ripe-and-ready-to-eat avocados, especially in the UK. The concept is also very popular in South Africa, where the Woolworths group has embraced this as a way of boosting sales.

If there are warning signs for the South African avocado industry, they lie in the arena of politics and currencies. The recent strengthening of the rand against the euro is a cause of concern for growers and exporters. "The exchange rate is busy strangling us," says Nino Burelli, chief executive of Katope South Africa. "At the present rate, South African growers could earn up to R9,00 per carton less than last season."

But perhaps the biggest cause of uncertainty is the threat posed by land claims in large parts of South Africa's northern fruit growing regions. From Levubu in the north to regions around Nelspruit in the northeast there have been instances of previously disadvantaged South Africans claiming farmland under a land transformation scheme, which was instituted by the government.

"The process is taking too long and no-one knows when it will be completed," says Piet Miller, a farmer-packer from Levubu. "While there is a great degree of goodwill amongst growers to contribute to a positive process of land transformation, we need to ensure that sustainability is maintained in order to ensure economic growth throughout South Africa's fruit growing regions."

*Eurofruit, May 04/No 363, Pages 87-88*

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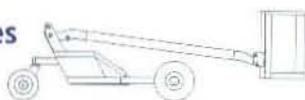
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### Promotions reinforce Chile's avocado deal

A generic advertising campaign, now in its third year, is fortifying shipments of Chilean avocados to the US market.

Export data statistics show that the Chilean avocado shipments to the US rose from 5.2 million cartons in 2001-02 to 7.6 million cartons last season. The rise in demand is said to have been aided by funding contributed by Chilean avocado shippers to a generic avocado promotional campaign organized by the California Avocado Commission for the third season running and in conjunction with the newly formed Chilean avocado Importers Association.

Chile's avocado export industry provided US\$900,000 to the generic advertising campaign in 2001 and US\$1 million in 2002. Last season's contributions rose to US\$4.3 million, making for a total advertising spend in the region of US\$12 million.

"In January last year the US approved a new regulation called the Check Off Law that obliges Chilean exporters to pay an assessment that is calculated on every pound of avocados consumed in the US," explains Jorge Covarrubias of Exportadora Santa Cruz, Chile's third largest exporter of avocados. "These moneys are all directed into the generic advertising scheme and we believe that the results have been of enormous benefit to the industry."

Part of last season's funding was used to finance a radio advertising campaign over the August to January period in Arizona, California, Texas, Oregon and Washington when Chilean avocados are in season. Details are yet to be revealed for the 2004 campaign.

Santa Cruz is planning to ship 1.4 million cartons of avocados overseas this coming season from a 2,700 hectare growing area. Annual growth is forecast in the region of 10%, with 95% of exports currently earmarked for the US. Export growth to this market is likely to strengthen following a clause in last year's Free Trade Agreement that will allow 50% of Chile's avocado crop headed for the US to enter the market duty free from this year onwards. In a further 12 years the remaining tariff barriers that currently stand at US\$1.25 per carton will also be removed.

Europe is also showing increased interest in Chilean avocados, with sales rising from 134,100 cartons in 2001-02 to 463,100 cartons in 2002-03. Arrivals take place over the September, October and November period, depending on volumes entering the market from Spain and South Africa.

"Europe takes just 5% of our total crop but it is a market that is growing at a good pace," says Mr Covarrubias. "We have been

shipping fruit to Europe for the past two years now and have established a good name for ourselves there. The French, Spanish and Italian markets have been especially keen to source top quality Chilean fruit."

Santa Cruz works with avocado growers throughout Chile, with production concentrated in the country's III and IV regions.

Exportadora Santa Cruz was formed by Guillermo Correa and Jorge Covarrubias some 15 years ago. Today the company is a leading exporter of avocados and citrus and Chile's premier shipper of persimmons.

According to Roberto Aylwin of Santa Cruz, the company expects its overall export programme to grow at an annual rate of 15%. "We are very comfortable with our existing clients but we shall be working on developing our grape and stonefruit programme to the US and Europe over the coming years, in addition to expanding volumes to Asia," he tells Trade Latin America.

This year Santa Cruz is set to export 1.4 million cartons of avocados, 500,000 cartons of grapes, 250,000 cartons of lemons, 250,000 cartons of onions, 200,000 cartons of kiwifruit, 120,000 cartons of persimmons, 100,000 cartons of stonefruit and 50,000 cartons of oranges and clementines.

*Trade Latin America, Spring 2004, Page 24*



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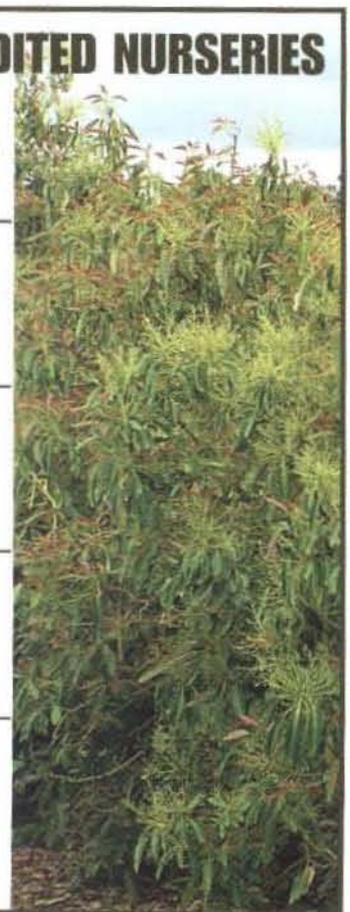
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# Rootstock Development Plan for the Australian Avocado Industry

By Tony Whiley

Tony is a researcher and consultant for Sunshine Horticultural Services Pty Ltd, Nambour, Queensland

If you have any comments or suggestions in regard to this rootstock development plan please forward them to AAL at either: PO Box 19 Brisbane Market 4106 or admin@avocado.org.au or fax to 07 3213 2480.

## Introduction

Productivity of fruit tree crops is known to be intrinsically dependent on the choice of rootstock, whether it be either their ability to resist diseases or to impart greater productivity to the scion through the enhancement of physiological processes. The apple and citrus industries are clear examples where fruit production has been improved by the development of rootstocks that in many cases are specific to scion and soil type. With citrus, it has also been shown that rootstocks can influence fruit quality through the expression of rind thickness and pulp recovery, disease susceptibility, salinity tolerance and cold hardiness.

In California, Webber (1926) observed, "no factor of the avocado industry is more important than rootstocks, and there is no problem that we know less about, or which requires a longer time to solve". Since then a considerable body of knowledge has been accumulated on the effect of avocado rootstocks on salinity and alkalinity tolerance, mineral nutrient uptake and Phytophthora root rot tolerance (Gabor *et al.*, 1990; Whiley and Lahav, 2001). However, despite the documented differences in environmental and edaphic responses between the horticultural races, with the exception of the Israeli rootstock program there has been little progress made on the selection and development of rootstocks to improve productivity and fruit quality. With *Phytophthora cinnamomi* developing as a serious threat to avocado production worldwide, there has been considerable effort expended on the search for Phytophthora-resistant rootstocks. This area of investigation has been largely unsuccessful based on the investment/outcomes ratio as after 40 years of research we appear no closer to having rootstocks with "commercial resistance" to Phytophthora, i.e. rootstocks that will stand up to root rot without the application of fungicides.

There are good reasons for this lack of progress when the genesis of the crop and disease are considered, viz. the evolutionary centres are in completely different geographic regions. It is unlikely that "commercial resistance" will be achieved without the intervention of biotechnology to develop inter-specific hybrids through protoplast fusion techniques as is currently being researched in Florida (Pliego-Alfaro, 2001). However, this research is in its infancy and it is likely to be many years before commercial benefits will be achieved. Despite this some commercial gains, through moving production away from extremely root rot sensitive cultivars, have been achieved and continued progress in root rot tolerance can be expected as new material is sourced and tested.

## Rootstocks and Citrus Production

Rootstocks are used in the production of many fruit crops to improve performance under a variety of different conditions. Within citrus many commercial varieties are polyembryonic and come true-to-type from seed, hence the benefits from vegetative propagation of scion material are not apparent. Despite this, almost all citrus trees planted in the major production areas of the world are propagated on rootstocks (Wutscher, 1979). The advantages of using rootstocks in citrus production include the following:

1. Convey cold-hardiness, salt tolerance and tolerance to high soil pH (Sour orange);
2. Tristeza and drought tolerance (Rough lemon);
3. Smaller tree, high fruit quality, cold hardiness, root rot resistance and tristeza tolerance (Trifoliata);
4. Root rot and tristeza tolerance, cold tolerance and good fruit quality (Citranges Troyer);
5. Burrowing nematode resistance (Carrizo);
6. Tristeza tolerance, salt resistance (Rangpur lime);
7. Root rot resistance (Alemow); and
8. Tristeza, salt and cold tolerance, high fruit quality (Cleopatra mandarin).

## International Avocado Rootstock Use and Improvement Programmes

### California

California has long been the leader in rootstock research where extensive effort has been invested since the 1950's in developing Phytophthora root rot tolerance. Commercial progress has been made as the industry has progressed from the wide scale use of the highly sensitive 'Topa Topa' to the more tolerant 'Duke 7'. The development of improved rootstocks has spawned the requirement for vegetatively propagated material to uniformly retain the genetic improvements attained. To facilitate this prerequisite an etiolation technique of vegetative propagation of avocados developed by Frolich and Platt (1972) of the University of California was subsequently modified by Brokaw nurseries for commercial production of cloned avocado rootstocks. To date, the most successful rootstock propagated by this technique is 'Duke 7' although in recent years there has been a number of other elite rootstock lines (e.g. 'Thomas' and 'Torro Canyon') used in the production of trees. Based on 2001-2002 nursery production data it is estimated that approximately 60% of California's avocado nursery trees are currently sold on cloned rootstocks.

With the identification of a number of rootstock lines with apparent tolerance to Phytophthora root rot a breeding program was established in the 1990's focussed on improving the level of tolerance in rootstocks

## Rootstock Development Plan for the Australian Avocado Industry continued

to above that which had already been achieved. To facilitate this, groups of trees including 'Thomas', 'Spencer', 'Torro Canyon' and 'Zentmyer' have been established in isolation with trees planted in close proximity to each other to allow hybridisation between the different cultivars. Fruit are collected at maturity and the resulting seedlings challenged with *Phytophthora cinnamomi*. Surviving seedlings are then cloned, grafted to 'Hass' and placed in *P. cinnamomi* infested field sites and evaluated under these conditions. To date 'Zentmyer' is the best rootstock that has been produced from the breeding program.

### Chile

The Chilean avocado industry is arguably the fastest growing in the world today, having reached 20,000 ha in 2001 and still expanding at the rate of 1,000 ha per year. There are some well run avocado nurseries in Chile where a high level of hygiene is applied however, the industry is planted on seedling rootstocks. The main cultivar is Hass and about 95% of the trees are propagated on 'Mexicola' - a Californian rootstock cultivar, which is highly susceptible to Phytophthora root rot. As the disease will also attack the suberised roots of this rootstock infected trees do not generally respond to phosphonate treatment. Fortunately, due to the arid climate, Phytophthora root rot pressure in Chile is low and in the past the disease has not posed a great threat to the industry however, with new orchards being planted on marginal hillside soils problems may occur in the future. The other rootstock being used by the Chilean industry is 'Nabal' which is planted where salinity is a problem. This rootstock has some tolerance to salinity, which is not present with 'Mexicola'.

The Chilean industry is beginning to move across to cloned 'Duke 7' rootstocks with the major nurseries implementing the technology developed in California. Micro-clones of 'Duke 7' are also being imported from Allesbeste Nursery in South Africa and grafted to the required scion variety in Chile.

### Florida

The Florida avocado industry is predominately based on West Indian or West Indian/Guatemalan hybrid cultivars although some straight Guatemalan cultivars are grown (e.g. Reed). Due to the poor on-tree retention when fruit reach maturity, over 23 cultivars are commercially grown to extend the production season. In general the industry has a low technology base and has had minimal investment in research (particularly during the 1980's and 1990's). Seedling rootstocks are used and appear to have been selected mainly for nursery convenience (availability and good vigour as seedlings) rather than as a result of documented research. The two most favoured rootstocks used are 'Waldin' (West Indian) and 'Lula' (West Indian x Guatemalan hybrid). 'Lula' is also sent to California where it is used as a "nurse" seed in clonal rootstock propagation. There is no programme to ensure propagation material is free of avocado sunblotch viroid, although it and many symptomless variants are known to be present in Florida avocado material. Phytophthora root

rot is not a major problem for this industry due mainly to the calcareous soil on which the industry is based hence there is little interest in developing tolerant material.

### Israel

When the Israeli industry began expanding in the 1960's rootstock material was drawn from the mainly Mexican-race seedling population that had long been planted in the country. Over a period of time seeds of Guatemalan and West Indian race cultivars or their hybrids were also propagated for use as rootstocks (Homsy, 1995). The rootstock research of Dr A. Ben-Ya'acov over many years resulted in a number of recommended mother trees to source for rootstock material as well as defining material suited for clonal production, viz. 'VC 6', 'VC 51', 'VC 65' and 'VC 66'. However, demands for new nursery trees are still mainly for seedling rootstocks of 'Deganya 117' and 'Ashdot 17' - both local West Indian seedlings. Since the retirement of Dr Ben-Ya'acov Israeli avocado rootstock improvement research has lapsed.

### New Zealand

Avocado production in New Zealand is based on 'Zutano' seedling rootstocks. The choice of 'Zutano' appears to have been made on availability and perhaps nursery performance rather than for sound horticultural reasons. 'Zutano' is a Mexican x Guatemalan hybrid but

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*Rootstock Development Plan for the Australian Avocado Industry  
continued*

little is known about specific attributes that it contributes as a rootstock. Possible “physiological” incompatibility due to its Mexican genes when grafted to ‘Hass’, should be investigated as well as its ability to tolerate *Phytophthora cinnamomi*. The former may negatively impact on postharvest fruit quality.

Rootstock improvement is being addressed by the New Zealand industry but on a limited input basis. A database is being maintained where details of high-producing trees are entered with the intent of rootstock recovery should records indicate a consistent trend. Sufficient data for sound decision making is currently unavailable at this point in time.

**South Africa**

For many years the South Africa avocado industry was planted on seedling ‘Edranol’ rootstocks. However, during the 1990’s the Californian cloning technology was introduced into nurseries and tree production swung strongly across to vegetatively propagated ‘Duke 7’ rootstocks. Today, in excess of 80% of trees planted are propagated on cloned rootstocks (mainly ‘Duke 7’ but there is now a shift to ‘Merensky 2’ and ‘Velvick’).

Recently Merensky Technological Services (MTS) have instigated a rootstock breeding programme with the objective of improving *Phytophthora* root rot tolerance. The techniques being used are similar to those being implemented by the University of California with the exception being that MTS is using locally selected parents to produce seedling progeny. To date there has not been any release of improved rootstocks from this programme.

**Current Avocado Rootstock Practices in Australia**

The Australia avocado industry has continued to expand for the most part, using a range of rootstocks selected by nurserymen for which there is no data to substantiate their performance. Despite a technically sound nursery scheme (ANVAS) to supply disease-free, true-to-type trees to industry, the development and use of superior rootstocks largely remains in limbo. ‘Velvick’, (predominantly Guatemalan race) is one local rootstock where a body of performance data is slowly being developed both within Australia and overseas. For instance, recent testing of eight rootstocks grafted to ‘Hass’ in South Africa has revealed that 18 months after planting, ‘Velvick’ was in a group with the highest tolerance to *Phytophthora* root rot (Table 1) (Kremer-Köhne and Duvenhage, 2000). Furthermore, with anthracnose studies in Australia comparing ‘Hass’ fruit from trees grafted to either ‘Velvick’ or ‘Duke 6’ rootstocks, it was found that fruit from ‘Velvick’ trees developed less disease. It was also shown that the correct choice of rootstock contributed a greater level of anthracnose control than the use of fungicidal programs (Willingham et al., 2000). Currently, the greatest disadvantage of using ‘Velvick’ as a rootstock is the vigour that it imparts to the scion that may in later years negatively impact on canopy management.

Rootstock	% Trees with health rating of ≤1*
Velvick	100
Merensky II (Dusa)	97
Merensky III (Evstro)	96
Duke 7	87
Merensky IV (W 14)	86
Gordon	63
Edranol seedling	63
Jovo	47

\* Rating on a 0 - 10 scale, where 0 = healthy and 10 = dead.

*Table 1 The health of ‘Hass’ trees exposed to *Phytophthora cinnamomi* on various vegetatively propagated rootstocks planted in February 1998 and rated in July 1999 (From Kremer-Köhne and Duvenhage, 2000).*

There is little doubt that a focussed approach to rootstock improvement within the Australian industry can result in the delivery of major benefits which will in many ways address the most critical issues impeding future development and expansion of production. The recent funding of a focussed research program to source and explore the value of new rootstock material for the industry has improved its chances of making commercially significant gains in the future.

**Plant Health Issues in Future Avocado Rootstock Improvement**

Plant health issues are already being addressed by the Australian avocado industries Varieties Committee and their administration of the ANVAS nursery scheme. Key issues are the use of Avocado sunblotch viroid (ASBV) free material for the production of nursery trees. This is currently being achieved through the “Registered tree” programme, which provides nursery access to accredited ASBV-free propagation material of the major identified scions and rootstocks important to the industry. Nuclear mother block sources of propagation material are located on State government facilities and material from these blocks is viroid-indexed on an annual basis with every tree in the block being indexed within a five-year term. Multiplication blocks of trees held by nurseries for day-to-day propagation are also sampled on an annual basis with all trees being re-indexed over a 20-year cycle. Appropriate re-indexing action is carried out if any breach in the disease integrity of these blocks is discovered. The development of a Reverse

## Rootstock Development Plan for the Australian Avocado Industry continued

Transcription-Polymerase Chain Reaction (RT-PCR) technique for ASBV indexing has improved the accuracy of diagnosis but has also shown that a significant number of mother seed trees used in the past are infected with symptomless variants of ASBV. Similar variants have also been detected in all other countries where RT-PCR technology has been used (New Zealand, South Africa and the USA). The most recent information gathered from California and Florida indicates that while no visible symptoms indicating the presence of variants can be found on infected trees, yield reductions can be in the order of 10-15% (J.A. Menge, Riverside, 2001, personal communication; D.N. Kuhn, Cutler Ridge, 2002, personal communication). The current policy of excluding propagation material from ANVAS that has either ASBV or one of its variants present should continue to be strictly enforced. In addition, any future new rootstock material should be free of ASBV or its variants as a prerequisite for introduction into the nursery scheme and that ANVAS nurseries should not be allowed to continue propagating material for sale that is not from accredited ASBV-free sources.

While not a propagation transmissible disease, Phytophthora root rot is nevertheless a serious disease of avocado that can be distributed with infected avocado trees through infected soil. The ANVAS programme was first implemented to address this potential problem and protocols drawn up to ensure that the risk was minimised. The scheme has been a success and should continue in its present form.

### Rootstock Selection Criteria

Horticultural performance of fruiting scion cultivars is affected in several ways by budding onto different rootstocks (Wutscher, 1979). Among these are: (1) early fruiting (precocity) and avoidance of juvenility problems; (2) uniform tree size; (3) uniform cropping and fruit quality control; (4) tolerance to poor soil conditions such as salinity, high pH and poor drainage; and (5) tolerance to Phytophthora and other soil diseases, parasitic nematodes and viruses. When selecting rootstocks for use by the Australian avocado industry the following criteria should be observed:

1. Sustainable high productivity;
2. Optimise fruit quality, viz. minimise post harvest diseases, flesh discoloration and reduce chill damage;
3. Phytophthora root rot tolerance with resistance to trunk cankers; and
4. Manageable vigour.

### Strategies for Rootstock Improvement

Genetic improvement of tree crops is notoriously slow due to the length of both the juvenile stage and the cropping cycles, which prolong the time taken to produce useful data. However, there are several strategies that can be applied to improve and accelerate rootstock development for the Australian avocado industry. Some are

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### Corporate Structure

How would you describe the nature of your operations (please circle)?

Individual	Partnership	Company	Trust
Lessee	Cooperative	Other (please specify)	

Please indicate the area of property that you crop for avocado production (please circle)

0.5 - 5 ha	6-19 ha	20-49 ha	50-99 ha
100-149 ha	150-199 ha	200-499 ha	500 ha+

### Special Interests

Please tick your main areas of interest from any of the following:

- |  |  |
|--|--|
| <input type="checkbox"/> Consumer information                    | <input type="checkbox"/> Production management   |
| <input type="checkbox"/> Environmental management/sustainability | <input type="checkbox"/> Quality Assurance       |
| <input type="checkbox"/> Organic farming systems                 | <input type="checkbox"/> Technology/innovations  |
| <input type="checkbox"/> Water management                        | <input type="checkbox"/> Marketing               |
| <input type="checkbox"/> Field days                              | <input type="checkbox"/> Supply chain management |
| <input type="checkbox"/> Pest management                         | <input type="checkbox"/> Key political issues    |
| <input type="checkbox"/> Food safety                             | <input type="checkbox"/> Other (please specify)  |

## Payment Options

Grower Membership of Avocados Australia is \$110 pa (including GST). You can pay your membership by cheque or credit card. To pay your membership fee, please choose one of the following options:

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Please charge \$110.00 to my credit card. Details are listed below.

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Expiry date: \_\_\_\_\_

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I do not give Avocados Australia Ltd permission to allow my postal contact details to be accessed by other organisations other than Avocados Australia Ltd which offer beneficial products and services.

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## Avocados Australia

### Reply Paid 19

### Brisbane Markets Qld 4106

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For more information or assistance please go to

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## Rootstock Development Plan for the Australian Avocado Industry continued

already incorporated in the currently funded AV01007 while others could be added depending on the availability of industry resources. Rootstock improvement strategies are outlined below:

1. Develop avocado vegetative propagation expertise for rootstock cloning in Australia which includes researching some of the issues which give poor results with the current techniques (objective of AV01007). Time frame: Jan 2002 to Jan 2004
2. Field test data developed from the "nutrition uptake and translocation study in nursery trees" currently being carried out by Colleen Mullins to see if a small tree evaluation technique is effective (objective of AV01007). Time frame: Jan 2004 to Jan 2008
3. Develop a rootstock performance database on a genetically diverse range of material grafted to 'Hass' and 'Shepard' (objective of AV01007). This information will provide a platform on which to evaluate new material in the future. Time frame: Jan 2002 to Jan 2012
4. Recover and test rootstocks from documented high performing trees in Australian orchards (objective of AV01007). Time frame: Jan 2002 to Jan 2012
5. Recover and test "escape" rootstocks from orchards in Australia that have exposure to *Phytophthora cinnamomi* (objective of AV01007). Time frame: Jan 2002 to Jan 2012
6. Develop/access biotechnology methodology that can provide genetic mapping of avocado germplasm. This technology has the potential to accelerate the development of new elite rootstock material. The industry can either foster the development of avocado-specific technology within Australia or access services from overseas (University of California or USDA in Florida). The former would require project funding outside of AV01007 while the latter will attract a fee for service. Time frame: Allow 3-5 years for the development of avocado specific technology within Australia. Overseas expertise would need to be investigated to see if technology has been developed to a form useful to the Australian avocado industry.
7. Import improved rootstock material from other countries for evaluation under Australian conditions (objective of AV01007). Time frame: Jan 2002 to Jan 2012
8. Instigate a rootstock breeding program using the pre-mentioned selection criteria to evaluate the progeny. This is a long term strategy which would need considerable industry involvement to be affordable. At present breeding programmes (California and South Africa) are focussed on improving *Phytophthora* root rot tolerance and progeny are screened as nursery trees by challenging roots with *Phytophthora cinnamomi*. To pre-evaluate progeny for production and fruit quality aspects other screening technologies would need development prior to pursuing this activity. Alternatively, breeding parents that imparted known high productivity could be used and the progeny screen for *Phytophthora* root rot tolerance prior to field planting. Time frame: a minimum of 12 years would be required to achieve industry-useful results
9. Review appropriate technology for avocado sunblotch viroid indexing every four years. RT-PCR technology was developed to detect

## Rootstock Development Plan for the Australian Avocado Industry continued

ASBV by Dr Rob Harding of the Queensland University of Technology in 1996. This technology is currently being used internationally to detect the presence of ASBV or its variants. While much more sensitive in detecting ASBV than previous technologies a watching brief should be implemented so that more advanced technology with greater sensitivity can be adopted should it become available in the future. Time frame: every four years from Jan 2002 (possibly funded by the AAL Varieties committee).

10. A shift by industry from seedling to cloned rootstocks will only occur if economic benefits can be demonstrated. Furthermore, to reduce the risk associated with narrowing genetic diversity it is desirable that the industry uses 3-5 cloned rootstocks in new orchards. As the cost of trees will be higher than those propagated on seedling rootstocks it is unlikely that ANVAS nurseries will promote the sale of trees on cloned rootstocks. Creating grower awareness of the benefits from using cloned material is the most likely way of introducing improved genetic material into the Australian avocado industry. This is best achieved through articles published in industry journals (Talking Avocados) and through discussion and promotion at field days etc. (objective of AV01007). Time frame: Jan 2002 to Jan 2012

### Communication of Results from AV01007 to Industry

Communication is one of the cornerstones of implementation of new technology and to be most effective all parties interested in the technology need to be correctly informed. For a successful uptake of new rootstocks derived from local research or imported from overseas reliable data is essential and growers need to be informed of the comparative benefits from using the material and the nursery industry

given access to relevant information on propagation technology and access to ASBV-free germplasm.

It is proposed that a component of the Rootstock project (AV01007) be to prepare timely articles for publication in Talking Avocados so that the nursery industry and Australian avocado growers be kept informed of new developments that may improve the quality of genetic material available for future use. Furthermore, a suggestion from the Varieties Committee is that a feature page be put aside for plant improvement information and that this page also carry the names and contact details of those nurseries that have ANVAS accreditation.

### Commercialisation of Intellectual Property

The current trend is that new rootstocks and scion varieties from breeding and selection programs are usually covered by Intellectual Property rights which need to be managed during commercialisation. It is desired that equal opportunity be given to all participating ANVAS nurseries in accessing new material made available to the Australian avocado industry. For this to occur the Avocados Australia through its Varieties committee will need to apply to the appropriate licensor for the commercialisation rights.

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## Avocado Growers State Organisations

### Atherton Tableland Avocado Growers' Association

Merrilyn Land, President 07 4093 2206  
Sue Christensen, Secretary 07 4086 6056  
Fax: 07 4086 6057

### Bundaberg & District Orchardists' Committee

Geoff Chivers, President 07 4153 3007  
Fax: 07 4153 1322

### Sunshine Coast Avocado Growers Association

Henry Kwaczynski, President 07 5442 1767  
Fax: 07 5442 1767

### West Morton Avocado Growers' Group

Rod Dalton, Convener 07 5466 1316  
Fax: 07 5466 1497

### Tamborine Mountain Local Producers' Association

Bruce Bartle, President 07 5545 1527  
Bev Buckley, Secretary 07 5545 2617

### New South Wales Avocado Growers Association Inc.

Chris Nelson, President 02 6569 0924  
Alison Tolson, Secretary/Treasurer 02 6569 0872  
Fax: 02 6569 0885

### South Australia Avocado Growers' Association

Colin Fechner, President 08 8541 2819  
Greg Liebig, Secretary 08 8541 2174  
Fax: 08 8541 2174

### Avocado Growers' Association of Western Australia

Alan Blight, President 0417 179 127  
Eleanor Press, Secretary 08 9776 1332  
Fax: 08 9776 1332

## Directory of Government Contacts

### Australian Government Departments & Agencies

**Department of Agriculture, Fisheries and Forestry**  
02 6272 3933 [www.daff.gov.au](http://www.daff.gov.au)

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**Agriculture Portal** [www.agriculture.gov.au](http://www.agriculture.gov.au)

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**Australian Bureau of Statistics**  
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**Australian Competition and Consumer Commission**  
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**Australian Customs Service**  
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**Australian Pesticides & Veterinary Medicines Authority**  
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**Australian Tax Office**  
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**Australian Quarantine and Inspection Service**  
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**The Ministerial Council on Consumer Affairs**  
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**New South Wales**  
NSW Agriculture  
02 6391 3100 [www.agric.nsw.gov.au](http://www.agric.nsw.gov.au)  
Dept of State and Regional Development  
02 9228 3111 [www.business.nsw.gov.au](http://www.business.nsw.gov.au)

**Northern Territory**  
Dept of Business, Industry and Resource Development  
[www.nt.gov.au/dbird/dpif](http://www.nt.gov.au/dbird/dpif)

**Queensland**  
Dept of Primary Industries  
07 3404 6999 [www.dpi.qld.gov.au](http://www.dpi.qld.gov.au)  
Dept of State Development  
07 3225 1915 [www.sd.qld.gov.au](http://www.sd.qld.gov.au)

**South Australia**  
Dept of Primary Industries and Resources [www.pir.sa.gov.au](http://www.pir.sa.gov.au)  
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**Tasmania**  
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03 6233 6496 [www.dpiwe.tas.gov.au](http://www.dpiwe.tas.gov.au)  
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