



The Australian Newsline

# Talking Avocados



Vol 8 Number 1

March 1997



- New Tax Reportable Payments System
- World Market for Avocados
- Citrus Research - Helping Avocados

# AUSTRALIAN AVOCADO GROWERS' FEDERATION

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## Calendar of Events

### March

- 17 **Australian Avocado Growers Federation** - Varieties Committee and R, D & E Subcommittee meetings, QFVG building at Brisbane Markets commencing 1.30 p.m.
- 18-19 **Australian Avocado Growers Federation** - Board Meeting, QFVG building at Brisbane Markets commencing 8.30 a.m.
- 19 **Bundaberg & District Orchardist's Association** - meeting Fruit & Vegetable Growers' Office, Barolin St. Bundaberg commencing 7.30 p.m.
- 25 **Avocado Growers Association of WA** - meeting Conference Room, Market City commencing 5.30 p.m.
- 26 **NSW Avocado Association** - Annual General Meeting, Summerland House With No Steps commencing at 10 a.m.

### April

- 1 **Avocado Growers Association of WA** - meeting Conference Room, Market City commencing 5.30 p.m.
- 16 **Bundaberg & District Orchardist's Association** - meeting Fruit & Vegetable Growers' Office, Barolin St. Bundaberg commencing 7.30 p.m.

### May

- 6 **Avocado Growers Association of WA** - meeting Conference Room, Market City commencing 5.30 p.m.
- 12-14 **AHC** - Marketing Edge Conference in Adelaide. Contact Amanda Wheeler 02 9330 1319.
- 21 **Bundaberg & District Orchardist's Association** - meeting Fruit & Vegetable Growers' Office, Barolin St. Bundaberg commencing 7.30 p.m.

### June

- 3 **Avocado Growers Association of WA** - meeting Conference Room, Market City commencing 5.30 p.m.
- 3-5 **Fresh Produce '97** - Melbourne Exhibition Centre.
- 18 **Bundaberg & District Orchardist's Association** - meeting Fruit & Vegetable Growers' Office, Barolin St. Bundaberg commencing 7.30 p.m.

### Front Cover:

An aerial view of Rotorua New Zealand, where the 1997 Avocado Industry Conference will be held.

# Editorial

Like most things in life there are activities we like to do and activities we put off because we hate them. I liked growing avocados but detested spraying, a task that was avoided if at all possible.

Is marketing and market related subjects like that with you?

The results of the Reader Survey from last issue indicate that readers want more technical information and less about marketing, indicating a lack of interest or exceptional knowledge of the subject. Unfortunately, this issue of Talking Avocados does the exact opposite and provides plenty of marketing information.

Planning for an issue of this magazine starts months before the date of publication. Articles have to be requested, written and co-ordinated. It all takes time.

Notwithstanding, earning a living from avocados is more than growing them, although that phase in the life of an avocado is very important. Just as important, or perhaps more important, is being paid for your efforts and that can only occur if a market exists and you can access that market.

Markets vary, some realise good prices while others see returns barely covering costs. How can a grower maximise returns from selling avocados?

One way is to fully utilise the opportunities that are available. On page 21 of this issue are export figures that show some Australian avocados sold in Germany averaged over \$46 per tray. How do your returns compare?

To tap into profitable markets you need information. For instance, did you know that avocado market prices for 28 cities around the world are available on the Internet. Perhaps spending a bit of time in front of a computer may not be such a bad idea.

If returns from exports are more profitable than domestic sales, do you know which markets are worth tackling. Market research information could point you in the right direction.

If you do not grow sufficient avocados to sustain an export drive, do you know how to tap into the export market?

Do you know which domestic markets are the most profitable and why? Perhaps this information should be made available. Perhaps the AAGF could correlate market prices and trends and put that type of information on the Internet.

If you send fruit directly to the market are your returns as great as that of a neighbour who utilises the services of a marketing company?

Perhaps after all, to be financially rich you need to be information rich!

*Orf Bartrop  
Editor*

## HRDC Board Announces New Executive Director

Lindy Hyam has been appointed Executive Director of the HRDC replacing Dr Chris Rigney.

On announcing her appointment David Minnis, Chairman of HRDC said of Ms Hyam "Lindy is an exceptional person and will bring to the Corporation a unique combination of management, strategic and implementation skills. Her work over the last eleven years or so has had a definite focus on delivery to customers and industry".

"Lindy has considerable experience in conducting and managing major research projects and in determining research priorities. She is a skilled communicator and is able to liaise effectively with a wide cross section of the community. From growers to industry leaders and senior

politicians Lindy has the experience and personality to represent the Corporation effectively at all levels" Mr Minnis said.

Whilst not specifically trained in horticulture, Ms Hyam maintains close links with rural communities and is sensitive to the values and issues facing Australian horticultural producers. She has a background in guiding organisations and is politically astute and commercially focused.

Ms Hyam said "I'm excited by the challenge ahead in enabling the development and transfer of innovative and leading edge technology in the horticultural industries. These new technologies will help position Australia as a progressive and outstanding international competitor in horticultural production and research and development".

# From Your Federation

By Astrid Kennedy, Executive Officer



## TA Reader Survey -1996

A thank you to growers who took part in the December 1996 Talking Avocados Reader Survey. Almost 15% of growers responded. Statistically this is a good response although your Federation is disappointed because it means that 85% of growers chose not to participate thereby allowing 15% a disproportionate influence.

Your Directors will evaluate the results at the March meeting and will be using the findings for strategic planning purposes later this year. Some of the key statistics from the survey show that:

### Conference '97

- 92 people are expected to attend Conference '97 and 106 to participate in the pre conference tour.

### Computers

- 75% of respondents own a computer and a further 14% plan to buy one within two years.

### AVOMAN

- 71% plan to buy the final version of AVOMAN and 63% are interested in obtaining a copy of AVOINFO.

### Internet

- 2% of respondents are connected to the Internet and this figure will increase by 44% within 2 years.

## Talking Avocados

- More than 60% of respondents read all of Talking Avocados, want the quality to remain as is and consider the magazine to be good.
- Comments on the quality of the magazine were predominantly complimentary and can be summarised as "presently a very good and informative bulletin".
- Few of the 25% who felt that the quality should be improved supplied improvement ideas apart for the general principle that we always need to be improving.
- 46% of respondents approve the layout of the magazine. The approval rating for subject matter is listed below in approval rating order with the greater approval to top:

1 AVOMAN	84%
2 Federation	79%
3 Australian Round-up	79%
4 Calendar of Events	77%
5 HRDC	77%
6 Office Management	76%
7 Research	76%
8 General articles	75%
9 AHC	74%
10 Promotion	69%
11 Marketing	69%
12 World News	65%
- Given these statistics and the comments received it could be said that three quarters of TA readers approve of

two thirds of the subject matter covered in the magazine.

- Growers want more Research, Technical and On-Farm type articles and less coverage of AHC, Promotion and Office Management.

Lots of valuable ideas and suggestions were offered, far too numerous to list here. Suffice to say that each suggestion and statistic will be examined by your Directors. It is likely that you will see some of your suggestions become a reality in 1997.

## In Brief.....

### Conference '97

The Conference is generating a lot of international interest particularly from South Africa and California. A contingent is expected to attend from both countries.

The logistics and the costings have been worked out and the joint committees are now fine tuning the speaker program. A registration/enrolment form is included with this edition of TA so I will not set the details out here except to say "book early" for three reasons:

1. Late September is school holidays and airline seats will be at a premium.
2. Registrations may cut off at 300 because of venue limitations and we

# Conference '97

## "Searching For Quality"

The AAGF Biennial Avocado Conference to be held at the Millennium Hotel, Rotorua, New Zealand in September .

- |       |  |
|-------|--|
| 19-22 | There will be a pre-conference tour starting Friday morning and finishing midday Monday.               |
| 22    | Presidents' Monday night Cocktail Party.   |
| 23-24 | Conference on Tuesday and Wednesday.   |
| 25    | Field Day - On Thursday visit orchards, packing facilities and examine new equipment.                  |
| 26    | All growers are welcome to attend joint Aust./NZ meetings on co-operation and R & D, and the AAGF AGM. |

**GREEN COLOURED REGISTRATION FORM** - To register for the Conference and to book accommodation for the pre Conference tour and the Conference, post the enclosed green form with a cheque for \$100 deposit to: Reply Paid 21, Australian Avocado Growers Federation, P.O. Box 19, Brisbane Markets, Qld 4106. A postage stamp is not required.

**YELLOW AIRLINE BOOKINGS FORM** - To book air travel to NZ either post the enclosed yellow form in a separate envelope with another cheque for \$100 deposit to: Tweed Valley Travel Centre, P.O. Box 948, Murwillumbah, NSW 2484, or Fax it giving your credit card details to 066 725368. To phone, call 066 721031 and ask to reverse the charges. *This booking must be made before 25 April to get discount rates.* There are limited seats available, so book early or you may miss out.

already know from the Talking Avocados Reader Survey that of the 15% who answered the survey 92 plan to attend the conference.

- To get an Airline discount, seats must be booked and a deposit paid by 18 April 1997.



## TALKING AVOCADOS - HAVE YOUR SAY

Dear Sir,

I wish to extend to the NSW Association a well deserved vote of thanks for organising the dinner and speeches at the Ballina Island Motor Inn on 12 December last year.

The timing was good; at the end of the year when everyone is getting into the Christmas mood and can reflect with others the past season, the food was good; although from memory avocados were

missing from the menu; the venue was good particularly for presentations and it gave everyone a chance to see some familiar faces again.

I recommend that this become an annual event for the NSW Association. Once again a big thank you to the organisers.

*Ross Fitzell,  
Ross Fitzell Plant Health Services  
Alstonville*

### Reportable Payment System

On 1 March, the Australian Taxation Office (ATO) introduced a Reportable Payment System (RPS) for notification of money paid for the supply of produce. The new system will be implemented from 1 July 1997. The aim of the system is to detect undeclared income.

From March growers can give their tax file number (TFN) to the buyers of their fruit (Wholesalers or Retailers).

From 1 July, buyers are required by law to deduct tax at the highest rate from all payments where a TFN has not been supplied.

In addition, buyers are required to report to the ATO on an annual basis all payments made and the TFN of payment receivers. The ATO can then match grower and buyer information and identify undeclared income.

An information package detailing the requirements of the new system has been prepared by the ATO. Your information package accompanies this edition of TA and further information is given on page 8.

### New Levy Guidelines

The Minister for Primary industries and Energy Mr John Anderson has issued a set of principles to be used by Government in

determining proposals for new primary industry levies, for changes in the rate of existing levies or for compulsory levies initiated by government in the public interest. Industry has until the end of February 1997 to respond and your Federation will present a submission.

### Quality Assurance - Western Australia

The Avocado Growers Association of Western Australia is currently compiling and implementing a quality control system based on the SQF2000 quality code. The West plans to make the system available to other States once it has been tested.

### Fruit Spotting Bug

Grower knowledge on FSB will be gathered in the first half of 1997. The researchers plan to utilise the AVOMAN training network to contact and inform growers and to seek volunteers for the life of the project.

### Mexican Avocados

New data gathered by the Californian Avocado Commission showed "Pests in significant numbers" in the avocado producing Mexican state of Michoacan. The pests, Stem Weevils, were detected in orchards certified for export during the period of time when the fruit would have been shipped to the U.S.

### Quality Project

Two of the three major retail chains have embraced the Federation's offer to train their staff in the correct handling procedures for avocados.

Woolworth's in particular have advised that over 85 of their staff will attend the workshop program currently underway Australia wide. Additionally they have issued an invitation to your Federation

to speak at their three internal training programs in Sydney.

Franklin's have advised that their staff will attend the Sydney and Brisbane workshops. During the second week of February, 80 retail staff from Queensland and Victoria received training through the project.

### De-coupling

Senator Brownhill has advised that government policy does not allow for industry levies to be passed back to industry bodies because of the need for accountability to all levy payers and the parliament. The Senator stated that he understood that industry wants to be more involved in decision making and to obtain marketing services at the lowest price. He suggested that government and industry should work closely with the AHC to ensure that the important changes that were highlighted last year are implemented.

### Hot off the Internet

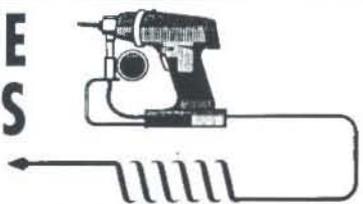
#### USDA Publishes Final Rule on Mexican imports

The California Avocado Commission (CAC) has advised that the United States Department of Agriculture has published a final rule that allows for the import of Mexican avocados into the U.S. under certain conditions:

- individual fruit must carry a sticker identify the country of origin.
- tighter controls on the certification provisions for exporting Mexican groves.
- avocados can only be imported during the colder winter months of November to February.
- imports may only go to 19 north-eastern States and the District of Columbia, all non avocado producing areas.

The CAC remains concerned that the USDA plan is built on inadequate scientific data and disappointed that the USDA did not go back into Mexico and conduct more field research. This omission causes concern about California's exposure to pest infestation.

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# Australian Round-up



## Sunshine Coast

There is an interesting discussion paper doing the rounds of the various grower bodies titled "General Principles Applying to Proposals for New and Changed Primary Industry Levies for R & D, Promotion, Marketing or Fees for Chemical Residue Testing and Animal Health Services".

While the broad concept of the paper varies little from the established practice of strictly applying the levied funds to the purpose for which they were levied, the discussion paper however goes a step further and includes a provision for the government to impose levies "in the public interest". It is also interesting to note that the title of the discussion paper raises the possibility, probability or even inevitability of a Chemical Residue Testing Levy.

The paper goes on to state "The proposed changes must be supported by industry bodies or by levy payers, or by the Government in the public interest". There appears to be two significant issues for the grower to ponder. Firstly, would any levy imposed by the government "in the public interest" represent nothing more than another form of taxation on growers. Despite vigorously rejecting any suggestion of increased taxes, has the government invented a convenient loophole for itself to fall through.

One must assume that all government spending is undertaken "in the public interest" and is funded solely from taxation, excise duty or royalties.

Secondly, in whose interest would Chemical Residue Testing (CRT) be applied and who should fund it. Is CRT a means by which irresponsible growers can be identified and thus prevented from damaging the industry or is CRT a government response to the retail industry lobby who increasingly demand maximum returns against minimum liability and lowest possible purchase price for product.

It can be argued that primary produce in Australia is already available to consumers at a price well below that necessary for the survival of sustainable primary production. Yet, all and sundry see it as their right to pass on any increase in processing costs to the grower who, as the last rung on the ladder must absorb the loss.

This is further evidenced by the retail

industry's procrastination regarding the polystyrene packaging debate and its insistence that the cost of individual product labelling be borne by the grower.

This situation is further evidence that the primary producer can no longer afford the spectator posture so many adopt. Membership and active participation in industry groups is as vitally important to the grower as water is to his produce.

It's time to get off the fence growers and fight for the preservation of the rural industries without which Australians will be looking to other countries for their daily bread.

By the time it hurts the consumer it will be too late.

## Bundaberg

Avocado crops in the Bundaberg area are approaching maturity, with some growers already picking Shepard. The earliest Fuerte should be ripe mid March. Growers expect an above average yield this season, in spite of the extremely dry conditions since early December.

Irrigation supplies continue to be of concern. Sufficient water has been available this season to bring the crop through to maturity, but unless there is a large intake into the Fred Haig Dam in the next two months, water entitlements will be drastically reduced next season.

On a brighter note, at a recent meeting of the Bundaberg Tree Crop Advisory Committee, delegates were informed that a specialist Tree Crop Officer will be appointed to the DPI at Bundaberg to service the expanding tree crop industry. Growers have been requesting this appointment for over two years, and the appointee is assured of plenty of work, indeed the setting of research priorities may be one of the first problems growers will need to address.

## Tamborine

Conditions on the mountain are so unusual this season as to cause most growers to wonder whether there is any such thing as a predictable tree growth cycle.

Regular plentiful rain together with favourable temperatures have fooled avocado trees into believing it's springtime. Most trees failed to set fruit last spring and have been putting on a mass of healthy foliage. Now they are trying to atone for their sins and are blossoming profusely.

What the outcome will be is not clear at

this stage. Will the flowering produce fruit? If so, will the fruit develop and when will it be marketable? If not, will the trees flower again at the normal time and produce a good crop? It's anyone's guess!

As things stand there will be very little fruit picked in the usual October/November time slot and fingers are crossed for better things to come.

As a consequence of the unusually favourable growing conditions, many orchardists have been forced to alter their usual fertilising program. Where it is customary to apply most of the trees' annual requirements in January/February, this year growers have withheld the applications of fertiliser.

To counter the undesirable wood growth they have been pruning quite heavily, favouring side pruning and topping and applying a good coating of white paint to exposed branches to prevent sunburn. With so few trees bearing a crop, spraying schedules have also been reduced, with just sufficient being done to keep any potential build-up of "nasties" at bay.

## West Morton

The AVOMAN training session was finally organised for February 19 at the University of Queensland, Gatton College. At the time of writing a good roll-up was expected as an airconditioned computer room sounds very inviting compared with the current heat and humidity in the orchard.

The fruit drop period has been fairly long this season, although most orchards I am aware of have not had excessive losses. Overall I expect the district crop to be down due to light crops in many orchards along the Toowoomba range.

However, given the way fruit seemed to come out of the "woodwork" in the September/December period last year, I am not making too many predictions.

This lack of reliable crop production estimates remains a concern to all in the marketing sector. The system being used by the New Zealand industry may be worth looking at during Conference '97.

The north Queensland Shepard harvest has started so lets hope that all districts have a good season with respect to both quantity and QUALITY and that the prices achieved are satisfactory or better!



Recent promotional activity for avocados in Western Australia has focused on education at all levels, from toddlers to tertiary. Along with in-store demonstrations and an extensive media campaign to coincide with these events, it has been a busy season for avocados.

A seminar co-ordinated by the Australian Nutrition Foundation titled "Feast or Famine, Feeding Kids Right" focused on feeding tips for children under 5 years old. With avocados in the spotlight as a perfect food for toddlers, Fresh Finesse took the opportunity to provide product information and tastings of sweet and savoury avocado-based dips.

At a Teddy Bears' Picnic attended by 400 to 500 parents and children, Fresh Finesse provided similar information and produce to promote avocados as very suitable for children and picnics.

Inspired by the success of the Bravo Avocado promotion in South Australia, a similar exercise was held as a pilot test at Kent Street Senior High School.

A Home Economist from Fresh Finesse conducted an avocado education session with Year 10 International Foods students. Avocados were provided so that all students could actually prepare dishes from the recipe brochures and conduct a combined sampling session.

Extremely positive feedback on the increase in students using and liking avocados has led to the development of a program to offer similar opportunities to more schools in 1997.

As a different approach, Fresh Finesse provided recipe handouts and samples of sweet and savoury avocado dips to a large and appreciative audience at Balga Senior High School Health Expo.

Avocados were included on the menu at the AGAWA Christmas function at Bentley TAFE and it is hoped that further co-operation will follow.

#### AGM

The Annual General Meeting was held on 4 March at Market City Conference Room and I hope you attended because that was your opportunity to elect your Chairman and Committee for the coming year.

**Progress Towards Quality Assurance**  
Dave Duncan has agreed to lead the preparation of documentation for the WA growers to progress towards the SQF2000 quality assurance program.

Five members of the consultative committee have completed the HACCP Principles and Applications course to provide the necessary skills and understanding to be accepted for accreditation under the program.

A meeting was held in December to commence the formal planning and progress towards SQF2000.

HACCP plans are now being prepared for consideration by the consultative committee.



The New South Wales Avocado Association committee would like to take this opportunity to thank all those growers who attended the "End-of-Year Dinner" back in December.

The feedback received has been positive and the dinner will become an annual event, along with other opportunities to provide NSW Association functions and guest speakers.

The NSWAA President, on behalf of those who attended, would like to thank the two guest speakers, Dr. Tony Whiley and AAGF President Rod Dalton, who helped to make the dinner such a success.

#### AGM

The Annual General Meeting for the NSW Avocado Association is to be held on Wednesday 26 March 1997, at the Summerland House With No Steps commencing at 10 a.m.

Apart from our AGM business, the Committee is pleased to be able to present Peter Broomhall from Hortech Services Pty Ltd as the guest speaker for the morning. Peter's company offers growers an integrated approach to water, nutrition and

disease management of crops. All growers are urged to take advantage of this opportunity to hear Peter speak.

The AGM will also be attended by Wayne Prowse from the AHC. Wayne will report on the happenings within the AHC, and of course, answer any questions from growers.

A Field Day will be held at the property of Geoff Betts, Halfway Creek (between Grafton and Coffs Harbour) on 10 July. Peter Young and Greg Ireland will be there to talk on canopy management.



**Dr Tony Whiley at the End of Year Dinner.**



**AAGF President Rod Dalton addressing growers at the NSW Avocado Association End-of-Year Dinner 1996.**



**Past Secretary Alison Atkinson being presented with an Award of Appreciation by Association Vice-President Phil Connor.**

# New Tax Arrangements Called The Reportable Payments System Commenced On 1 March 1997

The Australian Tax Office (ATO) has found some people in the Fruit and Vegetable industry have not been disclosing all their income, with some not even lodging income tax returns. As a result, the ATO has established the Reportable Payments System (RPS) for the fruit and vegetable industry with the aim of improving the levels of taxation compliance.

The RPS is not a new tax, but is a Tax File Number (TFN) based income reporting system that allows the ATO to ensure people pay their fair share of tax. The RPS already applies to the clothing, fishing, and smash repair industries.

Under the regulations, a Reportable Payment would be made when a wholesaler, processor, agent, greengrocer, or large supermarket buys fruit or vegetables from a grower. When a wholesaler or agent on sells fruit and vegetables to a greengrocer or large supermarket this payment will also be reportable. The RPS is not necessarily limited to only these transactions.

## How It Works

An example of a wholesaler purchasing produce from a grower has been used to explain how the RPS works in the fruit and vegetable industry. In this example, the

wholesaler is the payer and the grower the payee.

The grower will have to decide whether to quote their TFN to the wholesaler before receiving a reportable payment. Provided the correct TFN is quoted, the arrangements will not affect the payment. Generally, a payee will only need to quote their TFN to each payer once using a Tax Office form called a Reportable Payments Declaration.

However, if the payee (grower) chooses not to quote their TFN, the payer will be required to deduct tax at the highest marginal tax rate plus Medicare Levy (48.5%) from the payment and forward that amount to the ATO. If tax has been deducted from a reportable payment, the payer will be required to give the payee a receipt for the amount deducted. The tax will be available to the payee as a credit when they lodge their tax return. To allow people time to become familiar with the arrangements, there will be no deductions of tax before 1 July 1997.

The payer (in this example, the wholesaler) will need to keep a record of all reportable payments made and provide the ATO with an annual report detailing to whom payments were made (including

TFN if quoted), total amount paid to each payee, and any amounts deducted during the financial year.

This information will be used in the ATO's Income Matching System to check that those people who should be lodging income tax returns are doing so and that all income is being included in tax returns.

Payers must keep TFNs in a secure place and ensure access is limited only to those people who need to use them. TFNs are safeguarded by Privacy legislation and TFN guidelines ensure they are to be used only for authorised purposes.

To coincide with the introduction of the RPS to the fruit and vegetable industry, the ATO has planned an extensive information campaign. Growers, wholesalers, processors, exporters, agents and some retailers, etc. who may be affected by the RPS, will have access to information packages providing details of the RPS and what they need to do. This will be supported by an advertising campaign and an ATO operated information service. A pamphlet on the RPS is included with this magazine.

For more information phone the RPS Information Service on 1800 625 624 (8:30 a.m. - 5:00 p.m. EST).

## Trial Of New Technologies Prove Fruitful

Australian Quarantine and Inspection Service recent trials of the latest weapons for detecting items of quarantine concern at airports have proved very successful.

Backscatter X-ray machines, which use sophisticated x-ray technology to allow the imaging of soft organic materials, have proved useful for detecting fruit, meat, plant cuttings, fish and other quarantine risk items.

The machines were initially trialed in Cairns over a four month period from August last year.

Using the backscatter X-ray machines, quarantine staff have found moon cakes, vegetable seeds, citrus peel, beef jerky, fresh garlic, chestnuts, sprouting lotus seeds, and various other items from passengers who all declared they were not carrying foodstuffs.

Cairns International Airport Manager, Loren Schipke, said "It is particularly use-

ful for baggage examinations of overseas visitors with limited knowledge of the English language. Baggage checks now are less personally offensive for passengers, as personal belongings are not unnecessarily exposed in front of a waiting queue.

"It is an ideal tool to check the complete luggage of whole tour groups within a reasonable amount of time and convenient when large tour groups are brought back into the baggage hall because tour guides have filled out their declarations.

"High risk items such as fruit, plant material and packaged food (usually) show up very well."

Another detection device, multi-energy X-ray systems are also well suited for screening food items, agricultural products, foliage and cuttings.

Recent field testing in Australia demonstrated they can reliably be used to identify

a wide range of quarantine interest material such as fruit and meats. The latest generation machines are programmable and allow some flexibility in items to be targeted.

Trials of these machines indicate they are as good or better than the backscatter machines in detecting organic material in most situations and they are less expensive.

An extended trial of this technology will be conducted at Brisbane, Perth and Sydney airports from the end of February or early March. Another machine will be trialed at an international mail centre.

Following the success of the early trials, it seems likely the new technology will play an important role in assisting skilled quarantine officers in Australia's future quarantine defences, along with additions to the Detector Dog Program and other new initiatives.



# AVOINFO Update

By Shane Mulo for the AVOMAN team

Another milestone in the AVOMAN Project about to be reached with the release of AVOINFO.

By now many of you will have heard of the computer program called AVOINFO. It's the avocado reference database being developed as part of the AVOMAN project.

The system currently contains over 4200 avocado related references from a wide range of scientific journals, industry year-books, conference proceedings and specialist publications. Abstracts (Figure 1) or whole articles are included with each reference where available, as well as full bibliographic information (Figure 2).

In some cases we have also scanned pictures or figures and have included these in the relevant papers.

### Search Mechanism

AVOINFO includes a search mechanism that allows users to easily find records by using a number of possible criteria (Figure 3).

An individual reference can be located by searching for specific keywords or by entering part of the title, author's name, address or source of publication. A search can also include any combination of these pieces of information to narrow focus and limit the number of matching references.

Useful references can be bookmarked for later review or printing.

### Copyright

While many people may have already seen AVOINFO demonstrated at field days or conferences, the product is not yet available for sale.

The project team originally planned to release AVOINFO at the end of 1996, however we have been forced to wait until copyright permission is received for all material included in the program. We have chosen to pursue copyright permission for potentially useful material rather than exclude it from the system.

Technical staff are currently checking each reference in the database to ensure that there is no possibility of copyright infringement. Provided appropriate permissions are received on schedule, we hope to release AVOINFO for sale in June this year.

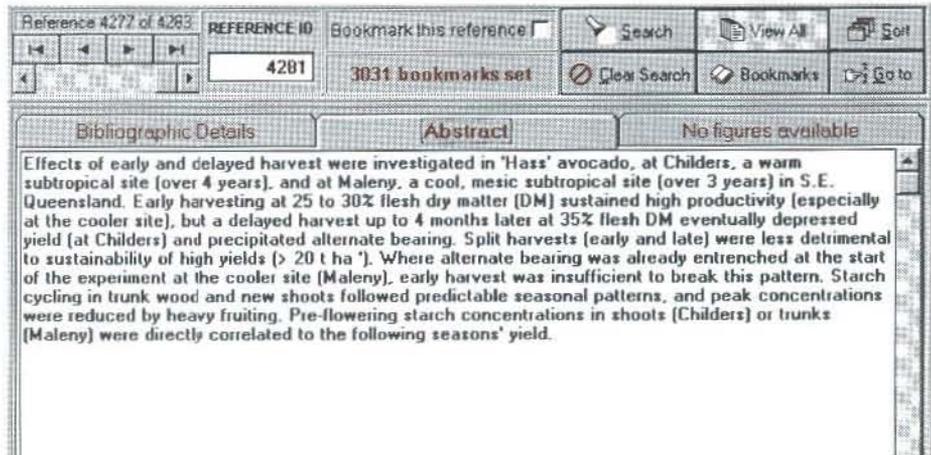


Figure 1. An example of an abstract in AVOINFO.

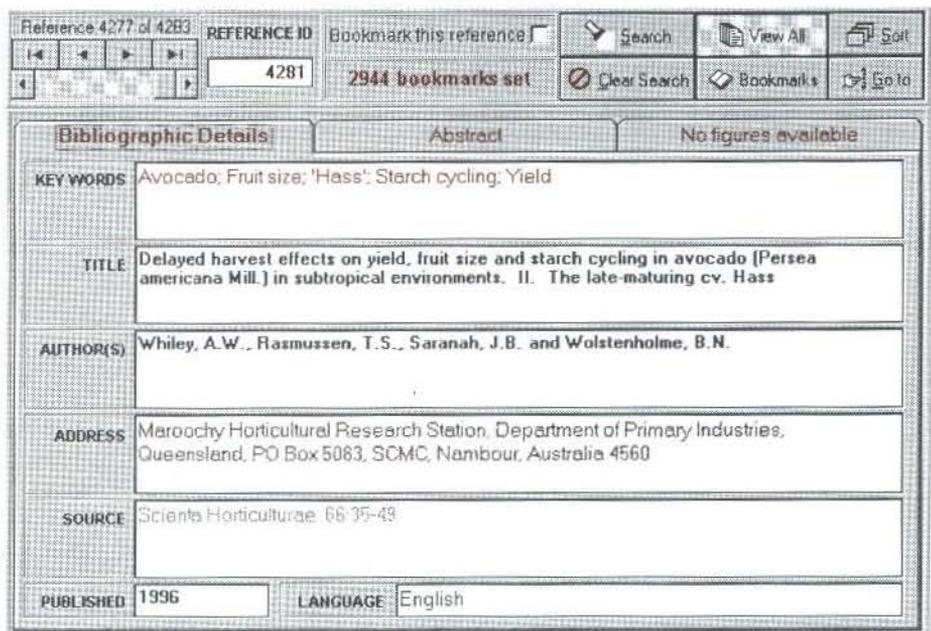


Figure 2. The bibliographic details of a reference in AVOINFO.

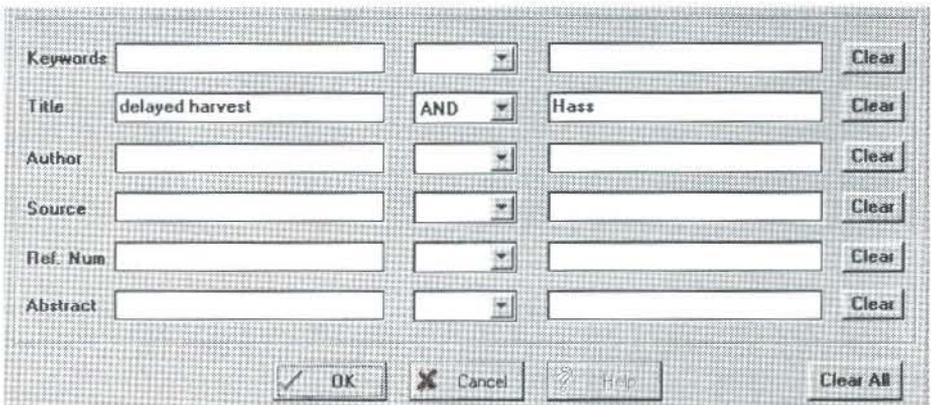
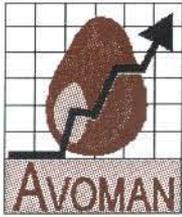


Figure 3. The search facility in AVOINFO showing an example of a typical search.



# Tips For Using AVOMAN

## Quick Option Selection

The AVOMAN program is full of on-screen boxes which can drop down to reveal several options. Typical examples are the options boxes on the left hand side of the recommendations screen.

Normally, we tend to click on these boxes with our mouse and select the option that we want, then move on. However, there are times when you may wish to see the effect of trying several options in a box.

To do this:

- 1 Select the box with your mouse so that it is highlighted.
- 2 One click of the mouse will cause the options to drop down underneath.
- 3 A second click will cause them to disappear again but the chosen option will remain highlighted.
- 4 Once the box is highlighted in this way, use the **Up** and **Down** arrow keys on your keyboard to quickly scroll through the list of options available.

When you select an option the resulting recommendations are updated immediately. This is very useful for getting "what if" recommendations. For example, to determine which spray product is the most cost effective, cycle through each option and note the resultant cost.

## Moving Between Cells in a Grid

Grids are used to display multiple records at a time. AVOMAN uses grids in the block information section (including leaf and soil analyses) and the weather

Methods, Products and Units Options Boxes

User Defined Options Boxes

A Nitrogen Recommendation

section (including rainfall and temperatures). When entering information into a grid, many people first click on the cell they wish to enter data into, then type the data. There is a faster way.

- 1 Select the row by clicking anywhere on it with your mouse.
- 2 To move to the right along the current row in the grid, press the **Tab** key on your keyboard.
- 3 To move to the left along the current row, hold down the **Shift** key and then

press the **Tab** key. The **Left** and **Right** arrow keys also work but only when you are not currently entering or editing data.

- 4 To move up or down a row in the grid press the **Up** or **Down** arrow key on your keyboard. Repeat if you want to move more than one row.

Once you are used to these keystrokes, you will find they offer a much faster way of moving around all of the grids used in the AVOMAN program.

*These tips supplied by Shane Mulo.*

A highlighted cell

Block History											
Block History				Leaf Analyses				Soil Analyses			
Date	Variety	Trees	Treedist	Rowdist	Diam	Wide	Long	High	Irrig	Spray	
12/10/95	Hass	200	5	8	4	0	0	5	100	1500	
4/01/96	Hass	180	5	8	4	0	0	5	100	1750	
▶ 12/10/96	Hass	▶ 190	5	8	4.5	0	0	5.5	100	1750	

Planted 10 more trees at the southern end of the block

A Block History Grid



## Meet The Newest Member Of AVOMAN Team

Christine Bezzina joined the AVOMAN development team on 6 January 1997. Christine, 21 years of age, is a recent graduate from James Cook University, Townsville graduating with a Bachelor of Science majoring in Computer Science and Zoology.

Being a North Queensland girl all her life the move to Nambour is an exciting and welcome change.

Originally from Mackay, Christine's family has a strong background in agriculture, in particular, the sugar industry.

While studying, Christine was an active member of the Australian Army's Ready Reserve Scheme (one year full-time, 3 years part-time) serving as a private driver at Headquarters, 6th Brigade, Enoggera.

Christine's role in the team will be that of further developing the report capabilities of the AVOMAN software and helping the team to handle the vast number of additions and refinements to be made for the 1997 prototype release.

So for those growers using AVOMAN, be prepared to see some new and interesting developments in the 1997 prototype.



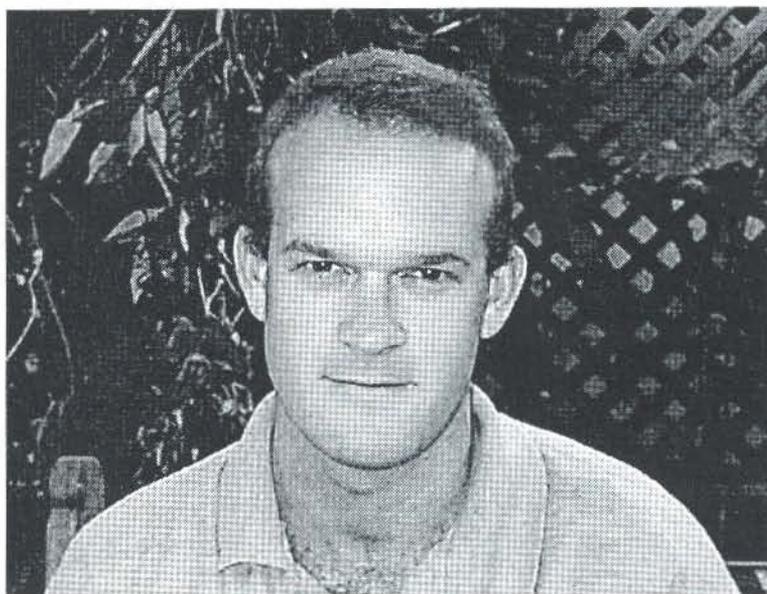
## New Scientist Appointed For The Canopy Health And Management Project

With the initiation of the new "Canopy Health and Management Project" Maroochy Horticultural Research Station has acquired the services of a Temporary Research Scientist in the form of 27-year-old, South African born, Clive Kaiser. The position he fills is for the three year term of the project. Clive comes to us with an MSc (Agric) and will graduate with a PhD (Agric) in April 1997. Both degrees were undertaken at the University of Natal (South Africa) under the supervision of Prof. Nigel Wolstenholme who is well known to Australian avocado growers.

Clive's MSc program was in pre-harvest horticulture looking at aspects of delayed harvest of 'Hass' avocado fruit in the cool subtropical KwaZulu/Natal midlands. This involved monitoring growth and physiological changes in the tree and fruit.

After completion of his primary degree he spent two years working as a post-harvest physiologist for the Institute for Tropical and Subtropical Crops at Nelspruit (South Africa). There he undertook research on lychees and mangoes.

The results of his original investigations into the prevention of lychee skin browning led to his being awarded the prize for the best presentation at the National Congress of the Southern African Society for Horticultural Sciences. He was subsequently awarded a scholarship which allowed him to study full time for his PhD further researching aspects of skin browning, and during his program undertook collaborative research studies in Bangkok at the invitation of the Thailand Government.



Results from Clive's lychee research has led to pilot commercialisation of his techniques to retain skin colour after harvest. In addition to his PhD study on lychees, he investigated maturity standards and storage of 'Fuerte' avocados and presented his results at the World Avocado Congress III in Tel Aviv, Israel in October 1995.

Clive started work at Maroochy HRS on the 13 January 1997 and we look forward to his contributions to the "Canopy Health and Management" project.

# Safety Is The New Slogan

By Rob Suggett, National Marketplace News December/January 1996/7

FOOD Safety is becoming a priority issue in the minds of consumers, bringing with it challenges for both the domestic and export markets, according to Woolworths Ltd group managing director and chief executive Reg Clairs.

Mr Clairs spelled out domestic market trends and likely future scenarios as well as the international scene and possibilities for Australia's food industry in his recent address at the Royal Agriculture Society's "Best of the Land" dinner in Melbourne.

"The consumer today places trust in us to provide a wide choice of wholesome, nutritious and safe food whether that is in the local supermarket, or our customers in Hong Kong, Japan or Indonesia," Mr Clairs said.

"We operate in a dynamic society, with constant shifts in trends and values. We attempt to monitor our consumers, watching and measuring where possible the changing demographics and lifestyles.

"Then we constantly amend our offer to best meet those expectations."

On the domestic front Woolworths for many years has been monitoring through sales data, local level focus groups of customers, and wide-ranging telephone surveys.

## Consumer Needs

When research started in the late 1970s, the single most dominant factor that influenced shoppers was price, Mr Clairs said.

In the mid-80s the emphasis changed to "fresh" which sparked the launch of the Woolworths "Fresh Food People" campaigns.

"By the end of the 80s and still current is

the next wave of consumer needs," Mr Clairs said. "From 'price' to 'fresh' and then to 'convenience'. A growing number of customers were becoming more and more 'time poor'. Two income households meant changes to lifestyles and behaviour."

This had led to extended trading hours and more one stop shopping.

"Now, in the mid-1990s, a new dimension has emerged as an important attribute," Mr Clairs said. "Following on with convenience and fresh, several incidents have occurred in recent years and as a consequence 'safety' is a high priority in many consumers' minds.

"And it is here that we unfold the future role of the food retail environment and the future challenges in the years ahead.

"Today's consumers require convenience and speed, combined with safety then new ways must be employed to resolve any likely impediment that will impact on those two attributes.

"The traditional role of the food retailer must change, as we have recognised, and it now behoves us to feed this information back through the supply chain.

"We are now perceived as the buying agent for our customers," Mr Clairs said.

Woolworths was now "vigorously pursuing" initiatives to assure customers on food safety.

## Hazard Checks

"Great emphasis will be placed for the remainder of this century and beyond on the establishment of HACCP (Hazard Analysis Critical Control Points) and ISO accreditation into our supply chains," Mr

Clairs said.

"A few months ago we held a conference in Sydney for some 80 of our major fruit and vegetable suppliers where we introduced them to our views on the introduction of HACCP into their businesses and the ultimate benefits that will flow.

"By encouraging our suppliers, through awareness programs and discussions, to introduce hazard analysis checks, we hope to reduce the risks throughout the chain.

"Consequently the growers will form a similar mindset with their suppliers of seeds, fertilisers and pesticides and so the entire chain will be more aware.

"With the words 'Food Safety' uppermost in our minds, we have commenced a number of initiatives that begin at the laboratory, through the growers or producers, the processors and packers and the transport and distribution components, ultimately arriving into our stores."

Mr Clairs said Woolworths was working with food and horticultural authorities, the CSIRO and many others to lift the profile of this sensitive area.

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## Research

"Through these groups and others we are studying and contributing to such areas as gene technology, modified atmosphere packaging and transportation," he said.

"In the scientific laboratories of the world, great research is being undertaken in the development of pest resistant strains or hybrids by genetic engineering.

"This will ultimately, if carefully and correctly developed, reduce the need for chemical sprays on crops.

"Great scientific advances are being made in the development of plants that will enable more natural vine ripening, rather than the use of gases for artificial ripening.

"Sophisticated irrigation and fertilisation programs are enhancing production and reducing the amount of inorganic fertilisers and water wastage.

"All of these programs are being undertaken with the principles of long term sustainability being the prime motivation."

## Pre-prepared

Mr Clairs also outlined the new retailing trends to cope with the renaissance of inner city and suburban dwellings, especially apartment living.

An example was the Tesco chain in the UK which has developed the "Metro" store model, a smaller version supermarket, with fewer brand choices, but a good range of fresh foods.

"The range of fruit and vegetables covers the essential requirements, perhaps not providing every exotic assortment, but the real plus is that instead of buying a full head of lettuce or cauliflower, there will be pre-packed bags of lettuce leaves and caulies, peeled and diced onions to save the watery eyes, the pumpkin is peeled, carrots diced, and many other time saving and waste saving products.

"These stores will emerge over the next decade into inner city suburbs and other locations such as railway stations, service stations or bus terminals where customers can shop and go".

## Global View

Mr Clairs said the world was going through a global restructuring of economies, cultures, and trading alliances, particularly in the Asia-Pacific rim.

The three fundamental elements of change in this area were increasing population, increasing wealth, and increasing education and technology. Together they would mean an emerging demand for food unprecedented in history.

"This new civilisation will become technically oriented and leapfrog over much of

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our traditional learning curve," he said.

"As a consequence, their desire and ability to produce food will diminish and they will become reliant on out-sourcing their food requirements. The opportunity for our country is phenomenal.

"Our heritage gave us abundant land and a range of climates to produce almost any commodity required on earth.

## Safety's the new slogan for industry

"Because of this isolation we have a 'clean, green environment' and we have the skills to produce.

"It is now a question of lifting our sights and collectively rising above the day to day struggle for survival in Australia."

## Strategy

Mr Clairs noted the announcement in September by Prime Minister John Howard of the formation of the Supermarket to Asia Strategy Council, which the PM chairs.

"This announcement signals the dawn of a new era for Australia's food industry, as it draws together for the first time in our history at a Federal level the combined forces of industry and government," he said.

It had as its vision: "For Australia to become by the year 2020 a significant global supplier for food."

Council members included four Federal Ministers as well as representatives of all the industries involved and the scientific community, farmers, transporters and packagers, food processors, retailers and marketers.

Collaboration of States and Territories was being obtained and a task force had worked for months preparing the path for implementation of the strategy. Business plans will cover such areas as micro-economic reforms, investment, market access logistics, marketing, quality, research and developments sustainability, education and communication.

Mr Clairs said a key agenda item was "to take this country to the forefront of the food producing nations of the world through innovation, through application of technology, and through sustainable farming practices.

"To create in our potential markets throughout Asia a reputation for quality and value that will ensure an ongoing demand.

"It will take courage, it will take patience, and it will require us all to focus on the vision and work together to attain it."

## Benchmark

"I recently had the pleasure of touring the Goulburn Valley and seeing much of this already in action," Mr Clairs added.

"The combined efforts of the Victorian Government and the skilled producers here are setting the benchmark for Australia and are to be commended for their initiatives."

Mr Clairs said he was enthusiastic and optimistic about the future of the food industry, both domestically and internationally, "and I am passionate about the role our country will play."

"As this strategy develops, investment will be attracted, opportunities will unfold and employment will be provided, thus contributing to the national economy in many ways," he said.

# World Market For Avocado

By Jason Graef of Fintrac Inc. *RAP MARKET INFORMATION BULLETIN, No. 10, October 1995*

## Introduction

World trade in avocados has increased greatly during the 1980s and early 1990s, although it has been limited primarily to the United States and Europe. Japan, the most westernised of Asian countries, has begun to import large volumes of avocados but is the only Asian country to do so.

World production of avocados has increased by 550,000 metric tons during the past 15 years and is now estimated at 2 million metric tons. Avocado cultivation is centred in the Americas, with the nations of North and Central America accounting for 60% of world production. South America accounts for 18% of world production, and Africa and Asia account for about 10% each.

International trade in avocados, however, is led by Spain, South Africa, and Israel, which have been the world's top three exporters, respectively, since 1993 even though their combined annual production is only 20% that of Mexico, North and Central America.

## Production And Exports

Mexico is the world's largest producer of avocados. In 1994 it produced 718,000 metric tons, equal to the combined 1994 production of the next seven largest producers: the United States, the Dominican Republic, Brazil, Indonesia, Colombia, Venezuela, and Israel.

Mexican avocados are harvested year round but reach their peak productivity between October and February. Hass is the major variety produced (80-90% of total production), but some Crillo, Fuerte, San Miguel and Taylor varieties are also available. Because Mexico is also the world's largest consumer of avocados, it exports only 2% of its total production. However, exports were predicted to increase in 1995 to 4% of production. Several factors have contributed to increasing imports, including the devaluation of the peso; poor weather in major production areas of Israel, South Africa, and Spain; and increased organisation and sophistication by Mexican producers. Avocado traders from Europe, South Africa, and the United States have begun active involvement in Mexico's avocado exporting industry.

The United States is the world's second-largest producer of avocados, harvesting 168,000 metric tons in 1994. California is

the primary growing area (86% of total production), followed by Florida (14%) and Hawaii (less than 1%). The Hass variety is the overwhelming favourite of U.S. avocado growers. In 1994, the United States exported 9,669 metric tons of avocados, primarily to France, Canada, Japan, and the Netherlands.

## South America

Chile produces avocados year round, 55% of them Hass and 14% Fuerte. Production in 1994 was estimated at 55,000 metric tons, an increase of 31% from the previous year. Furthermore, production is forecasted to increase 15% annually as new land comes into production. Chile exports 35% of the avocados it grows, almost 97% to the United States.

Chile is seeking to diversify its export markets in anticipation of more Mexican product being exported to the United States. The Chilean avocado growers' association is urging producers to redirect highest-quality product to Europe and recommending that funds traditionally used for promotion in the United States be applied to promotion in Europe.

## Africa

South Africa's production of 49,000 metric tons is relatively small by world standards, but approximately 70% of production is exported. Production and exports fell sharply in 1995 because of drought; bad weather; and low yields during the "off-season," an alternate bearing cycle induced by previous high yields. Increased congestion in the country's major ports has further added to exporting difficulties, damaging and delaying shipments of fruit. Unless significant rainfall occurs very soon, yields will continue to drop. To compensate for lower production, the South African label Bella Nova sourced Mexican avocados for European markets.

Hass avocados, which account for 30% of overall production, will become even more prevalent as additional production comes on line. Other varieties grown include Fuerte, Ettinger, Pinkerton, and Ryan. South Africa's marketing year extends from March to August. Ninety-five per cent of South Africa's avocado exports are directed to Europe.

Kenya grows and exports Fuerte avocados, primarily to France but also to the

United Kingdom and Germany. Exports in 1995 (January to June) increased by 8% from 1994, mainly because sea shipments increased; for several years, Kenyan producers have been perfecting the necessary technology to ship avocados by sea because air freight charges are too high.

## Middle East

Israel produced 51,000 metric tons of avocados in the 1994/1995 season and exported 36,000 metric tons. France is the destination for about half of Israel's exports, the rest being absorbed by other European countries such as Germany and the United Kingdom. If projections are correct, Israel will become the world's largest exporter as a result of the 1994/1995 export season. Israeli production is expected to increase even more because more planting is under way. The Government of Israel forecasts exports of 60,000 metric tons by 1997. Ettinger is the most popular variety among consumers in Israel, because it reaches maturity before frost strikes in December and is high yielding. Hass, however, is the preferred export variety to most European markets. Other varieties grown include Pinkerton, a green-skinned avocado said to taste like Hass; Fuerte; Nabal; and Reid. Israel exports product to Europe from October to May.

## Europe

Spain exports avocados to France and other European countries. However, for the past two growing seasons, high temperatures and chronic lack of water have cut Spanish yields drastically. Production in 1994 stood at a mere 30,000 metric tons, and 50% of 1994/1995 Hass plantings reportedly did not produce fruit. Peninsular harvesting occurs between October and June; in the Canary Islands, harvesting runs from September to March. Hass is the primary variety, constituting 80% of total production. Bacon and Fuerte are also produced.

## Asia

The Food and Agriculture Organization (FAO) of the United Nations estimates that Asian countries produced 180,000 metric tons of avocados in 1994, slightly more than 9% of world production (FAO groups Israel within Asia). Indonesia ranks as the fifth-largest producer in the world, with

105,000 metric tons in 1994, but product is primarily for domestic consumption (1993 exports were only 3.2 metric tons). The Philippines produced 24,000 metric tons in 1994, exported to no major markets, and is one of the few nations that has experienced a decline in production during the past 15 years. Thailand and China export relatively small quantities of avocados, but no volume or value statistics are available.

## Markets

### North America

The United States imported 23,932 metric tons of avocados, worth US\$30.7 million, in 1994. Chile supplied 77% of imports by volume, and the Dominican Republic accounted for most of the remainder (18%). Import volume in 1994 was almost three times that of the previous year, but 1% less than in 1992. This fluctuation is the result of the cyclical nature of avocado production in the United States: high yields one year generate low fruit bearing the next. The Bahamas was the only supplier that did not experience significantly diminished demand for its product from 1991 to 1994.

Most U.S. imports arrive between September and December, the remainder arriving a month before or after this period. Periods of high imports are generally reflective of periods of low domestic production. Domestic Hass avocados from California received steady high prices at New York's wholesale market in 1994, between US\$35.00 and US\$44.00 per 40-pound carton during the period of low imports, and lower prices from September to November. The highest price paid for imported Dominican product, US\$11.25 per 10-count box, was received in February, when import volume is low.

To date, the only Mexican avocados allowed entry into the continental United States are those transhipped to Canada and Alaska in sealed containers. However, administrative action is pending to allow Mexican avocados to be supplied to 19 non-avocado-producing states and the District of Columbia. If this action is successful, Mexican avocados will be permitted entry only during the winter months. Even so, Mexican supply will certainly be large.<sup>1</sup>

<sup>1</sup> On 5 February the USDA approved the importation of Mexican avocados into the US under certain circumstances.

Avocado growers are not happy with the conditions because they fear that local crops

Canada imported 7,916 metric tons of avocados in 1994, worth C\$10.8 million. Imports have increased 16% in volume and 20% in value during the last five years. The United States and Mexico are the primary suppliers to Canada, which sourced only 2% of imports from unlisted other countries in 1994. Most Mexican avocados enter Canada from September to March, reaching highest volume between November and January. The United States supplies Canada with avocados from April to September, its largest shipments arriving between May and August.

### Europe

France, the United Kingdom, the Netherlands and Germany are the top four avocado importers in the European Union (EU). Together, they represent the world's largest import market for avocados, their 1994 imports totalling 104,500 metric tons (US\$114.4 million). Imports in 1994 were 54% higher in volume than imports in 1988, but were still somewhat lower in volume than 1992 imports. Primary suppliers to the EU are South Africa, Israel, Mexico, and the United States. Spain is also a major supplier. Typically, Europe is supplied by Spain and Israel from October to May; by South Africa, Kenya, and the United States from April to September, and by Mexico from August through March.

France is the largest European importer of avocados, with 1994 imports of 78,552 metric tons (US\$84.1 million). The French import market grew by 52% in volume from 1988 to 1994, but imports in 1994, though higher than the year before, were 10,000 metric tons below the 1991 level.

Israel, Spain, and South Africa, respectively, were the top three suppliers to the French market in 1994, each accounting for between 22 and 23% of total import volume. From 1988 to 1994, all three increased their export volume: by 98%, 34%, and 34%, respectively. In 1994, Mexico supplied 20% of total import volume and was the only supplier that experienced growth every year. Kenya, though not a major supplier to this market (5% of 1994 import volume), nevertheless increased its exports to France by 225% from 1988 to 1994.

French imports in 1994 were highest from March to June and from October to December, consistent with European import seasonality. French consumers generally prefer Hass avocados.

The United Kingdom imported 15,239 metric tons (US\$15.6 million) of avocados in 1994. The United Kingdom imports

most of its volume from extra-EU sources. Although growth in total imports has been relatively flat, the shares of major suppliers have changed significantly. In 1994, South Africa was the top supplier (55% of volume), followed by Mexico (13%), France (11%), and Spain (10%). These countries have been able to increase their supply in a relatively stable import market because the Canary Islands, Israel, and the United States have lost market share.

U.K. consumers, unlike most Europeans, have not fully embraced the Hass avocado. Although it is considered a superior "eating" avocado, the dark knobby skin of the Hass has kept some U.K. consumers away as they traditionally prefer green-skinned varieties. Yet because much of the world's production of avocados has switched to Hass, U.K. supermarkets have begun promotional efforts to encourage the consumption of Hass avocados. Wholesalers have not switched to Hass, still preferring Fuerte, but do not control as much of the fresh produce market as the supermarkets do.

Imports in 1994 were highest from April to August, when South Africa supplied most of import volume (83%). All other major suppliers timed their exports to arrive early or late in the year. The International Trade Centre's Market News Service reported weekly importer selling prices for South African avocados ranging from £3.75 to £6.00 per 4-kilogram carton. In general, prices were highest in March and April—around £5.50 per carton—and steadiest in August and September at around £4.50. Product from the Canary Islands and Israel sold for comparable prices, but Spanish product generally averaged £1 per carton less.

Although December 1994 figures are still unavailable, import statistics for January through November indicate that the Netherlands imported 10,719 metric tons of avocados, worth US\$10.7 million. This tonnage is already 17% larger than that of Dutch imports for the whole of 1993. Furthermore, the Netherlands is the only major EU import market in which demand has expanded each year from 1988 to 1994, rising 177% in volume. All major suppliers have increased their supply to this growing market.

South Africa, the top supplier (485 metric tons, US\$669,000) in 1988, increased its volume to 5,693 metric tons (US\$5.4 million) in 1994, raising its market share from 27% to 53%. Kenya and Spain were the next-largest suppliers. Each supplied 12% of imported volume, and each has

15 shown tremendous growth over the seven-year period examined (251% and 977% in volume, respectively). Mexico was the major supplier to the Netherlands in 1994. Mexican export volume has fluctuated markedly in the last seven years, but 1994 exports were 170% higher than 1988 exports.

Germany imported 9,767 metric tons of avocados in 1994, worth US\$10.7 million. German imports now come almost exclusively from other EU countries. France was the top-volume supplier in 1994 (27% of total imports), followed by the Netherlands (25%) and Italy (15%). Kenya (9%) and South Africa (7%) were the only significant extra-EU suppliers in 1994. Germans generally prefer Fuerte avocados; it is estimated that 80 to 90% of imports are Fuerte. However, traders report that demand for Hass has risen recently.

**Asia**

Japan is the only Asian nation that imports large volumes of avocados. Japanese imports in 1994 totalled 3,741 metric tons, worth ¥972.4 million (US\$9.5 million).

All product that year was sourced from Mexico and the United States, which supplied 65% and 35% of volume, respectively. Although Mexico supplied in greater volume, the United States received much higher value for its product; supply from the United States accounted for 49% of total import value. Japanese imports have increased 73% in volume since 1990.

Japanese imports arrive on a schedule that reflects the country's top two suppliers' global marketing seasons. Mexican avocados arrive in volume from September to December, and U.S. avocados arrive from February through September. In July 1995, ¥150 (US\$1.75) per avocado was one major retailer's selling price for California product.

The second-largest reported importer of avocados in Asia is Hong Kong. Hong Kong imported 663 metric tons of avocados, worth HK\$5.3 million (US\$686,500), in 1993. Thailand is the top supplier, accounting for 71% of import volume and 83% of value. Taiwan was the second-largest supplier (accounting for 17% of imported volume), followed by China (12%) and very small quantities from New

Zealand. Consumers in Hong Kong have very little experience with avocados.

Korea, Taiwan, China, and Singapore import avocados in relatively small quantities. With 1993 imports of 26 metric tons (US\$91,300), Korea is the largest importer in this group. All but 4% of total imported value was sourced from the United States, the remainder coming from New Zealand. This import market grew by 36% in volume from 1990 to 1993. Taiwan imported 15.4 metric tons (US\$16,300) in 1994. Thailand accounted for 69% of total import volume, but only 23% of total value. The United States, the only other supplier, supplied far less volume than Thailand but received higher import value. China reportedly imported only 1.6 metric tons of avocados (US\$11,000) in 1993.

*The RAP Market Information Bulletin is produced monthly by the USAID-funded Asia Regional Agribusiness Project (RAP), implemented by Development Alternatives, Inc. (DAI). The bulletin provides information on competitors, importers, and prices for selected fresh horticultural products produced in developing Asian countries.*

# Millions Of Consumers Recognize Multiple Uses For California Avocados

*From the California Avocado Commission Web Site*

Nearly 1 million more U.S. households will see California avocados on their dinner tables this year, resulting in almost 2.6 million more people enjoying delicious California avocados. Avocado consumers have bought an incredible 30% more avocados in 1996 than the previous year and are adding the fruit to a variety of dishes.

These findings are from a survey conducted by Associated Marketing, an independent market research firm based in Chicago. The survey was conducted on behalf of the California Avocado Commission (CAC), and shows that the California avocado is moving into a period of record-breaking household penetration, with families purchasing an average 3.3 avocados per month.

"The findings of this recent market survey reinforce our belief that the California avocado industry continues to gain market strength," said Mark Affleck, CAC president. "More people are buying avocados for a greater number of uses. Shoppers have realized that the avocado can be used

in many dishes beyond guacamole and that the nutritional benefits in avocados are numerous."

Nationally, the average avocado buyer purchased a record 3.7 avocados in May, a steep increase from the 2.5 avocados purchased in November of 1995. Eighteen per cent more households enjoyed the delights of the California avocado this year and the number of California avocados purchased in an average month increased 13.8%.

"Avocado consumers know they'll receive great taste and quality when purchasing California avocados," said Affleck. "Mothers feel safe knowing that the avocados they serve their families are nutritionally sound and delicious in everything from baby food to pasta toppings. "Consumers across the country are finding that California avocados are not just a Mexican food item. From avocado egg rolls to sushi, pizza toppings, sherbet, salad toppings, and more, California avocados are popping up in a variety of recipes as a flavourful and nutritious addition.

Consumption of California avocados is at an all-time record level and increasing:

Year	% of U.S. Households Buying California Avocados
1958	9.4
1963	13.6
1973	26.0
1983	29.9
1988	32.3
1989	36.8
1990	37.8
1991	35.1
1992	39.2
1993	39.9
1994	38.7
1995	40.9

For CAC recipes or to view nutritional and other information about California avocados, visit the CAC Internet Web Site at [www.avocado.org](http://www.avocado.org).

*Based in Santa Ana, the California Avocado Commission was established in 1977 to conduct market-development activities on behalf of the state's 6,000 avocado growers.*

## Program's End Causes Split

By Craig Moyle, Staff Writer. *The Packer*, 2 December 1996

### Shippers Divided Over Move That Dismantled Ad Incentives

Division among California avocado shippers persists over a move last year to end the California Avocado Commission's retailer ad incentive and merchandising programs.

The dissension was revealed during a marketing panel discussion at the 4th annual California Avocado Day held on 14 November in Escondido, Calif. The event was sponsored by Calavo Growers of California, Tustin, Calif.; Chiquita frupac Corp., Lake Forest, Calif.; Mission Produce Inc., Oxnard, Calif.; Central Coast Farm Credit and Farm Credit Services of Southern California.

Part of the discussion centred on a move by the avocado industry to cut \$1.9 million from the commission's budget.

The cut virtually eliminated retailer ad incentives, leaving shippers to formulate their own promotional programs.

The move was supported by industry leader Calavo Growers of California and opposed by independent packers such as McDaniel Fruit Co. Inc., Fallbrook, Calif. "I personally feel that the industry needs to be united rather than everyone bragging about having their own promotion program," said Rankin McDaniel, vice president-operations and general manager of McDaniel Fruit Co.

"We need to be united as an industry because the buyers are."

However, Calavo's vice president of fresh sales, Robert Wedin, said his co-operative which controls 38% of the avocado market, benefited from the move.

"For us, it's worked very well. I've got stack of ads in my office that's two feet deep," Wedin said.

"Despite the lack of commission involvement in ad incentives last season, the flow of fruit to market was smooth," said Ross Wileman, vice president of sales and marketing for Mission Produce.

In other California Avocado Day seminars:

► A panel of industry executives said

competition for expensive Southern California water and finding ways to appease time crunched consumers will rule the California deal in the near future.

"Will Hass be the variety of the future?" asked Al Yangelos, chief executive officer of Calavo.

"It's an erratic performer. People say that if you put more water on the Hass it will produce more fruit, but who can afford the water?"

Steve Barnard, chief executive officer for Mission Produce, added: "Price alone isn't enough anymore. You need to show the consumer how to use your product."

► A panel of six agriculture officials and university entomologists said California avocado growers stand to lose more than \$123 million per year if the avocado seed and stem weevils become established in their region.

Panellists said California already is at risk of introducing pests because the federal government allows Mexico to ship avocados by truck through the United States to Canada.

Monitoring of the program by the U.S. Department of Agriculture, however, has not been diligent, said Dorothea Zadig of the California Department of Food and Agriculture.

"It's just a little too loose," Zadig said.

## Japanese Consuming More Avocados

From *Fruit and Vegetable Markets, Agra Europe (London) Ltd.* January 1997

Japanese consumption of avocados rocketed up in 1996, according to the USDA. As Japan does not produce avocados, imports for the year are likely to reach a record level. Imports of fresh avocados in January-September reached 4,950 tonnes, compared with 4,725t in the whole of 1995, with the US and Mexico supplying 2,608t and 2342t respectively. Imports are thought to have reached 5-6000t in calendar 1996 as a whole, boosted by the perception of avocados as a healthy food.

### Scope For Consumption Growth

Avocados are mainly marketed in the cities of Tokyo and Osaka and are relatively unknown in other parts of Japan, indicating plenty of scope for growth in consumption. US avocados face a 5% *ad valorem* tariff on the cif value, while a 3% tariff is levied on Mexican supplies under the Generalised System of Preferences.

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## Horticulture Exports Must Increase To Ensure Long-Term Success

The current rate of expansion of Australian horticulture meant the industry had to adopt an export orientation or face the prospect of an oversupplied domestic market with depressed prices.

This scenario was put to the Australian Fresh Stone Fruit Growers, Association annual conference at Renmark recently during the opening speech by Senator David Brownhill, Parliamentary Secretary to the Minister for Primary Industries.

"Horticulture is the largest agricultural sector of the domestic market, with the stone fruit industry alone worth about \$150 million annually, but it has a much lower export focus than other agricultural industries," he said.

"The relatively small size of the local

market with its 18 million consumers pales in comparison to the hundreds of millions of potential customers in the international market.

"In my role as Chairman of the Horticulture 2000 Group I will be working with industry, the AHC and the HRDC to facilitate the implementation of a growth strategy for horticulture, based on the vision of improved international competitiveness and increased exports.

"The Group has a vision of Australian exports of fresh and processed horticultural products reaching \$2 billion by the year 2000."

Senator Brownhill said it was now well accepted that quality systems must be in place from paddock to plate, to ensure

long-term success in domestic and international markets.

"This is an issue that should be at the forefront of your marketing strategy. All sectors of your industry must place a high priority on the formal adoption of quality management systems," he told the conference. The industry must have an aim of delivering consistently clean, safe and high quality product to all markets.

"In improving the competitiveness of Australian horticulture, longer term strategies of 10 to 30 years in scope are vital, whether it is by way of support for research and development, overcoming quarantine barriers and other market access efforts or the provision of improved infrastructure in areas such as water reticulation."

## PM Pushes Food Export Drive To Asia

### More investment and jobs for the agri-food industry

A new Supermarket to Asia Council (STAC) was formed by the Prime Minister in September last year. STAC is a facilitation body whose primary role is to provide strategic direction and priority setting for the agri-food industry, allowing it to effectively overcome impediments to growth, both in the domestic and export markets.

Its mandate is: "To develop a globally competitive Australian agri-food industry with an aggressive export culture, resulting in significant and ongoing growth in exports to the Asian region over the next decade."

The Council operates in a similar way to a Board of Directors, co-opting government and business leaders to participate in its eight working groups.

STAC Executive Director, Mr Paul Bourke (former Managing Director of Arnotts Ltd), said the formation of the working groups: "Was an exciting first step in the Council's drive to grow Australia's food exports to Asia aggressively over the next three years.

He said that business leaders from a wide cross-section of Australian industry would be invited to join the working groups early in the New Year. Chaired by senior government ministers or STAC members, the groups will focus on the following issues:

Quality and Safety; Business Competitiveness; Asian Marketing; Small to Medium Enterprises; Market Access; Communications; Transport and Logistics; and Research, Technology and Innovation.

Mr Bourke said that although food exports to Asia had increased over the last five years, totalling over \$14 billion in 1995/96, growth was not consistent and that if Australia did not act aggressively now, it ran the risk of missing the export boat and becoming more reliant on imported foodstuffs.

STAC had therefore been formed, he said, to bring together key industry and government leaders to find ways of removing impediments to export growth, and ultimately stimulating investment and job creation in the agri-food industry, particularly in regional areas of Australia.

"The Council's mandate is simple," said Mr Bourke. "Our job is to help Australian farmers and food processors to become globally competitive in terms of product, pricing and quality and to encourage an aggressive export culture within the agri-food industry.

"Asian food consumption is growing by \$20 billion per year as a result of increasing income and population levels and changing tastes towards meat, dairy products,

fresh and convenience foods.

"Australia has several natural advantages to help capture a significant share of this market, including some of the best farming land in the world and a close physical proximity to Asia.

"Our potential for export growth is enormous. But competition is intense and we currently hold only about six per cent of the total Asian import market.

"Australia faces two dangers because we are not moving quickly enough on the export front. The first is that Australia will miss out on export opportunities. And the second is that Australia will become more and more reliant on imported foodstuffs."

Mr Bourke said that the agri-food industry was one of Australia's most important industries valued at approximately \$64 billion. He said the agri-food industry was also one of Australia's major generators of employment, with 358,000 employees in the agricultural sector and 181,000 in the food and beverage manufacturing sectors.

"By developing the agri-food export industry, we can grow this industry sector significantly, opening up new and existing markets and stimulating investment and job creation, particularly in rural Australia," said Mr Bourke.

## Quarantine Report Released

Engaging industry, government and the community in Australia's approach to quarantine is crucial. All three must be involved if the objectives of quarantine policy in this country are to be achieved, according to the report on Australian Quarantine.

"The key theme of this report is that quarantine is a shared responsibility. It is necessary for all governments, industry and very much the general public to take ownership of quarantine in this country," said the Minister for Primary Industries and Energy, John Anderson.

The Committee considered 167 written submissions received from local and international interest groups and individuals. Eighty-five of those who made submissions also attended one of the public hearings conducted throughout the country. In addition, the Review Committee inspected quarantine procedures in all States, and visited five other countries, including the United States and Japan, to compare quarantine policy and operations.

Australian Quarantine: a shared responsibility contains 109 recommendations for the future direction of quarantine policy in Australia. The guiding vision of the report is 'that Australia will maintain its relative freedom from unwanted pests and diseases while fulfilling national and international obligations in a responsible manner.'

Part of fulfilling these international obligations involves a realistic approach to quarantine management based on risk minimisation procedures. Such an approach is in accordance with the requirements of the Sanitary and Phytosanitary Agreement of the World Trade Organisation, which seeks to prevent quarantine laws being used as barriers to trade.

"The report refutes the belief held in some quarters that Australia can adopt a 'no-risk' quarantine policy," Mr Anderson said.

"The report says such a quarantine policy would in practice be untenable and totally impractical. Australia's quarantine policy is not, and cannot be, one of zero risk.

"To achieve such an objective would require the cessation of all trade and international travel."

The report recommends the continued use and refinement of scientifically based risk analysis. Risk analysis comprises three main aspects; risk assessment, risk management, and risk communications. The report emphasises the importance of maintaining consultative, transparent and

politically independent risk analysis processes.

To assist risk minimisation, the Review Committee also recommends a change in quarantine policy focus from the barrier mentality to a continuum approach.

Pre and post-border techniques need be developed, in conjunction with at-the-border activities. These include the establishment of monitoring and surveillance programs and the creation of secure post-entry containment facilities.

The co-ordination of identification of quarantine threats in neighbouring countries and in countries that have significant contact with Australia through trade and tourism is also very important. To strengthen border responses, the report recommends the establishment of comprehensive detection databases and information systems. These will provide the basis of risk analysis assessments.

The Review Committee suggests that quarantine policy should be implemented by a separate statutory authority to be known as Quarantine Australia. This body would assume all the functions of the Australian Quarantine Inspection Service (AQIS), with the exception of meat inspection, and would operate at a distance from government. The Board of Directors would be appointed by and responsible to the Minister for Primary Industries and Energy.

By contrast, a recent Senate Committee report recommended separating risk assessment and risk management processes, and favoured the Minister or Government

making decisions, rather than an independent statutory authority. The proposed establishment of a register of stakeholders, who would be regularly consulted by Quarantine Australia, is consistent with the report's overall aim of ensuring a unified government, industry and community approach to quarantine.

An increased focus on plant quarantine issues is another key recommendation of the report. The rate of incursions of plant pests and diseases into Australia over the past 25 years is approximately 10 times higher than for animals. To help address this problem, the Review Committee suggest an Australian Plant Health Council and a Chief Plant Protection Officer position should be created.

The Committee also recommend an increase in funding for quarantine and quarantine related activities, and the updating of quarantine associated legislation.

Finally, the Review Committee found that much of the criticism of the effectiveness of AQIS cannot be supported by the facts. Four studies commissioned by the Committee show no significant change in the rate of plant or animal incursions over the last 25 years, except perhaps for weeds.

A Steering Committee has been formed within DPIE to oversee a Nairn Implementation Taskforce. "The Steering Committee and the Taskforce will formulate a response to the report, taking into account resource issues and existing policy," the Minister said.

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		<b>FAX: (066) 525474</b>



# Industry Manager's Say ...

By Wayne Prowse



In our first TA for 1997 I wish all readers a happy new year. The many positive comments received for these columns encourage me and I trust that I can continue to provide interesting and relevant information

on marketing programs in 1997.

In this issue I will include a detailed look at the development of in-store demonstration programs and plans for the June quarter.

I have also included updated Flemington Market statistics that were of interest last time (see graph opposite). Avocado volumes through this market are up 33% on last year and even though prices in some areas are down the overall industry value is up 15% in the July to January period compared to last year and up 24% on the last 3 year average.

The Sunshine Coast Avocado Growers warmly welcomed me to their meeting in December and I had the opportunity to discuss industry marketing programs.

In March I plan to attend the NSW Avocado Growers AGM as well as the AAGF Autumn meeting. Getting out and talking with growers remains a key priority in order that we at the AHC can understand your needs and work with you to achieve industry growth through effective use of your levy funds on promotion and market research.

## Your Levy at Work

### In-store demonstrations

The 1997 program will commence late February and run for a 12 week period through to the end of May, covering a cross section of high volume retail chains and independents. Demonstrations are being planned in each State as follows:

- NSW 50 x 8 hour demonstrations
- QLD 30 x 8 hour demonstrations
- VIC 40 x 8 hour demonstrations
- SA 30 x 4 hour demonstrations
- WA nil - activity focused on August - October period.

### Public Relations

A major event in April will be a celebrity food media luncheon in Sydney. We are expecting some 20 of Australia's well-known food writers to attend and hear

speakers discuss the culinary and nutrition benefits of avocados. Dr Jane Barry will speak on the health benefits of avocados. Growers and other industry representatives will be involved and the opportunity for face to face discussion should generate good industry publicity.

The Avocado "a prescription for life" press release issued in December is working well with some key medical magazines confirming that they will be running the article in their Autumn issues.

In a March issue of Woman's Day a full page "Avocado competition" is being featured with all avocado related prizes being donated to provide a prize pool of over \$12,000.

### Selected Advertising

Advertorials<sup>1</sup> will appear in the "Mother to Be" and "Baby Care" magazines for 12 months from April. These magazines are distributed free to 95% of new mothers through the national hospital system. If any of you know of anyone expecting a baby, they should look out for the avocado message on nutrition and avocados as a first food.

A full page feature, at no cost appears in the current edition of the Heart Health magazine. This is distributed to some 100,000 consumers who have their cholesterol levels checked at the special mobile clinics that move around to various shopping centres. This is a repeat of the feature we paid for in the July - December edition.

In the June issue of Family Circle (on sale 8 May) we will have a full page feature on avocados that will focus on the taste of avocados making a healthy meal extra special. We'll try to run this in the June TA.

<sup>1</sup>Advertorials are paid advertising features prepared by the magazines and presented like editorial for greater credibility with readers.

as well.

### In-Store Demonstrations - A Closer Look

A face-to-face message is usually far more effective than a written or broadcast message and an in-store demonstration is a means of delivering a personal message to consumers. Not only can they taste an avocado, a trained demonstrator can answer questions and talk up the benefits of avocados in a diet.

In-store demonstrations consume approximately 25% of the domestic promotion budget.

Once the Avocado Marketing Forum has recommended a level of in-store demonstrations and it is agreed by the AAGF and AHC we work with QFVG promotions co-ordinator Abigail Ulgiati to allocate funds to a demonstration agency in each state based on market sizes. We also nominate periods of the avocado season when supplies are at their most abundant.



Liz, one of our demonstrators discusses avocados with a consumer.



# AUSTRALIAN HORTICULTURAL CORPORATION

We prepare briefing notes that fully explain the key selling points that we want the demonstrator to discuss with consumers. At this point it is important that the message is consistent nationally as it ties in with PR and other advertising programs. The notes also contain details on how the avocados are to be prepared, the recipe to be used (if any) and any other details needed to ensure that the demonstration runs smoothly and allows maximum time to be spent with consumers.

The demonstration agency arranges the booking of demonstrations in retail stores taking care to include those that have a high sales turnover during the periods that we agree. Most demonstrations are 2 days x 4 hours to total 8 hours in each store.

About a week before the program commences all demonstrators who are to work on the program attend a briefing and are given their notes and a list of stores and times to conduct demonstrations as booked. Where possible an industry representative is present. This year several of the demonstrators will participate in "Retail Handling of Avocados" workshops that will give them more knowledge to relay to retail produce managers.

A few days before each demonstration the demonstrator phones the store produce manager to confirm the demonstration and ensure ripe avocados will be available.

At the conclusion of each demonstration the demonstrator must complete a report that covers sales information, consumer and retailer comments. All the reports are then summarised and the information reported back to the AHC and your industry. This completes the valuable two-way communications with consumers with the industry message going out and consumer comments coming back. The exercise becomes as much market research as it is promotion.

Demonstrations however are a costly method to reach consumers. A demonstrator may talk to 150 to 200 consumers in a good store in 8 hours. At a cost of around \$200 per demonstration this works out at \$1.00 to \$1.33 per person (or impact). A magazine that may cost \$12,000 for a page will reach 250,000 consumers or more at a cost of less than 5c per impact. Granted, it is not as effective in generating an

## EXPORTS 1995/96

Country	Value \$	Kg	\$ per kg	\$ per 6 kg tray equiv
Singapore	194,794	54,113	3.60	21.60
Hong Kong	121,819	34,755	3.51	21.03
Thailand	26,122	5,758	4.54	27.22
Indonesia	21,116	4,080	5.18	31.05
United Arab Emirates	14,833	2,347	6.32	37.92
New Caledonia	11,600	4,530	2.56	15.36
Saudi Arabia	9,342	2,313	4.04	24.23
Papua New Guinea	7,680	1,680	4.57	27.43
Germany	7,040	900	7.82	46.93
Malaysia	5,062	1,225	4.13	24.79
Bahrain	3,600	852	4.23	25.35
Lebanon	3,220	700	4.60	27.60
Brunei	500	120	4.17	25.00
<b>Total</b>	<b>426,728</b>	<b>113,373</b>	<b>3.76</b>	<b>22.58</b>
<b>Last Year</b>	<b>789,000</b>	<b>270,000</b>	<b>2.92</b>	<b>17.53</b>
<b>Difference</b>	<b>-46%</b>	<b>-58%</b>	<b>29%</b>	

Source : ABS 1996, AHC Analysis

immediate sale but what is important with our total program is achieving a good balance or PROMOTION MIX of face-to-face and mass communications to deliver a consistent message that encourages consumers to purchase more avocados.

## Other News

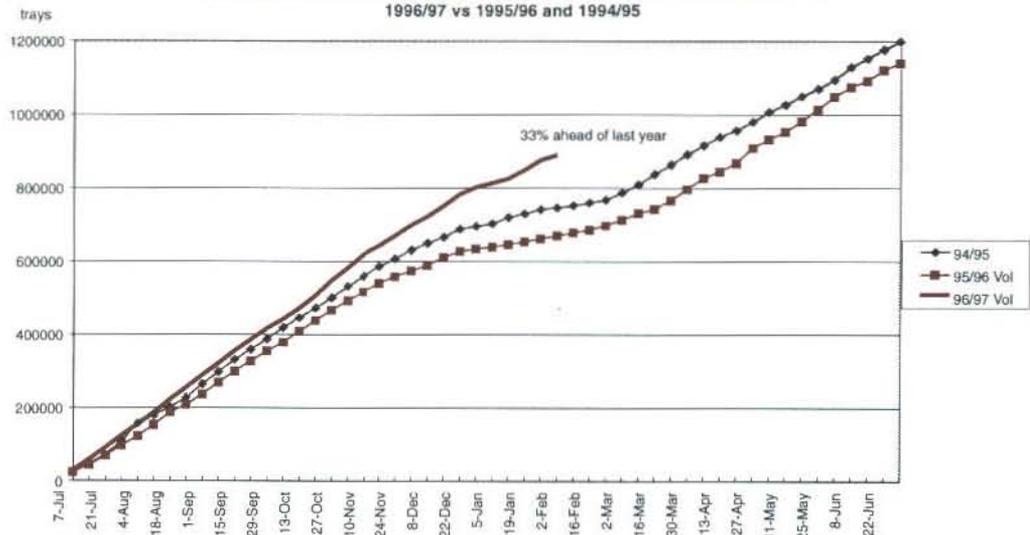
Those of you who knew Bart Gannon will be interested to hear that he resigned from the AHC in December. Bart had been Industry Manager for Avocados prior to taking on the role of Industry Services

Manager in 1995. We wish Bart well in his future.

## Exports

Exports of Avocados for the year ending June 1996 were 113 tonnes, a drop of 58% on the previous year (see chart above). The average price increased by 29% to 3.76 per kg or approximately \$22 per tray. This confirms what exporters have said in that they have been focusing on markets where more profitable returns were being generated at the expense of volume.

CUMULATIVE VOLUME OF AVOCADOS THROUGH FLEMINGTON MARKETS  
1996/97 vs 1995/96 and 1994/95



source : Flemington Market Reporting Service, AHC Analysis



# The Australian Avocado A Prescription For Life

*For thousands of years since Hippocrates said in 400 BC 'Make Food Thy Medicine' society has searched for a miracle food not only good for health and vitality, but one that tastes great. Australian Avocados are the answer to the prescription for life.*

Australian doctors are being urged to look beyond their prescription books and to recommend **avocados** to their patients to prevent or treat many of the common ailments in our society.

In our affluent, overfed society, many of our major diseases are related to poor nutrition. This is the message from the Australian Horticultural Corporation, which is currently promoting the health benefits of **avocados** to Australian doctors.

According to the Guinness Book of Records **avocados** are the world's most nutritious fruit. Current recommendations for a healthy diet are low saturated fat, high fibre, low salt, with vitamins, minerals and anti-oxidants. **Avocados** fit the prescription perfectly.

As well, **avocados** are a quick fix in our busy stressful lives—they require no preparation or cooking, and can be added to salads, sandwiches or dips, or simply enjoyed on their own.

But according to Dr Jane Barry, it's the health benefits of **avocados** which have been overlooked. 'Medical research shows avocados have a role in preventing birth defects, heart disease and cancer.'

Dr Barry said that **avocados** could be part of the solution to these and other health problems and doctors should take time to discuss their benefits with their patients.

## A Healthy Pregnancy

Folate or folic acid—a vitamin present in fruit, vegetables and cereals—is important for all ages, but is especially important in pregnant women. It is essential for the healthy development of the baby's brain and nervous system. Recent studies suggest that folate deficiency is one of the most common vitamin deficiencies in the world. Because many pregnancies are unplanned, it is important that **all** women of childbearing age have enough folic acid in their diet.

By increasing folate intake before conception and during the first three months of pregnancy, the risk of some birth defects, particularly abnormalities of the brain and spinal cord, can be reduced by 75%.

One **Australian avocado** (180 gm) contains 100 micrograms of folate which is 25% of the Recommended Daily Intake

(RDI) for women and 50% of the RDI for men. Because folate is easily destroyed by heat, avocados are a particularly good source as they are normally eaten uncooked.

## A Healthy Heart

Heart disease is the major cause of death in the world. Many factors—including family history, high blood pressure, smoking and exercise—play a part, but poor diet is one of the biggest risk factors and one of the easiest to change. The typical 'Western diet' which is high in saturated fat is a major cause of disability and death due to heart disease. Many health professionals recommend a low fat diet but these are difficult to live with and may cause a reduction in the protective HDL cholesterol (the good cholesterol).

A better solution is a diet which is low in saturated fat but high in monounsaturated oils. These are much more palatable, often result in a **greater** reduction in cholesterol than the low fat diet without reducing the 'good' HDL cholesterol. This is the basis of the 'Mediterranean diet' which for centuries has been associated with a low risk of heart disease.

Avocados are rich in monounsaturated fatty acids, low in saturated fat and have no cholesterol. As a bonus they have vegetable protein, fibre and antioxidants which also appear to reduce the risks of heart disease. Because they improve the taste and texture of an otherwise low fat meals people are more likely to continue a healthy eating pattern.

## Maintaining Good Blood Pressure

High blood pressure is common in our society. The real danger is that most people with high blood pressure have no symptoms, but untreated, it silently damages blood vessels causing heart attacks, strokes and kidney failure.

In many cases, people with mild to moderate high blood pressure can reduce their blood pressure simply by changing their lifestyle—improving their nutrition, losing weight and increasing their exercise. The recommended diet is low in salt, but high in potassium, magnesium, calcium, unsaturated fat and dietary fibre.

Avocados are ideal as one half of an avocado (90 gm) has 423 mg of potassium

but only 2 mg of salt. They have high levels of magnesium, unsaturated fat and fibre as well as some calcium.

## Reducing The Risk Of Cancer

Cancer remains one of our most feared and most common diseases. One exciting area of research involves the role of nutrition in preventing cancer. Anti-oxidants (including Vitamins A, C, E and carotenoids) appear to neutralise 'free radicals' which can damage cells causing cancer, hardening of arteries and aging. However treatment with vitamin supplements has not given the same benefits as treatment with these anti-oxidants in their natural form, i.e. fruit and vegetables. This is probably because there are many more nutrients involved than we currently understand. Fruit and vegetables also contain fibre, which is known to reduce the risk of bowel and other cancers.

Current recommendations to reduce the risk of cancer is a diet with lots of fruit and vegetables, particularly those containing Vitamins A, C, E and carotenoids.

Avocados, being the most nutritious fruit in the world, are rich in anti-oxidants—both those we have identified and those we are still learning about.

## Healthy Living

Many of the health problems in our society are caused or aggravated by poor nutrition despite being surrounded by an abundance of healthy food. Problems such as being over or under weight, feeling tired and run down, being prone to infections or constipation can often be traced to poor diet. Many people become confused by the medical reports in the media about what is good for you and what is bad—even the 'experts' can't agree.

In the final analysis, a healthy lifestyle is based on good nutrition, regular exercise, moderation in alcohol consumption, no smoking and a positive outlook. While the controversies in nutrition change, the basic principles remain the same—low saturated fat, low salt, high fibre, and a range of vitamins and minerals.

**Avocados—the most nutritious fruit on earth—fulfil all these requirements. They are the perfect prescription for good health.**

# Dry Heat Treatment on Avocados

*From Tropical Produce Marketing News, December-January 1996*

Dry heat treatments of avocados prior to low-temperature storage reduces chilling injury and increases shelf-life according to recent research on the Hass variety conducted by the Horticulture and Food Research Institute of New Zealand.

While low temperature storage delays ripening of avocados, allowing shipments to more distant markets, skin blackening results when temperatures dip below 6°C. The research on Hass avocados was justifi-

fied by other recent studies which have shown the effectiveness of reducing chilling injury in other fruits (mango, orange, tomato and Sharwill avocados).

The researchers found that Hass avocados treated at 38°C for 3 to 10 hours or 40°C for one-half hour could be stored at even lower temperatures (2°C) increasing shelf-life over fruit stored at 6°C without causing chilling injuries or reducing internal fruit quality. The researchers further

believe that there maybe pest treatment applications because many insects are intolerant of these lower temperatures.

Additional details on this research are available in the November 1995 issue of the Journal of the American Society for Horticultural Science or from researcher Allan Woolf at the Horticulture and Food Research Institute of New Zealand (Mt. Albert Research Centre, Private Bag 92169, Auckland, New Zealand).

## Cold Storage - Using Lower Temperatures

*By Surachat Vuthapanich (Univ. Queensland) and Peter Hofman (DPI, Queensland)*

Storage under low temperature is the main mechanism for extending the life of perishable agricultural produce. It works by slowing down product metabolism and reducing deterioration. The effect is greater with lower storage temperatures, however there is the risk of undesirable effects if the temperature is too low or the storage time too long. These undesirable effects generally result in what is called chilling injury (CI), which in avocado usually appears as blackening and pitting of the skin, and discolouration of the flesh. Therefore, the challenge is to store the fruit at a temperatures which slows down deterioration the most, but do not cause CI.

The storage temperature usually recommended for avocado is 5-7°C, which is mainly based on research results from overseas. However, there is some evidence that lower storage temperatures are possible, and research in Israel and California often uses about 2°C as a standard temperature for storage research.

To get some indication of whether Australian avocados can be stored at temperatures lower than 5-7°C, 'Hass' fruit was harvested from a commercial orchard at Childers, and from Toowoomba, at three stages of maturity (early, middle and late) during the 1994 and 1995 seasons. The fruit was then ripened at 22°C, or stored at 7, 2 and 1°C for three or five weeks.

### Disorders

Fruit ripened without storage did not develop any abnormal skin discolouration, nor did those fruit stored at 7°C for either three or five weeks. However, storage at 1

or 2°C caused brown to black patches to develop on the skin within one week of storage. The discolouration increased in area after two weeks, but then did not increase with longer storage. The problem was similar in fruit from the two districts, but fruit from Childers were worse when harvested early, and those from Toowoomba were sometimes worse when harvested later.

In contrast, flesh discolouration (brown areas in the flesh) were common in fruit stored at 7°C, especially for the longer storage time of five weeks. There was no flesh discolouration in more mature fruit from Childers when stored at 1 or 2°C, and only slight discolouration in the less mature fruit. Fruit from the Toowoomba orchard had a higher incidence of discolouration than those from Childers.

Also, vascular browning was only observed in fruit from Toowoomba, when stored at 7°C, and became worse when stored for longer times, and in less mature fruit.

### Disease

Stored fruit had more anthracnose than those ripened immediately after harvest, and disease increased with longer storage times at both temperatures. In some instances disease was higher in fruit stored at 1 and 2°C compared to those stored at 7°C, but this was not consistent.

### Conclusions

These results indicate that fruit stored at 7°C do not develop skin discolouration during storage, but are far more likely to develop flesh disorders, especially if the

storage time is greater than about three weeks. However, storage at 2°C will significantly reduce the risk of internal disorders (even with storage for longer than five weeks), but will increase the risk of skin discolouration.

Therefore, we need to decide which is the "lesser of the two evils". Skin discolouration is an easily detected disorder, but becomes less obvious as cultivars such as 'Hass' ripen because of their black skin. The internal disorders only become obvious when the fruit is cut. As such, it is more difficult to determine the severity of this problem, but can have an important negative effect on consumer confidence and repeat purchase.

There may be wisdom in a re-evaluation of the current long-term storage temperature recommendations, and an attempt to reduce the skin discolouration that occurs at lower storage temperatures, rather than attempt to reduce the internal disorders that occur at higher temperatures. There is already some indication that skin discolouration with low storage temperatures can be reduced, because of the results from Israel and New Zealand that pre-conditioning the fruit by storing at about 38-40°C for 6-12 hours before cold storage can reduce skin discolouration during storage.

The additional benefit to this approach is that fruit may be stored at temperatures low enough for use as a cold disinfection treatment against fruit fly, which requires about 16 days at 1°C. It is important that this area be addressed in more detail because of the imminent banning of the current chemical disinfection treatments.

# Citrus Research - More Helpful Information For Avocado Growers

For those growers who found the articles on Orange Picking Bags and Orange Field Bins useful, here are two more articles that should be of interest.

Keep in mind the research was done for the citrus industry and what applies to that industry may not be the best solution for avocados.

Growers should read these articles and assess for themselves whether or not the technology applies in their case. If it does, look at how the principle can be adopted.

## Ways To Improve Orange Harvesting

*By Dr. Ghassan Al Soboh, Research Fellow and Dr. Graham Moore, Senior Lecturer, University of Melbourne*

Are you interested in knowing how much a power ladder can improve the productivity of an orange picker? Would you like to know how much time a fruit picker spends on various orange harvesting activities using a power ladder or manual ladder? If so, a recent study conducted by The Agricultural Engineering Research Group at the University of Melbourne and funded by the Horticultural Research and Development Corporation (HRDC), may have the answers for you.

The purpose of this study was to estimate the time needed to perform various orange harvest activities using power and manual ladders, and to evaluate the average harvest rates of orange pickers from different positions.

There are currently two main orange harvesting systems in use in Australia, the manual ladder-bag system and the power ladder system.

For many years manual harvesting of oranges has not changed. A picker carries a picking bag, ascends an aluminium ladder, picks oranges and puts them into a bag,

descends the ladder when the bag is full, and empties it into a wooden field bin or trailer.

In the power ladder harvest system, a picker uses a hydraulically driven cage to get to the top of the tree, positions himself at appropriate locations, picks fruit and put them into a bag inside a metal container or places them on a conveyor belt, and transfers the fruit to a field bin. Fruit at the bottom of the tree is picked manually from ground level.

A time study was performed on the manual and power ladder harvesting systems, taking into considerations the most important variables, to come up with reasonable

estimates of harvest rates. The study was conducted on 25 years old standard Navel and Valencia orange trees (more than 3.5 m high), and Dwarf Valencia orange trees (less than 2 m high).

The results on standard orange trees using the manual ladder system indicated



**A power ladder being used to access tree-top oranges.**



**An aluminium ladder is used to access oranges high in the tree.**



**An orange picker can pick an average of 430 kg/hr from the ground.**

## TECHNICAL REPORT

HARVEST LOCATION AND TYPE OF AIDS	POSITIONING TIME % OF CYCLE	PICKING TIME % OF CYCLE	TRANSFER TIME % OF CYCLE	HARVEST RATE kg/hr
TREE TOP MANUAL	12.2	78.8	9	355
TREE TOP POWER LADDER	5.5	90	4.5	522
TREE BOTTOM MANUAL	0	91.4	8.6	430

### Picker's productivity and time required to perform orange harvest activities at tree top and bottom.



### A picker spends more than 50% of the time, sitting or kneeling when harvesting from dwarf trees.

that orange pickers spend an average of 12.2% of harvest time cycle in ladder positioning, 78.8% in fruit picking and 9% in fruit transfer. The average harvest rate while using the manual ladder to pick the upper portion of the tree was 355 kg/hr.

For fruit picked from the ground, orange pickers spent about 91.4% of the harvest time in fruit picking and 8.6% in fruit transfer. The average harvest rate from the ground was 430 kg/hr.

Using power ladders, orange pickers spent about 5.5% of harvest time cycle in ladder positioning, 4.5% in fruit transfer, and 90% in fruit picking. The average harvest rate picking the tops of trees was 522 kg/hr, an increase of 47% over the manual ladder system.

Another time study on the rate of harvest was conducted in Colignan (VIC) to evaluate the effect of fruit position in the canopy i.e. surface fruit as opposed to fruit more than 0.3 m from the canopy surface. This experiment was important to evaluate the picker harvest rate inside orange trees if a robot was used to harvest fruit from near the canopy surface of the orange tree.

The results indicated that the average harvest rate for fruit near the surface was 408 kg/hr while it was 20% lower, only 324 kg/hr, for the inner fruit.

The time study on dwarf orange trees was conducted in Barham (NSW). The orchard was planted in Valencia trees with a 4.8 x 2.3 m row and tree spacing. The average tree height was about 2 m.

Orange yield and size in dwarf trees were below the normal average in 1996 because of wind and weather conditions. Oranges on standard trees were much better in terms of yield and size compared to oranges on dwarf trees.

Pickers were asked to harvest oranges from dwarf trees and standard trees nearby for comparison.

The results on dwarf trees indicated that the picker spent about 90% of the harvest time cycle picking and 10% in fruit transfer with an average picking rate of 415 kg/hr. On standard trees picking from the ground, the picker spent about 94% of the harvest time cycle in picking fruit and only 6% in fruit transfer, with an average harvest rate of 491 kg/hr.

Using a manual ladder on standard trees, the picker spent about 9% of the harvest time cycle in ladder positioning, 85% in fruit picking and about 6% in fruit transfer with an average harvest rate of 470 kg/hr.

The higher harvest rate in standard trees compared to dwarf trees was partly due to the higher yield and larger fruit size, rather than a greater number of fruit being picked.

A similar study conducted on apple harvesting in the USA in 1968 indicated that the harvest rate per picker increased by 20% to 35% on dwarf trees compared to standard trees.

During orange harvesting from dwarf trees, the picker spent more than 50% of the harvest time sitting or kneeling to reach oranges that were near the ground. These positions appeared to be uncomfortable and affected the picker's productivity.

The impact of working for long periods of time in these positions on picker productivity, physical fitness and health need to be investigated. Comments on these harvesting positions indicated that it was preferable to work on a manual ladder than to crawl around the tree. This would indicate that in times of labour shortage, pickers may be more likely to choose to work in conventional orchards that have been skirted rather than dwarf orchards.

Previous research by NSW Agriculture has shown that higher yields can be achieved by planting at high density. In 1993 it was reported that at a planting density of 864 trees/ha, the accumulative yield per hectare after 20 years increased more than 50% compared to the planting density of 222 trees/ha.

### Summary

In summary, using manual ladders, orange pickers spend an average of 12.2% of harvest time cycle in ladder positioning, 78.8% in fruit picking and 9% in fruit transfer. The average harvest rate of a picker picking the tops of standard size trees (more than 3.5 m high) was 355 kg/hr.

When picking the bottoms of trees, pickers spend about 91.4% of the harvest time cycle in fruit picking and 8.6% in fruit transfer. The average harvest rate from the ground was 430 kg/hr.

Using power ladders, the average harvest rate for the tops of trees was 522 kg/hr; an increase of 47% over the manual ladder system.

The average harvest rate of oranges near the canopy surface from outside the orange trees was 20% higher than for fruit picked from inside the trees.

Picking from dwarf orange trees eliminates the need for ladders and may improve the picker's productivity if tree productivity is normal.

Picking from dwarf trees requires pickers to spend a considerable time working on their knees.

Further study is recommended to evaluate the impact of high density dwarf orange trees on harvest rate, fruit handling, harvest aids, machine sizes and cultural costs.

# Ways To Improve Orange Field Bin Handling

By Dr. Ghassan Al Soboh, Research Fellow and Dr. Graham Moore, Senior Lecturer, University of Melbourne

Over the years, citrus growers in Australia have used forklifts and trailers to transport citrus from orchards to packing sheds. These handling systems vary in type and sizes according to region, grower's preference and needs. However, none of these systems have been proven to be an effective orange handling system.

## Forklift System

Most field bins are transported in the orchards with forklifts. A standard forklift carries 2 to 3 empty bins, from a truck or roadside, and places them between tree



Transporting field bins by forklift.

rows a bin every 4 to 6 trees depending on the tree size and yield.

After the bins are filled with oranges, they are collected and carried in a stack of 2 to 3 bins. The travel distance of a forklift in an orchard varies a lot according to the orchard size and bin destination. The full bins are usually transported to the shed or to roadside ready for trucking to the packing shed.

The forklift system has been used mainly with the manual ladder-bag harvesting system. Field observations showed that the forklift system is impractical to use with a power ladder or a platform harvest system. Bins sitting on the ground between the rows tend to obstruct the machine's movements.

The forklift system causes pickers to waste a lot of time transferring fruit from the picking bags to the bins. In some cases, pickers have to walk long distances back

and forth from the picking spot to empty their bags into unfilled bins.

The forklift system causes growers to distribute more bins in the orchard than they need. This problem has a serious impact on the packing sheds and other growers, especially during peak harvest times when bins are needed most.

Field observations showed that the visibility of a forklift operator is very poor when a stack of 3 bins is carried in front of the forklift. Also, the empty bins were unstable on the forklift during handling and tended to fall if orchard conditions were rough.

A time study on a forklift handling system indicated that the average time required for a forklift to travel 1 km in the orchard with 3 empty bins was 207 seconds with an average travel speed of 17 km/hr. The time required to load or unload 3 empty bins was 90 seconds with an average of 30 seconds per bin. Loading 2 full bins on the forklift took 120 seconds with an average of 60 seconds per bin. The

unloading time was only 90 seconds with an average of 45 seconds per bin.

Forklift travel time in the orchard for 1 km with 2 full bins was 270 seconds with an average speed of 13 km/hr.

A forklift handling system is an expensive practice. The capital cost of owning and operating a forklift in the orchard is very high.

In-field transport of bins should be performed by trucks or trailers because forklifts are slow, have limited capacity and are expensive. The forklift should only be used to handle field bins for short distances i.e. load and unload bins from a truck, and distributes bins in the orchard. The speed of transporting 2 full bins in the field is slow especially in rough field conditions.

## Trailer System

Citrus growers in Australia are using four types of field trailers, MIA Field

Trailer, 3-Bin Trailer, 4-Bin Trailer and 5-Bin Trailer. A time study was conducted only on 3, 4, and 5 bin trailers because they are the most common trailers. The MIA field trailer is similar in size to 3 or 4 bin trailer.

## MIA Field Trailer

The MIA trailer is being used mostly in the Murrumbidgee Irrigation Area (MIA) of NSW. The trailer capacity is between 1 and 3 tonnes of oranges. It is supported on two wheels and towed behind a tractor in the orchard. A trailer is usually assigned to each picker. When the trailer becomes full, the picker drives it back to the shed and empties the fruit through a rear gate into a ground accumulator.

In this handling system the number of trailers needed in the orchard is higher compared to other trailer types. If the picker drives the tractor/trailer to the packing shed and there is a delay in unloading, a lot of valuable picking time may be lost. With other trailer types, forklifts can be used to unload field bins at the packing shed and one trailer can serve several pickers.

Fruit quality is also affected when transported in the orchard because of the large container size, rough internal finish, and rough orchard conditions. Therefore, the MIA trailer is recommended only to transport fruit destined for processing.

## Three-bin Trailer

The 3-bin system consists of 3 (usually) wooden bins on a trailer towed behind a tractor. The trailer is supported on two middle wheels and a front linkage attached to the tractor. The trailer is designed with a step on each side for pickers to stand on to empty their picking bags into the bins.

If a power ladder harvesting system is used, then a 3-bin trailer and tractor is assigned to two pickers. The first picker drives the tractor and picks oranges from the bottom of the tree while the other drives the power ladder and picks from the top of the tree. Some growers also use this system with the manual harvesting system. In this case, a 3-bin trailer tractor combination is assigned to each picker.

The results on a 3-bin trailer indicated that the average loading time for 3 bins was 60 seconds with an average of 20 seconds per bin. The average time required to

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travel 1 km in the orchard was 165 seconds at a speed of 22 km/hr. When the bins were full, the time required to travel back to the shed was 185 seconds at an average speed of 19 km/hr. Unloading the full 3 bins off the trailer took about 75 seconds, an average of 25 seconds per bin.

The 3-bin trailer system offers several advantages over a forklift handling system. It can handle more bins and allows the operator to drive with better visibility. The time cycle is 41% less than it is for a forklift system travelling the same distance. This system can be used with both manual and power ladder harvesting systems, while the forklift system can be used only with the manual harvesting system.

### Four-bin Trailer

The 4-bin trailer system is very similar to 3-bin trailer system. However, the trailer is longer and designed with rollers on the trailer base. The rollers are placed in two rows along the trailer base to allow bins to be loaded and unloaded without a forklift. The 3 and 4-bin trailers are built locally in various regions in Australia at a cost of \$2,500 each.

The trailer is attached to a tractor through the lower three point linkage arms rather than the drawbar as is the 3-bin trailer. The hydraulic linkages allows the operator to raise and lower the rear end of the trailer to load and unload bins. Although there is no need for a forklift to load and unload bins on the trailer, there is a need for a forklift to place bins on the ground before loading them manually on the trailer, and to stack them vertically in the shed when they are full.

The results on 4-bin trailers indicated that the time needed to load 4 empty bins from the ground to the trailer was 60 seconds with an average of 15 seconds per bin. Travel time for 1 km distance in the orchard with empty bins took about 327 seconds at a travel speed of 11 km/hr. With full bins, the trailer required 436 second to travel the same distance to the shed at an average speed of 8 km/hr. The time required to unload 4 bins on the ground was 120 seconds with an average of 30 seconds per bin.

Field observations on the 4-bin trailer indicated that manually loading 4 empty bins from ground level was as fast as with a forklift. However unloading full bins from the trailer to the ground was slower than unloading with a forklift. Travelling speed of a 4-bin trailer was slower by 50% when the bins were empty and by 58% when the bins were full, than a 3-bin trailer because a 4-bin trailer is longer and heavier.

### Five-bin Trailer

The 5-bin trailer combines aspects of forklift and trailer. It has two long arms with a hydraulically driven chain on each to help load and unload bins. The hydraulic chains are activated by the tractor's hydraulic system.

Contrary to standard trailers, the 5-bin trailer is attached to the front of the tractor and is driven forward. This design offers better operator vision.

The trailer is capable of loading and unloading field bins hydraulically from ground level. However, if field bins were placed in stacks, then a standard forklift is required to place them on the ground before the 5-bin trailer can load them. The machine is built locally in the Sunraysia region at a cost of \$11,000.

The results of trials on a 5-bin trailer indicated that the machine required 60 seconds to load 5 empty bins from the ground with an average loading time of 12 second per bin. The time required to travel 1 km in the orchard, was 271 seconds with an average field speed of 13 km/hr. It took the trailer 64 second to unload the bins in the orchard with an average time of 13 second per bin.

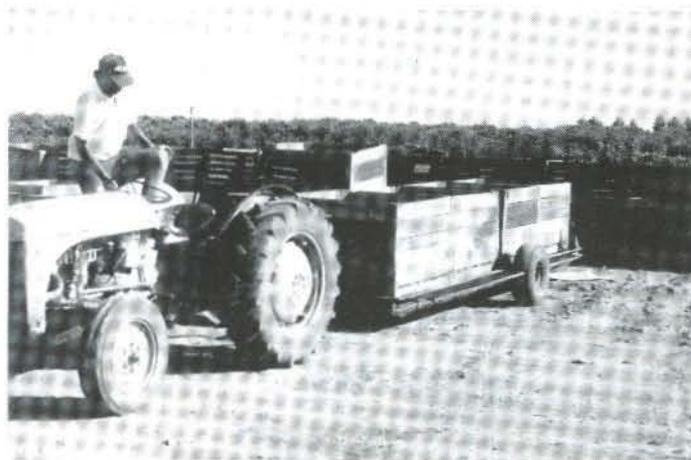
Collecting and loading the 5 full bins on the trailer took about 158 seconds with an average of 32 seconds per bin. The trailer required 272 seconds to drive back to the shed with 5 full bins at an average speed of 13 km/hr. Unloading the 5 bins to the ground was only 33 seconds with an average of 7 seconds per bin.

The 5-bin trailer has an important advantage over other types of trailers. It can carry up to 15 empty bins in 5 stacks and deliver them to the orchard. However, the operator has to drive the tractor backwards to be able to see his way and be careful when the bins are unloaded in the field, otherwise the bins will fall causing bin damage.

This trailer can be used only with a man-

Handling System	Number Of Bins	Time Cycle (sec)	Average Time
2-Bin Fork-lift	3 Empty 2 Full	827	369
3-Bin Trailer	3 Empty 3 Full	485	162
4-Bin-trailer	4 Empty 4 Full	943	236
5-Bin-trailer	5 Empty 5 Full	848	172

Time cycle required to handle bins 1 km in the orchard using various handling systems.



A tractor and 4-bin trailer unit.

ual harvesting system where bins are required to be placed on the ground between the tree rows.

### Summary

Transporting of bins within the orchard should be performed by trucks or trailers because forklifts are slow, have limited capacity and are expensive. The forklift should only be used to handle field bins for short distance.

The MIA field trailer handling system is not recommended unless the fruit is destined for processing and the packing shed is close to the orchard.

Forklifts and 5-bin trailers are not suitable to use with a power ladder harvesting system. Field bins between rows tend to obstruct power ladder and platform movements in the orchard. These handling systems are useful with manual harvesting system.

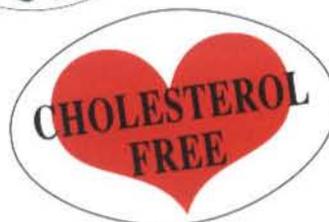
The fastest handling system is a 3-bin trailer followed by a 5-bin trailer then a 4-bin trailer. The 3-bin trailer saves about 5% and 30% of handling time per bin compared to 5-bin and 4-bin trailers respectively. This can be attributed to the fact that a 3-bin trailer is smaller and lighter than the other two trailers which allows it to move faster in the field.

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