Talking Avocados

The Australian Newsline

Vol 6 Number 4

November 1995

Dianne Fullelove and George Green comparing notes on the progress of a block of Shepard.

- 1995 Annual Report to the AAGF
- AAGF Research, Development and Extension Plan
- Genetic Engineering

Print Post Approved - 44307/0006

AUSTRALIAN AVOCADO GROWERS' FEDERATION

PRESIDENT
Rod Dalton 074 661316

VICE-PRESIDENT
John Bolton 074 942219

EXECUTIVE OFFICER & SECRETARY/TREASURER
Astrid Kennedy, P.O. Box 19 07 32132477
Brisbane Markets 4106 Fax 07 32132438

FEDERATION DIRECTORS

QUEENSLAND
Mary Ravanello, Mareeba 070 932126
Rod Dalton, Grantham 074 661316
George Green, South Kolan 071 577127
John Bolton, Maleny 074 942219
David Rankine, Mt Tamborine 07 55451046

NEW SOUTH WALES
Phil Connor, Upper Burringbar 066 771455
Lance Powell, Burringbar 066 771597
Alan Hartley, Lindendale 066 295155
Tony Lawrence, Cudgen 066 741655

VICTORIA (Sunraysia)
Marie Karanicolos, Buronga 050 230201

SOUTH AUSTRALIA
Ross Richards, Renmark 085 853178

WESTERN AUSTRALIA
Ron Hansen, Wangara 09 4075019

STATE ORGANISATIONS

ATHERTON TABLELAND AVOCADO GROWERS' ASSOCIATION
President Ron Knowlton 070 921018
Secretary Tracy Battistin P.O. Box 517 070 921018
Mareeba QLD 4880 Fax 070 923614

BUNDABERG & DISTRICT ORCHARDIST'S ASSOCIATION
President Roger Lee 071 579555
Secretary Colin Scotney, Waterview Rd 071 533006
Bundaberg QLD 4670 Ph/Fax 071 532586

SUNSHINE COAST AVOCADO GROWERS' ASSOCIATION
President Ron Lawrence 074 468435
Secretary Brian Prosser, P.O. Box 300 074 467069
Yandina QLD 4561

WEST MORTON AVOCADO GROWERS' GROUP
Convenor Rod Dalton, Sandy Creek Road 074 661316
Grantham QLD 4347 Fax 074 661497

TAMBORINE MOUNTAIN AVOCADO GROWERS' FEDERATION
President Wally McGregor 075 452283
Secretary Paul Williamson, Ben Nevis St. 075 452481
Tamborine Mt. QLD 4272

NSW AVOCADO ASSOCIATION INC.
President Phil Connor 066 771455
Secretary Alison Atkinson, 2 Kooringa Crt 066 803014
Ocean Shores NSW 2483 Fax 066 803014

SUNRAYSIA AVOCADO GROWERS' ASSOCIATION INC.
President Marie Karanicolos 050 235214
Secretary Russell Witcombe, P.O. Box 1620 050 213387
Mildura VIC 3502

SOUTH AUSTRALIA AVOCADO GROWERS' ASSOCIATION
President Ross Richards 085 853178
Secretary Colin Fechner, Box 346 085 412819
Ramco SA 5322 Fax 085 412819

AVOCADO GROWERS' ASSOCIATION OF WESTERN AUSTRALIA
President Ron Hansen 09 4075019
Secretary Alan Blight, 85 Carabooda Rd. 09 4075100
Carabooda WA 6033 Fax 09 4075070

Table Of Contents

Editor and Publisher
Orf Bartrop

AHC Co-ordinator & Advertising Manager
Amanda Wheeler

AAGF Co-ordinators
Phil Connor

Imagesetting
MacBureau, Currumbin

Printing
Hunter Inprint, Devonport

ISSN 1039-2394

This publication is distributed free to all Australian avocado growers and is available to non-growers for a 1996 subscription of:
Australia - $15; **NZ** - $21; and other **Overseas Countries** $25, Australian currency only.

Subscription and **editorial** inquiries should be addressed to Talking Avocados, 28 Nicholls Street, Devonport Tasmania 7310, Australia. Telephone and Fax 004 233230, Mobile 0419 356156.
Advertising inquiries should be addressed to Ms Amanda Wheeler, Communications Manager, Australian Horticultural Corporation, Level 14, 100 William Street, Sydney NSW 2011. Telephone 02-357 7000 Fax 02-356 3661.
Talking Avocados is the official magazine of the Australian Avocado Growers' Federation and in conjunction with the Australian Horticultural Corporation is published four times a year (March, June, September and December).

Calendar of Events

November

15 **Bundaberg & District Orchardist's Association** - meeting Fruit & Vegetable Growers' Office, Barolin St. Bundaberg commencing 7.30 p.M.

26 **Bundaberg & District Orchardist's Association** - Christmas function at the residence of Dianne and Gary Fullelove commencing 4.00 p.m.

December

5 **Avocado Growers Association of WA** - meeting Conference Room, Market City commencing 5.30 p.m.

8 **Richmond Branch of the NSW Avocado Association** - Field Venue meeting at Lindenvale Estate, 158 Lindendale Road, Lindendale commencing 3.00 p.m.

1996

February

2 **Avocado Growers Association of WA** - meeting Conference Room, Market City commencing 5.30 p.m.

21 **Bundaberg & District Orchardist's Association** - meeting Fruit & Vegetable Growers' Office, Barolin St. Bundaberg commencing 7.30 p.m.

March

5 **Avocado Growers Association of WA** - meeting Conference Room, Market City commencing 5.30 p.m.

19-20 Australian Avocado Growers' Federation - meeting QFVG Brisbane Markets, Rocklea.

Talking Avocados

As from the next issue, Talking Avocados will be published a month later than in the past. This is to allow more time for the preparation of articles after the Christmas holiday period.

So don't feel dismayed when your copy does not arrive in early February, it will be posted in early March, with further editions in June, September and December.

Front Cover: As part of the AVOMAN project, Dianne Fullelove and George Green collect data on the progress of a very uniform block of Shepard avocado trees.

Back cover: An example of the new Block Recording Wall Chart as designed by Gary Fullelove (see articles pages 26 and 27).

From the President

At the September meeting of the AAGF, two motions concerning the membership of the AHC by the Avocado Industry were passed.

1. That the Partnership Principles dated 1 September 1995 provided by Mr John Baker AHC, are adopted in principle.
2. That the Australian Avocado Industry develops plans to withdraw from the AHC by no later than 30 June 1997.

The 'Partnership Principles' was seen as a document which provided a fair basis for the relationship between the AAGF and the AHC. Previous drafts of the Memorandum of Understanding (MOU) had not been acceptable to the AAGF as they provided no equality in the relationship.

The motion to develop plans to withdraw from the AHC is a proactive move placing the industry and the AHC on notice. The issue of membership of the AHC has been consuming far too much of the Federation's time for the past 2-3 years.

As a consequence of this motion all parties involved, the AHC, the AAGF, the State bodies comprising the Federation and the growers, must seriously review their position and evaluate all options for the future. Careful consideration needs to be given to issues such as: the role of the AAGF and its long term funding, the role of the AHC in the long term particularly with respect to the Avocado Industry, funding of the promotion of avocados in Australia and in export markets and alternative sources of revenue for the Industry.

All growers are urged to carefully consider this issue and provide the Federation, through their directors, with guidance. The issue will be discussed extensively at local level in the coming months.

Rod Dalton
President AAGF

Papaya Fruit Fly

A Major New Pest Of Horticulture

The appearance of the Papaya Fruit Fly in Far North Queensland has sent the Fruit and Vegetable industries into turmoil. Papaya Fruit Fly *Bactrocera papayae*, depicted in the accompanying photograph is endemic in Papua New Guinea, Thailand, Indonesia, Malaysia and Singapore but has not been previously detected in Australia.

The fly infests all edible fruit except pineapples; all vegetables except chokos, beans, peas, root vegetables (potatoes, sweet potatoes, carrots and onions) and leafy vegetables, such as lettuce and cabbages.

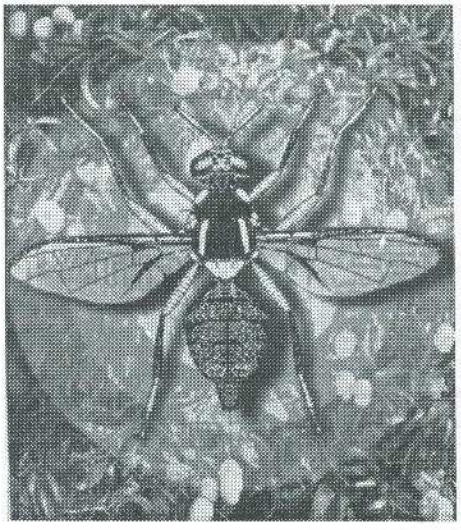
Like most tropical fruit fly species, papaya fruit fly multiply rapidly and can quickly spread over a large distance. It is capable of establishing in any of the mainland States of Australia.

Papaya fruit fly is about the same length as a common house fly but more slender. It grows to 7 mm in length and has clear wings, generally black chest and paler abdomen with a distinctive black T-shaped marking on the back. The Queensland fruit fly, by comparison, is much the same size but is an overall reddish-brown colour.

An expert eye is needed to identify it under a microscope.

The Queensland Department of Primary Industry has moved quickly to control the outbreak. A quarantine area has been declared with special suppression zones radiating 80 km from confirmed trappings. Current quarantine requirements are a dip or flood spray with dimethoate.

The Avocado Industry on the Tablelands is able to meet these requirements as sheds already have the necessary equipment. Shed accreditation to apply for protection against papaya fruit fly is well under way. It is anticipated all growers will be accredited long before the next season begins.



Picture courtesy of The Courier-Mail

From Your Federation

By Astrid Kennedy, Executive Officer

Your Federation held the Annual General Meeting and General Meeting over the 11, 12 and 13 September, 1995.

Annual General Meeting

At the Annual General Meeting, Mr John Bolton stood down as President of the Association, declining nomination as President for a further twelve months.

Mr Bolton presided over the AAGF during a very busy period with activities ranging across Federal Government induced business; the progression of the industry's total quality management philosophy and the development, updating and implementation of the Australian Industry Strategic Plan. On behalf of your Federation we thank Mr Bolton for the time, effort and consideration he expended on behalf of the avocado industry.

The new AAGF President is Mr Rod Dalton who has been a director of the AAGF for four years. He was elected unopposed as President for a twelve month term with Mr Bolton as Vice President.

Notification of Committee Membership

Director's portfolios and Research champions are shown on this page. Directors assigned to portfolios or research projects are responsible for monitoring progress and providing the communications line to the AAGF and to growers. These are your contacts on the particular area of expertise.

General Meeting

AHC

The question of membership of the AHC was resolved at the General Meeting and is the subject of a report from the President, Mr Dalton, on page 3 of this issue.

R, D & E Workshop

Twenty representatives from various sectors of the industry participated in a Research, Development and Extension Workshop in July 1995. The aim was to formulate an R, D & E plan to advance the industry's strategic plan and vision.

The workshop was extremely successful and after two intense days of "brain storming" the industry's opportunities and problem areas were condensed under ten headings to coincide with the major objectives of the Industry's Vision Statement. The resulting plan, the "AAGF Research, Development and Extension Plan 1996 - 2000" has been approved and adopted by the AAGF. A copy of the R, D & E Plan is reproduced on pages 12-17 of this issue.

Endorsing the recommendation of the Workshop, the AAGF established an R, D & E subcommittee responsible for making recommendations to the AAGF for progressing the Plan and reviewing current R, D & E projects and issues.

The subcommittee met for the first time on 19 October 1995 and a brief report of this meeting can be found on page 11.

Subcommittees

Ms Astrid Kennedy is Executive Officer to all Subcommittees

R, D & E Subcommittee

Chairman	Mr George Green
Members	Mr Alan Hartley
	Mr Graeme Thomas
	Mr John Dorrian
	Ms Bonnie Walker

Varieties Subcommittee

Chairman	Mr Rod Dalton
Members	Mrs Mary Ravanello
	Mr Ross Richards
	Mr Lance Powell
Advisers to the Subcommittee	
Nurserymen	Mr Peter Young
	Mr Graham Anderson
Adviser	Mr Alex Kidd (OAM)
Technical advisers	Dr Tony Whiley
	Mr Ken Pegg
	Mr Greg Ireland
Registrar	Ms Astrid Kennedy

Quality Assurance Project

Chairman	Mr John Bolton
Member	Mr Alan Hartley
AHC	Mr Bart Gannon
QDPI	Mr Scott Ledger

Director's Portfolios

Export	Mr Ross Richards
Market Research	Mr Ross Richards
California Avocado Society	Mr Ross Richards
Farm Management Practices	Mr Tony Lawrence
Quality Assurance	Mr Tony Lawrence
Product Handling	Mr John Bolton
Domestic Marketing	Mrs Mary Ravanello
Industry Data	Mr David Rankine
Funding	Mr Ron Hansen
Statistics	Mr David Rankine
Talking Avocado	Mr Phil Conner
Executive Officer	Ms Astrid Kennedy

Research Champions

Med Fly	Mr Ron Hanson
Dry matter maturity	Mr Graeme Thomas
Boron nutrition	Mr Graeme Thomas
Anthracnose	Ms Bonnie Walker
AVOMAN	Mr John Dorrian
Salt tolerant rootstock	Mr Ross Richards
Fruit Spotting Bug	Mr John Bolton

National Product Descriptions

During the March 1995 General Meeting a resolution was passed engaging the AUF to develop a product description system for the avocado industry (refer May 1995 issue). The avocado descriptors, in draft form, were considered and amended by directors with a view to making them acceptable for describing avocados anywhere in Australia. It is expected that the next draft of the descriptors will be the final version and will be adopted at the March 1996 meeting.

Graham Gregory Medal

Scott Ledger, recipient of the AAGF 1995 Award of Merit for services to the avocado industry has won this year's HRDC Graham Gregory medal for excellence in horticultural development. Mr Ledger, principle extension horticulturist with Queensland DPI, was nominated for the award by your Federation as well as by the mango, tomato and apple industries. Dr Trevor Wicks from South Australia won the Research award.

Horticultural Policy Council

The Horticultural Policy Council was wound-up on 31 August 1995 after seven years in operation. The Council transferred its responsibilities to the Horticulture 2000 Group. Your Federation is represented on the Horticulture 2000 Group. The Horticulture 2000 Group issues a summary of its meetings as well as specific reports for industry consideration.

The Papaya Fruit Fly

Your Federation is closely monitoring developments on Australia's new exotic pest the papaya fruit fly.

An outbreak of papaya fruit fly *Bactrocera papayae* has occurred in the Cairns district—the first time this destructive tropical fruit fly species has been detected in mainland Australia. The discovery is being treated very seriously because it is a serious quarantine pest worldwide. Details are available on Freecall 1800 650268.

TALKING AVOCADOS - HAVE YOUR SAY

Dear Sir,

Recently I had the opportunity to attend the Australian Fresh Fruit and Vegetable Combined Industry Conference, Talking Fresh Sydney 1995, held at the Sydney Hilton Hotel from 28 August to 2 September. My reason for being there was to cover the Australian United Fresh (AUF) Fruit and Vegetable Association's component of the Conference in my capacity as its new producer/editor of AUF Fresh News.

What an unforgettable experience the Conference was! It had the impact of restoring my flagging faith in the future of the horticultural industry.

After eight years' involvement as Secretary/Executive Officer of Bundaberg Fruit and Vegetable Growers (a position I stood down from on 5 September), I , like many growers had become totally disillusioned with the horticultural industry.

I have seen many growers (some, excellent farmers) go out of the industry often through no fault of their own—the victims of circumstances outside their control. To make a general observation, once-dedicated horticulturists have lost enthusiasm for their industry, and given a good price, many would sell up and walk away from the industry that once was a way of life. A number have or are in the process of doing so after many years of long hours with little return or compensation for their labours.

The growers' State organisation in Queensland, Queensland Fruit and Vegetable Growers (QFVG), formerly COD, has become only a shadow of its former self. I believe growers often see the QFVG as just another arm of Government helping to implement Government policy which is unwanted by growers and which impacts on the economic viability of their farming operations.

The functionings of the State body are at best, slow, and its structure generally ensures defeat for any industry-related Notice of Motion as it progresses through the twenty or so committees and subcommittees. Growers' disillusionment is reflected in the lack of enthusiasm for taking on a delegate's position and the dismal attendance at local association meetings.

The light at the end of the tunnel has been the move nationally by many commodities to the extent whereby it is now becoming a stampede. Stone fruits have just undertaken this move and may be followed by the mango industry in the not-too-distant future; and it makes considerable sense to move out of the confines of a State body. Why should Queensland growers alone pay promotional and research levies when growers Australia-wide benefit from the deployment of same? This brings me back to the Combined Industry Conference.

What an extraordinary event! Most aspects of the national horticultural industry were there and by that I mean the whole industry: the transporters, the retailers, the markets. The roll call was: Australian Apple and Pear Growers Association, Australian Banana Wholesalers, Australian Chamber of Fruit and Vegetable Industries Limited, Australian Market Managers, AUF, AUF Transport Advisory Council, Coles Supermarkets State Managers, Fruit and Vegetable Industry promotional Organisations, Fruit and Vegetable Retailers, Market Credit Management Organisations and Woolworths Supermarkets State Managers. All had their annual meetings at the Conference.

The decisions taken or being considered affect the whole industry. The Conference is the venue for the launching of many initiatives and undertakings.

Approximately eighty per cent of road transporters were represented at their council's meeting. Decisions taken or considered at this meeting such as their Code of Practice and problems encountered regarding freight collection will impact on growers—yes, and growers could sit in on their meeting and participate!

Growers even had the opportunity to directly elect the Chairperson of the AUF at the Conference. What a refreshing change to actually have direct input into an organisation at the national level and have your vote really count.

The Conference also saw the launching of the Price Look Up Numbers and Bar Coding Systems for fruit and vegetables. The AUF launched its Health Foundation to help sell more fruit and vegetables. The goal of the Foundation for the next twelve months is to raise $500,000, a target which I believe will be easily achieved.

Queensland growers' $103,000 investment in our State's children also was launched at the Conference. Another matter presented at the Conference which will impact on the industry were the production descriptions, an AUF initiative, which is due for release in manual form by Christmas. The AUF Chef of the Year final was a major drawcard as was the high calibre of the speakers who were both informative and entertaining.

The line-up included the high-profiled Bryce Courtenay, Huw Evans, Amanda Gore, Paul Lyneham and the indefatigable Laurie Lawrence. There were others who, on a more sombre note, delivered high-powered presentations on horticultural industry matters.

Where all this is leading is my conviction and belief that the horticultural community needs a national body such as AUF. The opportunities are there for direct participation nationally (as well as state-side) and for members to exercise a real influence over the future direction of the horticultural industry.

Next year the Conference, titled Vision and Decision will be held at the Hotel Conrad & Jupiters Casino on the Gold Coast from 2 to 6 September. I will be there either in my present role as producer/editor of Fresh News or as an individual. I would urge all growers to also avail themselves of the opportunity to be part of their industry at a national level. It restored my faith in the industry's future and direction.

Col Scotney
Editor:
AUF Fresh News, Bundaberg Region Horticultural Magazines, and North Queensland Horticultural Journal.
Bundaberg, QLD

Dear Sir,

As a result of the recent discovery of papaya fruit fly in far north Queensland, Senator Ron Boswell has drawn to peoples attention that five exotic diseases and/or pests have been introduced into Australia in the last two years. These are western flower thrip, spirally whitefly, sweet potato whitefly, chalk brood of bees, black sigatoka and papaya fruit fly.

As many readers will know the agricultural community and more importantly the horticultural segment including the AAGF, QFVG and NSW Farmers Association have fort vigorously to have the Commonwealth change its thinking on quarantine from "acceptable risk" (whatever that means) to "no risk". That is NO RISK AT ALL UNDER ANY CIRCUMSTANCES.

This fight, though not all that successful so far, has had one victory. Food coming into Australia is now liable for inspection. See "Tilting the Playing Field Our Way" Talking Avocados November 1993 page 10.

This newly introduced fruit fly is an absolute disaster. Surely now is the time for all of us to get behind the AAGF by writing or faxing to our Federal Members, Ministers for Primary Industries and the rural media and demanding adequate quarantine protection.

Warren Meredith
Woolgoolga, NSW

Comment: *Japan has already suspended imports of Australian mangos as a result of the outbreak of papaya fruit fly. Ed.*

Australian Round-up

Acceptance of Hard Hass Avocados as Non-hosts for Medfly

Following discussions at the IPHRWG Meeting in July in Bundaberg, the WA Dept. of Agriculture has reviewed the proposal and accepts that hard Hass avocados are non-hosts for Medfly.

Experiments conducted by the Department, based on the New Zealand protocol, showed that Hass avocados, even when artificially punctured, are not a host for Medfly for three days following harvest.

Therefore, the WA Department of Agriculture requested that other States accept **Hass avocados certified as harvested in hard condition and packed and stored below 10°C within 2 days of harvest,** to be non-host for Medfly.

Certification will initially be provided by the WA Quarantine Inspection Service pending the development of an ICA system enabling grower declaration. Acceptance of this certification has been received from agricultural inspection bodies in all States, with Tasmania's acceptance currently being completed. This now allows for shipping of WA certified Hass fruit.

1995 Perth Royal Show

The Perth Royal Show again proved an outstanding success with record crowds of some 450,000 people. Dedicated growers distributed samples of avocado dip with corn chips, avocado smoothies and sold half avocados with a variety of toppings.

Ron Hansen did an commendable job of co-ordinating the event and sincere thanks are extended to all growers who volunteered to get involved.

Each year, show goers are showing greater acceptance of avocados and this year proved to have an excellent conversion to those who had never tried avocados before. Overall a 15% increase in fruit consumed over last year indicated the message is definitely getting through.

1995/96 Promotion Activities

Following the appointment of Fresh Finesse to assist with local marketing of avocados, Western Australia has started this seasons promotions. An integrated strategy of in-store demonstrations, comprehensive media exposure and specific activities aimed at infants and children ran during September and October and are continuing in November.

In-store demonstrations funded by the AAGF have been significantly extended by gaining additional funding from Smith Snack Foods and by avocado wholesale agents, almost doubling the number of demonstrations being conducted. Demonstrations have been timed to coincide with the WA season and will conclude in mid November.

Excellent media exposure has been achieved with substantial coverage from print and radio. Radio interviews have been complimented with Avocado Party Pack give-aways. News features have been extended with weekly recipes and usage tips. A full four page avocado recipe liftout will go to press early in November.

Presentations and workshops with School Canteen managers and Infant Health groups are being held. These sessions are extending the message that avocados are ideal for children and infants and assisting with basic facts on handling, storage and use.

Adelaide Show

This year our stand at the Adelaide Show was located in a prominent position in the Centennial Hall. As a result, an estimated 70,000 people visited the stand to learn more about avocados and sample our wares.

Some 430 trays of avocados were used, half given away in the form of six different dips (we tried four new ones which were all well received) and cut pieces.

The other half was sold as halves with or without dips in the centre. We called them "Boats" with sails of Cc's corn chips. Only Hass were used for Boats with some Fuerte being used as the raw material for dips. Sales exceeded our costs which were $15,000.

As the Adelaide market is 75% supplied from Queensland and NSW growers, we would ask growers in these States to note these facts:

- The first 80 cartons opened averaged 50% unusable fruit due mainly to anthracnose.
- About 5 fruit in each tray were flattened by the weight of the tray above. Trays were 90 mm deep, two piece cardboard.

This is the third time in the last five years that quality problems of this magnitude have happened. Its not unusual—its the "norm".

Avocado growers have had the opportunity to see the results of QDPI retail market samples in previous issues of this magazine where one third of fruit were rejects.

Do you do everything to minimise anthracnose and cold injury on your property? The facts indicate that many growers are not. Do you ensure that your transporter and wholesaler handle your fruit correctly? Nobody else can do it.

Consider this, of the 80 cartons mentioned above where 50% of the fruit was unsaleable, 880 customers could have been affected if the fruit had been presented for sale at retail level (80 x 22 x 50%). That is a lot of dissatisfied consumers!

Next year you are invited to the Adelaide Show to see avocados in action. Lend a hand at the stall and see for yourself the state of the fruit!

The NSW Avocado Association is concern at the reduction in NSW Agriculture services, in particular, the possible closure of the Mullumbimby office and the departure of Horticulturist, Ian Atkinson, without the provision of a suitable replacement.

Also of concern is the future use of Endosulphan and the roll the NSW Farmers Association will play on avocado industry matters.

On a brighter note, NSW avocado growers thank Ian Atkinson for his valuable contribution to the industry from a Regional, State and National level and we wish him well in his new job.

The development of a Strategic Plan for the NSW Avocado Association with current and future input by those concerned should enable the "Vision" to be achieved.

Crop forecasts for the '95 season remain unchanged. Dry conditions are persisting with only marginal relief in some areas.

Members of the NSW Association will find more detailed information on the foregoing subjects in their copy of "AVONEWS".

Join The NSW Avocado Association

All growers who market avocados pay a levy that is used for research and market development.

The AAGF is the grower body responsible for determining the priorities for research and market development and the NSW Avocado Association has four representatives on that Board. If you want

Australian Round-up

to have an input into how your levies are spent, join the NSW Avocado Association.

Association Field Venue Meetings

Improved efficiency of orchard technique, improved fruit quality at the farm gate and higher productivity are major management objectives for every grower. With this in mind, the Association will concentrate its regional activities in the future at field venues and all avocado growers are encouraged to participate.

Each field venue will be an individual orchard at which core themes will be developed by grower participation and information exchange. The next field venue meeting is detailed in the Calendar Of Events on page 3.

North Queensland News

The Tablelands has had an eventful year to date. A well attended field day was held at the Kocki farm with Tim Smith as guest speaker delivering a very informative talk on boron nutrition. Irene Kernot had several computers available for growers to update on AVOMAN. AVOMAN software was available for growers wishing to use their home computers.

In early August A.T.A.G.A. held a field day in conjunction with the Choices Program run by the DPI. The venue chosen was the "Homestead", an Avocado plantation with its own packing shed plus a restaurant surrounded by beautiful gardens. The Choices team headed the program presenting the economics of avocado growing, marketing outlook and industry overview. We were fortunate to have as guest speaker Dr Tony Whiley and Prof. Nigel Wolstenholme who shared their collective wealth of knowledge with growers. Dr Manes Wysoki described avocado growing in Israel. The day was well attended by growers and potential growers and concluded with a delicious dinner at the "Homestead".

Shepard Australia is very pleased to be included in the food quality project "Nearer the grower - closer to the customer". The object is to co-ordinate with and improve the quality of avocados from farm through transport to the wholesaler and retailer, all of whom are participating in the project.

And now we have "Lui"! Not the bar fly but the papaya fly.

Sunshine Coast

Sunshine Coast avocado growers may well recall 1995 as the year of marketing reform. Every grower forum seemed to focus on the changes occurring in marketing both nationally and internationally. In the final analysis was the realisation that excellence in fruit production must be matched by similar excellence in marketing and many of the long established practices were no longer relevant in today's consumer environment.

The formation of a South East Queensland Marketing Group aimed at grower/packers is taking place as we go to press and 1996 will see the dust settle on the innovations and methodology put in place by its foundation members. We wish all participants every success in this new venture.

There is no denying that the bottom line in any industry is profitability. Having seriously considered our marketing options it is again time to review our orchard practices and to put into place quality initiatives that will enhance the bottom line through efficiency in production.

Business management experts will tell you that applied profit margins are second only to Unit Production Costs (UPC) as the most important consideration in business profitability. As it is, the UPC that can make or break a small business by its direct impact on competitiveness in the market place. This is particularly true of the primary produce industry where market pressures alone drive selling price and there is little or no scope to apply profit margins.

With this in mind, the Sunshine Coast Avocado Association will place increased emphasis on the Regional Production Group (RPG) strategy developed within the "AVOMAN" technology.

Members of the Association have been invited to register their interest in participating in such a group from February 1996. As many groups as is warranted will be formed to address every aspect of orchard management. Topics such as integrated pest management , integrated growth controls (light, nutrients and water), top working and pruning, water catchment and irrigation management and *Phytophthora cinnamomi* (root rot) control will be included.

It is intended that each group will be supported by experts from industry and appropriate statutory agencies. The emphasis will be placed on team participation, consultation and investigation from which "best practice" may be determined and adopted. Groups will be invited to provide progress feedback to other growers.

Growers in the Sunshine Coast or hinterland areas wishing to participate should contact the Secretary SCAGA, P.O. Box 822 Nambour QLD 4560 or by telephone on (074) 467069.

Participation in these groups will be free to SCAGA members and the cost of membership to non-members.

AAGF Annual Report

This article is an extract from the Annual Report presented to the AAGF Annual General Meeting last September by the President, John Bolton. The report covers the activities of the Australian Avocado Growers Federation Inc. for the year ending 30 June 1995.

Overview

The year proved to be a very busy one with activities ranging across Federal Government induced business to the progression of the industry's total quality management philosophy. Throughout the year the AAGF continued with the support of the State Associations, AHC and the HRDC. In addition, the AAGF had support from the Commonwealth Department of Primary Industries and Energy Agribusiness Branch and the Australian United Fresh Fruit and Vegetable Association (AUF). The year's activities culminated with a most successful conference.

Membership

Membership of the AAGF was the same as for previous years consisting of the:

- Avocado Growers' Association of West Australia.
- South Australian Avocado Growers' Association.
- Sunraysia Avocado Growers' Association Inc.
- New South Wales Avocado Association Inc.
- Queensland Fruit and Vegetable Growers.

Board of Directors

The Board of Directors representing the membership from across the disparate growing regions of mainland Australia met formally during September and March.

Resignations

It was with reluctance that the Board accepted the resignations of:

Mr Allan Campbell - NSW
Mr Phil Franzone - WA
Mr Warren Meredith - NSW

Finance

The AAGF operated six separate accounts throughout the year under review. All six accounts have been audited.

Co-operative Relationships

Throughout the past year the AAGF has continued to develop the working relationships with the AHC, HRDC, the R, D & E community and marketing fraternity. In addition the AAGF has established a mutual working arrangement with the AUF.

AHC

The AAGF met specifically with the AHC Board on two occasions during the year. The AAGF, at the request of the AHC, met the new members of the AHC Board and discussed what the AAGF expected of the AAGF/AHC relationship. A major concern of the AAGF has been and continues to be, the allocation of the levy funds administered by the AHC on behalf of the Avocado Industry.

Throughout the past year there has been a co-operative and participatory working arrangement between individuals in both organisations concerning the allocation of the levy funds. However, this has been with the knowledge that the AHC believe they can spend avocado levy funds without reference to the industry.

Federal levies and charges are raised by the Federal Government under the Commonwealth's Taxation powers pursuant to Sections 51 and 55 of the Constitution. All such funds so collected are paid into Consolidated Revenue where they immediately loose there identity. Funds are extracted from Consolidated Revenue by an Appropriation Bill passed by the Parliament. Accordingly, the AHC is perceived to be administering Commonwealth funds and not Australian Avocado Industry funds.

The AAGF's argument for the peak industry body having a level of control over the expenditure of grower levy funds rests on the the duty of care the AAGF has towards the industry which is based on two important and indisputable facts:

1. Australian avocado growers through the separate State bodies elect the Board of the AAGF to administer and progress the interests of the industry; the AHC is not representative of the Australian Avocado Industry.
2. It is the AAGF Board which:
   a. determines the level at which the avocado federal levies and charges should be set; and
   b. requests the Minister for Primary Industries and Energy to approve those same levies and charges.

A second meeting with the AHC was held in April 1995 specifically to discuss the mutual working relationship. The final outcome of that meeting is yet to be made known. However, the direction of the relationship is moving towards a participatory alliance based on "Partnership Principles" rather than a directional association. The Board is to determine the form of alliance the Industry is to take with the AHC.

HRDC

The association with the HRDC has always been a participatory relationship base on strong communication links. Indeed over the last year the relationship has been a joint supportive and mutually educative one. The major impediment to the association has been the long drawn out Industry Commission (IC) Inquiry into Research and Development Corporations. The IC recommendations concerning R & D levies has deflected the attention of both the AAGF and the HRDC from the prosecution of research, development and extension for the advancement of the Avocado Industry.

R, D & E Community

The close association with members of the research and extension community continued throughout the past year, culminating in a most successful technology transfer Conference '95 in Fremantle.

AUF

The AAGF has established a working relationship with the Australian United Fresh Fruit and Vegetable Association. Initially the arrangement will be one of a contractual nature to develop the Avocado Product Description language.

Marketing Community

The AAGF continues to be associated with the industry market sector on the three fronts of:

1. marketing, through the auspices of the AHC run Marketing Forum;
2. quality, through the project titled "Improving Quality During Marketing"; and
3. R, D & E, with that sectors participation in the July 1995 R, D & E Workshop.

Strategic Plan

The board of the AAGF concluded a major review of the Strategic Plan first established in 1991. The original document was found to be beyond the reach of

industry in many areas and together with the impact of government a rethink was essential. The current plan is more user friendly, less complicated and provides for an easier annual reappraisal. Additionally, the R, D & E Plan which up to now has stood independently is to be fully reviewed early in FY 95/96 and incorporated into the Strategic Plan.

The Strategic Plan now consist of five separate but interrelated parts:

- Mission
- Goals
- Objectives
- R, D & E Plan
- Vision

The four parts of the Strategic Plan completed to date have been made available to industry through Talking Avocados.

More detailed information on the Strategic Plan Objectives were advised to industry at Conference '95 held in Fremantle in May 1995 and published in the Proceedings titled "The Way Ahead".

An updating of the Objectives and the Vision together with the incorporation of the R, D & E Plan was proposed for the September 1995 meeting of the Board.

Research Development And Extension

Project Reports FY 94/95

Detailed presentations on projects undertaken under the auspices of the HRDC were given at Conference '95 and are presented in The Way Ahead

Progress reports on the projects in being have continued to be advised to industry through Talking Avocados.

R, D & E Levy

As advised in the 1994/95 Annual Report the Board addressed the requirement to increase the R, D & E levy and recommended to the Federal Minister for Primary Industries and Energy that the levy be increased to $10.00 per tonne equivalent to six cents per standard tray. The new levy took effect on and from 1 April 1995 and an increase in project effort will commenced as of July 1996.

Industry Commission Inquiry

In support of the Australian Avocado Industry the AAGF made a detailed submission to the Federal Industry Commission Inquiry into R, D & E within Australia. The Board will appear before the Interdepartmental Committee reviewing the final Report of the Industry Commission.

While the AAGF could see its way clear to support some of the IC proposals published in the DRAFT Report released early in 1995, the Board along with others did not support the Commission's original proposition that the Commonwealth, through the HRDC, only provide ONE dollar for every FOUR contributed by industry.

The FINAL Report, released on 15 May 1995, with respect to the Commonwealth's contribution to R, D & E states:

> "The Commission recommends that the present levy matching scheme through the RDCs, involving dollar for dollar contributions by the Commonwealth up to 0.5 per cent of GVP, be amended as follows:
>
> - The Commonwealth to continue to provide one dollar for every industry dollar spent on R&D up to 0.25 per cent of CVP; and
> - thereafter to contribute at the rate of one dollar for every two dollars from industry, with no ceiling.
>
> That component which involves a reduction in the ratio of government support should be phased in over five years."

The Board will continue to oppose any part of a recommendation that proposes any change to the dollar for dollar ratio. The Board, together with representatives from other agricultural commodities, met with Federal Departmental officials on 4 July 1995 in Brisbane to put the case for maintaining the current ratio.

R, D & E Projects FY 1995/96

The HRDC, acting on the advice of the AAGF in March 1995, has approved the following projects for the next financial year:

- Disinfestation of avocados against Mediterranean fruit fly (continuation of project commenced FY94/95).
- Sampling procedures for avocado dry matter maturity testing (new project of 12 months duration).
- Production, formulation and application of biological control agents for avocado anthracnose (new project building on the successful outcomes of the project to isolate antagonists).
- Avocado World Congress III in Israel. (new technology transfer project).
- AVOMAN Stage 2 (continuation on from Stage 1).
- Distribution to all commercial avocado growers on the Talking Avocados mailing list of the HRDC (tree crop) Research Report (new extension project).

Funds have been reserved awaiting the submission of a revised fruitspotting bug project. A multi-commodity project is being developed building on the results of work that has been undertaken in North and South Queensland and in the Northern Rivers of New South Wales for the avocado, macadamia nut and pawpaw industries during FY 1994/95. The new proposal, of two years duration, is to be an integrated pest management project with the goals of:

1. Understanding the biology and the environment of the pests (*Amblypelta* spp.) so as to improve farm cultural practices; better target monitoring techniques and assist in reducing the need for the regular application of pesticides.
2. Developing a grower friendly fruit spotting bug monitoring system with a view to minimising the number of applications of pesticides.
3. Examining potential alternatives pesticides to the currently approved agrochemicals with a view to registration.

Two other avocado projects, funded by voluntary contributions from regions, are also to be undertaken in FY95/96:

1. Salt tolerant avocado rootstocks for Riverland conditions. This project is a continuation undertaking which was requested and is supported by the South Australian Avocado Growers' Association.
2. Boron nutrition of avocados in the Moreton Region of South East Queensland. This project was requested and is supported by the Sunshine Coast Avocado Growers Association.

☛ 10

The term R, D & E has started to replace the better known expression R & D. Governments are now insisting that "Extension" be part of research and development. Without this inclusion, government support may not be forthcoming.

Extension can be defined as the distribution of, and assistance with implementing, research results.

9 ☛

R, D & E Workshop

A workshop was held in July 1995 to which members of the Australian Avocado Industry representing the nursery; growing, marketing; processing; administration; and research, development & extension sectors were invited.

Aim

The aim was to devise a Research, Development and Extension (R, D & E) Plan for implementation by the AAGF with a view to advancing the Australian Avocado Industry Strategic Plan.

Objectives

- Develop a R, D & E program.
- Recommend a system for selecting projects to be undertaken within the limits of the funds available.
- Prepare a management proposal to progress the R, D & E Plan.

Conference '95

The AAGF conducted a most successful Conference at Fremantle West Australia under the theme of THE WAY AHEAD. The Conference included formal sessions, hands on activities, field demonstrations and a post conference tour to the South West avocado growing region of WA.

Objectives

The Objectives of the Conference were to:

- Update industry on specific R & D projects undertaken through the auspices of the HRDC.
- Impart to industry specific avocado research work being conducted outside the ambit of the AAGF.
- Instruct industry in avocado quality management developments and techniques undertaken by the AAGF.
- Broaden grower knowledge of current horticultural field management techniques and practices.
- Interchange ideas pertinent to the avocado industry to assist growers in selecting the best practices appropriate to their particular situation.
- Develop a two way dialogue between growers and the R & D community with a view to achieving a more productive focus of R & D funding.

All objectives were achieved and the Conference was an unqualified success. Copies of the Proceedings are available for purchase from the Executive Officer.

Total Quality Management

As has been stated in another forum the AAGF has adopted the philosophy of total quality management for the Australian Avocado Industry. In the year under review the AAGF in concert with other agencies examined the projects forming part of the philosophy.

ANVAS

Four nurseries currently have ANVAS accreditation. The Varieties Committee has completed an updating to take into account the latest technological advances and streamline the ANVAS procedures. New variety developments were advised at Conference '95 and the paper is included in the Conference '95 Proceedings The Way Ahead.

AVOMAN

The AVOMAN project has evolved from addressing only total management into a technology transfer/total management/quality project. More recently discussions have been held with the Project Leader to examine the feasibility of including an avocado harvesting calendar for each variety by region into the AVOGRO section as a means of providing growers with a better appreciation of when to pick and so eliminate the current problem of under and over mature fruit in the market place.

Preliminary discussions have also been held aimed at developing a quality assurance audit trail within AVOREC so that those growers who participate in group marketing enterprises are able to assure their colleagues that they have done what they have said they're done.

Wholesaler Retailer Quality Project

The Wholesaler Retailer Quality Project continues on target. As a result of the findings from the year one surveys of retailers the project has been amended with the approval of the Federal Agribusiness Program Branch. The results to date have been reported in both the Conference '95 Proceedings and Talking Avocados.

A Quality Product

The two issues which continue to plague the market place, which are both a function of grower management, are immature fruit and fruit rots in the form of stem end rot and anthracnose. Despite a campaign to educate the growing community through Talking Avocados the early results from the 1995 season indicates that there is a significant proportion of people who are prepared to blight the industry by placing unacceptable fruit into the market. It is now time for the responsible growers to apply peer pressure on the recalcitrants.

Others Issues

Product Description

The AAGF at its March 1995 meeting agreed to engage the services of the AUF to develop a national avocado product description language for the Australian Avocado Industry to facilitate the marketing of the fresh product both domestically and internationally. The project commenced ahead of schedule and the first draft was made available in early May. The project is continuing with a target completion date of late 1995; thereafter the language will continue to be updated to reflect changing situations. Avocados is but one of 85 horticultural fresh products involved in the much broader AUF project.

The objectives of the broader project are to:

1. Develop a system of industry product descriptions that is universally accepted and self-regulated nationally.
2. Facilitate better communication and marketing through truthful and accurate descriptions of fresh produce domestically and internationally.
3. Increase confidence in those sales where product is not sighted and enable various methods of electronic marketing to be used effectively.
4. Encourage the horticultural industry to adopt an attitude of quality management using a national product description system that is based on ISO quality parameters.
5. Provide leadership to the horticultural industry.

The project will involve consultation with regional avocado grower focus groups and other sectors of the industry.

Price Look Up Numbers (PLU)

The development of a national PLU system is being co-ordinated for the avocado industry by the AHC. To date the Board has received no feedback from AHC. At this point in time it would appear that the draft document would disadvantage growers as it groups fruit sizes into the three categories of large, medium and small. Additionally, there will be an initial capital outlay to growers "tooling" up to label the fruit.

The Board will be communicating with the AHC at the September 1995 meeting regarding this matter.

Agricultural Chemicals

The Board has developed a submission to the National Registration Authority (NRA), for delivery by the end of July 1995, on the need to retain Endosulfan for

use within the industry. The NRA has commenced the process of reviewing all agrochemicals currently used by agriculture.

The Board is also keeping a watching brief on domestic and overseas developments to determine the potential impact on the industry. Of concern is the lack of information being disseminated by the authorities to counteract some of the more emotional statements which appear in the print and electronic media from time to time. To this end it behoves all growers to bring to the attention of Board members any media release which may adversely impugn the responsible reputation of horticulturists.

Recognition

Congratulations were extended to Anthony (Tony) Whiley on gaining his Doctor of Philosophy. Doctor Whiley's area of study and research involved avocado and was supported by his thesis titled "Ecophysiological Studies and Tree Manipulation for Maximisation of Yield Potential in Avocado (*Persea americana* Mill.)".

Award of Merit

The AAGF Award of Merit for outstanding service to the Australian Avocado Industry was awarded at the end of Conference '95 to:

- Mr Scott Ledger for service in the field of post harvest research and helping to bridge the gap between the grower and wholesaler sectors.
- Mr David (Dave) Duncan for service in establishing, nurturing and promoting the avocado industry in West Australia.

Industry Federal Reviews

During the last two years there has been a number of Federal Government instigated reviews which have had considerable impact on the work load of the AAGF. These reviews include:

- Horticultural Task Force Report titled "Strategies For Growth In Australian Horticulture" released February 1994.
- Commonwealth Government Response to the Recommendations of the Horticultural Task Force Report titled "Horticulture 2000" released February 1995.
- Industry Commission Report No 44 titled "Research and Development" released 15 May 1995.

All of the above reviews have resulted in changes of direction and emphasis for the AHC and HRDC. In the case of the AHC there has also been the need to restructure.

Conclusion

The year ending 30 June 1995 has been an extremely exacting period for the AAGF. An excessive amount of time has been spent in being reactive, addressing Federal Government imposed activities, rather than taking a proactive position progressing the advancement of the Australian Avocado Industry.

On the positive side the AAGF is now in a better position than ever before to pursue the task of fulfilling the Mission as set out in the Strategic Plan.

New Desk Hours

Starting from 1 January 1996, Astrid Kennedy will be at the AAGF desk for two full days each week - Tuesdays and Thursdays.

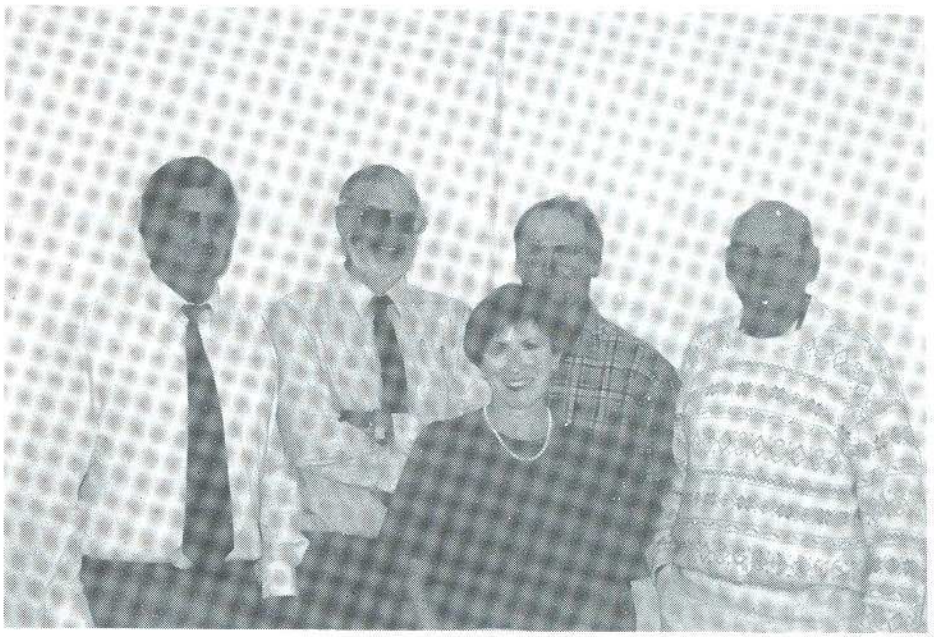
Phone	**(07) 3213 2444**
Direct	**(07) 3213 2477**
Fax	**(07) 3213 2438**
Fax A/H	**(07) 3273 8144**

AAGF Adopts A Proactive Approach To R, D & E

The newly formed Research, Development and Extension subcommittee has adopted a proactive approach to the industries research and development requirements. Each year, to meet the industry's specific concerns as nominated in the AAGF's R, D & E Plan, the subcommittee will prepare a list of potential projects; develop project briefs; and then distribute those briefs to the R & D community for their expression of interest.

At its inaugural meeting on 19 October 1995 the subcommittee compiled a number of project briefs for immediate attention. Expressions of interest are now sought from the R & D community and will be considered by the R, D & E subcommittee to ensure that proposed projects have the potential to address specific industry concerns and produce the required outcome.

AAGF director and subcommittee Chair, Mr George Green said that by adopting this approach the subcommittee can help drive the process and be more confident that project submissions presented for funding consideration will be appropriate and have the potential to achieve industry requirements.



AAGF Research, Development and Extension Subcommittee.
Left to right: John Dorrian, George Green (Chairman), Graeme Thomas and Alan Hartley.
Front: Bonnie Walker.

AAGF Research, Development and Extension Plan 1996 - 2000

The Avocado Industry's Research, Development and Extension Plan for the period 1996 - 2000 is the result of a thorough and comprehensive planning process that was undertaken by the AAGF and the HRDC.

The plan was formulated by representatives from all sectors of the industry at an intensive two-day workshop in July 1995.

The aim of the workshop was to devise an R, D & E Plan for implementation by the Australian Avocado Growers Federation with a view to advancing the Australian Avocado Industry Strategic Plan.

The objectives were to develop an R, D & E program, recommend a system for selecting projects to be undertaken within the limits of the funds available and to prepare a management proposal to progress the R, D & E program.

To achieve the aim and objectives the workshop compiled a list of opportunities and problem areas within the industry. The AAGF Vision Statement was then condensed to ten major objectives (as shown below) and the opportunities or problem areas previously identified were grouped into potential programs to be addressed by R, D & E to achieve the objectives.

The twenty one members who attended the workshop.

It was recognised that all the areas identified were of importance to the industry and therefore should not be prioritised. However some areas presented a greater problem to the industry than others and therefore were categorised in order of importance as opposed to prioritised in order of funding allocation. Areas listed as category one were considered to be most important.

The workshop recommended that the AAGF establish a Committee responsible for making recommendations to the AAGF Board of Directors on progressing the plan and for reviewing current R, D & E projects and issues.

AAGF Vision - Major Objectives	R, D & E Program	Category
Improved efficiency of orchard management	Improved genetic capability	1
	Integrated crop management	1
	Phytophthora/root rot	1
	Anthracnose	1
	Canopy management	1
	Integrated pest management	2
	Management systems	3
	Harvesting	3
Extension/Technology transfer	Technology transfer	1
Improved quality of ripe fruit	Improved quality	1
	Fruit maturity	2
	Product handling and education	3
	Storage life	3
Well organised AAGF	Industry data & intelligence	1
	Industry structure	3
	Research funding	3
Public health/Environmental protection	Exotic disease	1
	Public health and environmental protection	2
Marketing plan	Consumer research and education	2
Organised marketing	Organised marketing	2
Export of 10% of production	Disinfestation/Export	2
Value Adding	Processing (no input from workshop)	3

Additionally it has been recognised that the lack of an Export Development Plan constrained the workshop in fully addressing Vision R, D & E objective "Export of 10% of production". This specific area will have to be addressed by the export workshops planned for financial year 1995/96.

It was considered that the R, D & E Plan - 2000 will play a major role in meeting the AAGF Vision Statement and it was hoped that it will provide the R & D community with an understanding of the industry's long term direction and will result in proposals that are likely to increase the rate of progress in all sectors.

AAGF Research, Development & Extension Plan

CATEGORY ONE

Objectives	Program	Area of Concern
Improved efficiency of orchard management	Improved genetic capability:	Varietal evaluation - better varieties have the potential to increase production by 10%.
	• Varieties	Reduce the number of varieties on the market - too many varieties causing customer confusion.
	• Breeding & selection	Development of other good acceptable varieties - currently there is too much emphasis on one single variety and it could be disastrous if a pest or disease appears that favours this variety.
	• Rootstock - cloning - productivity - selection	Evaluation of rootstock growing in severe *Phytophthora cinnamomi* areas for tolerance to *Phytophthora cinnamomi.* Rootstock improvement could double production. Rootstock variability and yield - reliance on seedlings with wide genetic variability creates management difficulties e.g. nutrition, or water.
	• Shelf life	Improve the genetic capability - rootstock and scion to maximise the yield per hectare of quality fruit and increase RIPE shelf life.
Improved efficiency of orchard management	Integrated Crop Management:	Low national productivity.
	• Nutrition	Determine tree nutrient status mid-season in time to make corrections during growing season - major elements NPK - cost in yield 25%, cost in downgrade 20%, applicable to 20% of crop. Work on Boron deficiency - not yet fully understood.
	• Water	Tree/water relations to maximise production/yield/quality/fruit size. More effective use of irrigation - improved irrigation practices have potential to increase production by 50%: • How much water is enough/too much? • What is the effect on yield/size?
	• Nutrition, soil, and water	Develop an integrated nutrition/soil/water management system supported by biannual leaf analysis - could increase production by 80%.
	• Size	To produce fruit within a more condensed range of sizes according to market preferences for certain sizes of fruit and the easier development of processing/processed product. Small fruit size in Hass.
Extension/technology transfer	Technology transfer:	Technology transfer is essential for Industry survival.
	• Quality management	Good orchard practices are wasted if the timing is poor. Improved timing of management practices would have a significant effect on yield and quality.
	• AVOMAN	Post harvest technology transfer can increase quality fruit in the market place.
	• Management not technology	Good technology is available but adoption levels leave a lot to be desired: • The message is not getting through. • Ignorance? or • Some growers are fiercely independent and want to do it their way. There is a great opportunity to raise production and quality substantially without planting a single new tree.
	• Pollinators	There is little knowledge on cross pollinators and therefore cropping potential is unknown.

☛ 14

CATEGORY ONE (continued)

Objectives	Program	Area of Concern
Improved quality of ripe fruit	Improved quality:	Good fruit quality to consumer - improving the quality could increase current sales by 50%.
	• Ripeness test	Method of determining eating "readiness" of avocado by consumer by non-destructive means: • Affects shelf quality in retail stores. • Would benefit the food service/fresh cut industry.
	• Quality assurance	We want our avocados to be of good internal quality every time a consumer cuts it open: • Consumer confidence in products enhance value perception. • Current lost retail profit 20%. • Current wastage 25% (consumer throws away).
Improved efficiency of orchard management	Phytophthora root rot:	Application technology for phosphorous acid: • Injecting expensive. • Injection timing. • Long term tree damage.
	• Monitoring	Assessing *Phytophthora cinnamomi* resistance status of trees: • Assess level of phosphonate in tree. • Develop phosphonate testing techniques either in laboratory or preferably by field kit.
	• Management	Long term management of phosphonate: • Critical root concentration for fungicidal application for different root stocks. • Application techniques. • Quick test. Potential benefits - minimum labour input, cost efficient management and increase yield and fruit size. Alternative applications of phosphorous acid, for example, soil and/or foliar spray. Potential for biological control.
Well organised AAGF	Industry data intelligence:	Industry restructuring: • Urbanisation. • Water constraints. • What varieties should be planted where? • What should be discouraged. • Investigate systematic crop forecasting and forecast production/areas 5,10 & 15 years ahead - regional information to be consolidated nationally.
	• Economic analysis	Lack of costing throughout industry - from land purchase to market return.
	• Forecasting	No national crop assessment: • Irregular supplies to market. • No data for extent of promotion - adjust promotion program to suit crop size. • Regulate flow of fruit.
	• Statistics	Improved industry data and intelligence.
	• Hurt analysis	Industry wide economic hurt analysis - data would provide decision making tool to: • Selecting specific R, D & E projects. • Vetting R, D & E proposals submitted for AAGF/HRDC funding. • Allocate funds to achieve greatest financial benefit to growers.
Improved efficiency of orchard management	Anthracnose:	Anthracnose and stem end rot: • Not seen till reaches market place. • Bad consumer reaction.
	• Predictor	Avocado anthracnose predictor coupled with an education program: • Rescheduling of fungicide applications. • There remains a major problem in the market place therefore there is a problem on the farm.

CATEGORY ONE (continued)

Objectives	Program	Area of Concern
Improved efficiency of orchard management	Canopy management: • Comparative analysis	Tree size management and canopy management: • Large trees expensive to manage and poor spray coverage. Regional canopy management to maximise yields.
Public health and environmental protection	Exotic disease: • Future planning	Evaluation of economic impact of introduction of exotic pests and diseases: • Combat lifting of quarantine barriers. • Reduce potential additional farm inputs. • Maintain viable Australian industry. Benefits - long term production and data needed to assist AAGF as case arises.

AAGF Research, Development & Extension Plan

CATEGORY TWO

Objectives	Program	Area of Concern
Improved efficiency of orchard management	Integrated Pest Management: • Fruit Spotting Bug	Regional integrated pest management: • Fruit spotting bug. • Light brown apple moth. • Ivy leaf roller. • Monolepta. • Loopers. • Thrips (WA). • Tea red spider mite. • Fruit flies. • Latania scale. More opposition these days to pesticides - need more R, D & E into IPM. If industry shows that it is serious about IPM, sales will improve - important factor to consumer now and into the future. • If endosulfan withdrawn 75% of Qld and NSW fruit unmarketable by the 2nd year. Improved pest and disease control methods. Fruit spotting bug: • No effective monitoring system. • Need regular spray program. • Possible loss of chemical. • Estimated 5% damage in Qld and NSW.
Marketing plan	Consumer research and education: • Research • Education	Avocado is the worlds most nutritious fruit - everyone is health conscious. Consumer market research - purchase and use of avocado - How, When, Where and Why? 80% of population do NOT eat avocado: • Don't know why only 20% avocado consumers. • Limits demand. • Offers chance to expand market.
Organised marketing	Organised marketing	Lack of orderly harvesting & marketing: • Growers not willing to help industry before their pockets. Opportunities to increase demand (export, domestic, processing) are limited by fragmented industry structure: • The "want to" increase demand is present but the how (capability) is not. Lack of organised grower groups for marketing.

☛ 16

CATEGORY TWO (continued)

Objectives	Program	Area of Concern
Public health and environmental protection	Public Health and environmental protection	Customer demand for safe food increasing: • Customer will demand that avocados are safe to eat and will want proof. • Opportunities will exist for those who can satisfy this demand. Customers and communities will increasingly demand that avocados are produced in an environmentally safe way: • May require changes in the way avocados are grown. Agri-chemical environmental issues - residues: • Domestic/export/import. • Has the potential to affect industry returns and development of new markets.
Improved quality of ripe fruit	Fruit maturity: • Maturity testing • Ripeness testing	Immature fruit are being placed on the market to catch good prices - but are giving avocados a poor image to first time consumers: • Prevention will improve acceptance by new consumers. Non-destructive fruit maturity testing: • Guarantee a quality product to market. • Increase profit to whole industry. (Despite world wide research such an idea is beyond resolution - suggest move to bar chart/calendar by variety by region.)
Export of 10% of production	Disinfestation: • Export • Transportation packaging	Export market potential. Quality out turn - disinfestation: • Provide opportunity to export to selected countries. No access to Japan plus distance to other key markets: • Disinfestation. • Other markets - access. • Transportation technology. • Packaging innovations plus spin-off to other industries.

AAGF Research, Development & Extension Plan

CATEGORY THREE

Objectives	Program	Area of Concern
Improved quality of ripe fruit	Product handling and education	Product handling and education: • Post farm gate handling/transportation/storage practices not understood. • Transporters, wholesalers, ripeners, retainers are apathetic.
Well organised AAGF	Industry structure	Lack of truly centralised AAGF with day-to-day management functions: • Need for a full-time Director, secretariat etc. to run the Federation. • Need to appoint a research co-ordinator? • Need to represent and lobby for the industry.
Improved efficiency of orchard management	Management system	Total management/QA/education: • All industry sectors unable to readily source information pertinent to their sector. • All sectors require a QA management system complete with audit trail. • All avocado R & D should be capable of incorporation in total management package. • Expansion of AVOMAN. • Put greater effort into progressing AVOMAN. Inefficient management of production systems (growing, packing, distribution): • Reducing profitability. • Opportunities to increase price are limited. • Need to reduce costs.

RESEARCH, DEVELOPMENT AND EXTENSION PLAN

CATEGORY THREE (continued)

Objectives	Program	Area of Concern
Improved quality of ripe fruit	Storage life	Increase storage life: • Need to identify the orchard parameters which impact upon storage life (desktop study) - resource South African data.
Well organised AAGF	Research funding	Lack of dollars for effective research: • Disincentive from Commonwealth Government to raise more levies.
Improved efficiency of orchard management	Harvesting	Harvesting is probably the most costly exercise (on farm) of growing avocados: • Production costs would be massively cut if a system of mechanical harvesting was devised - this may involve a new system of growing to make mechanical harvesting possible.
Value adding	Processing	No input
Cost effective packaging transport systems	Packaging costs	Significant percentage of return is spent on packaging.

Industry Award Recognises Leading Horticultural Scientists

Leading horticultural scientists, Dr Trevor Wicks (South Australia) and Scott Ledger (Queensland) have been awarded the Horticultural Research and Development Corporation, Graham Gregory Medals for excellence in horticultural research and horticultural development.

The awards, to be presented at a ceremony later this year, consist of a medal and one thousand dollars and commemorate the achievements of the first Chairman of the HRDC, the late Graham Gregory.

Announcing the awards, HRDC Chairman, David Minnis said the two men had made a substantial contribution to a range of horticultural industries over a long period of time. "These awards are all about recognising excellence in horticultural research and horticultural development.

"The record of the two winners in working to achieve practical solutions to industry problems is a reflection of this excellence, and is to be encouraged," Mr Minnis said.

Scott Ledger, awarded the Development Medal, is Principal Extension Horticulturist, Queensland Department of Primary Industries, Horticulture Postharvest Group.

Mr Ledger has been actively involved in a wide range of extension related activities on behalf of the mango, avocado, tomato and apple industries.

The identification of factors affecting apple prices for Granite Belt growers has led to improved fruit quality and returns to growers through the use of controlled atmosphere storage, improvements in washing, polishing and waxing units and increased planting of red strains of Delicious apples.

Mr Ledger has also been actively involved in the development of technology in the avocado industry including: control of fruit rots through the postharvest application of the fungicide prochloraz; controlled ripening and handling of ripened fruit; commercial simulation of export to Europe by controlled atmosphere seas container; and fruit handling properties including impact and bruise resistance.

Work in the mango industry has included harvesting and desapping methods, impact and pressure resistance, packaging, temperature management, controlled ripening and maturity standards. Mango sapburn was reduced by almost half through the use of two handling systems developed through this work.

Dr Wicks, awarded the Research Medal, is Senior Research Scientist in the Horticulture section of the South Australian Research and Development Institute.

Over the past twenty years Dr Wicks has been instrumental in the development of effective and sustainable systems for disease control across a range of crops including apple and pears, brussel sprouts, celery, lettuce, almonds, apricots, strawberries and citrus.

A major achievement by Dr Wicks was his work by which he restored the viability of the dried apricot and almond industries in South Australia by isolating the diseases *Phytophthora cambivora* and *Monillinia laxa* and developing practical control measure for growers.

Other achievements are the identification of alternative strategies for pre and postharvest control of apples and pears; the development of disease control programs for ring spot on brussel sprouts, septoria on celery and anthracnose and downy mildew on lettuce; and the development of fumigation and fungicide drenches for the control of the new disease *Phytophthora fragaria* in the strawberry industry.

Mr Minnis said the awards had shown Australian horticulture had developed a number of world class researchers and extension specialists that were making a significant contribution to the longer term development of industry.

"In their separate areas of expertise they have both devoted considerable time and effort into improving the overall performance of the horticultural industries.

"Their ability to recognise the needs of industry, recognise the problems and work towards practical solutions has provided substantial benefit to Australian horticulture.

"The Graham Gregory medal recipients are worthy winners, who deserve public recognition for their ongoing commitment to the improvement of Australian Horticulture," Mr Minnis said.

The Future Market

by Alan Glogoski, The fruit Vine, September 1995

Although this article is taken from an address given at the Mango 2000 Conference held in Townsville on 1 August 1995, its relevance to the avocado industry is obvious.

Why Are We Here Today?

Probably two reasons:

1. We feel we are not getting our due from the marketing situation at present.
2. We have a great concern about remaining viable in the face of increasing supply in the future.

Obviously anything I have to say is going to be a personal and very subjective view. When you are looking into the future to the year 2000, you can only be subjective.

I firmly believe that the future viability of our industry lies in our ability and willingness to become a far more homogeneous and consolidated one.

There are various kinds of marketing structures, however before we can decide what is best for us, both individually and as an industry, we have to know and understand just what our market is. You cannot build a mousetrap until you know what a mouse looks like.

Therefore today I want to present to you my view of:

- Where we are now.
- What will our market look like in the year 2000.
- What will that do to our industry structure.

The Present

No prizes for being able to interpret the present. Those of you who were at the QFVG Conference in late March will already know my view of the present situation, therefore I will skim over it very quickly.

Basically, supermarket share is increasing rapidly and stands presently at around 50%.

Independent fruiterers share is declining but still significant. However for every supermarket that opens, 2-3 independents go out of business.

This means fewer buyers going to the central wholesale markets every year. Within those markets the same (or similar) number of agents/wholesalers are now confronted with fewer buyers and are having to compete for business. The trouble is they are competing with our product and primarily at our cost.

As producers we are rapidly increasing production, have no co-ordination in the way we feed that product to the market and as a result, have to spread that product over a large number of agents.

What a buyers dream! No wonder we are suffering. Buyers walk from one agent to another talking the price down until they find the bottom. That is the price we are getting back—the last bid.

Also we are not catering to the consumers requirements. Why is it like that? Because we are, on the whole, just pushing our product out and leaving it to someone else to look after our interest. I have one unshakable belief about human beings—they will look after their own interests first.

The Year 2000

Enough of the present, we all know about it. The title of this conference is Mango 2000, so lets consider what our market in 2000 is probably going to look like.

The Consumer

Our average consumer is going to be slightly older. The number of people over 50, as a proportion of total population, will be higher than it has ever been before—the baby boomers are ageing.

This means more one and two person households. It means more people in the shops buying smaller volumes.

The discretionary spending power of consumers will be higher. Double income families will be even more prevalent than today. This will lead to:

1. Demand for more convenience—the year 2000's housewife is a busy lady.

   Many hold full or part time jobs and those who don't have more social contact than their predecessors. They are also educated to higher levels.

   They are less inclined to accept the "servant to the family" orientation of their mothers. They demand their free time as well.

   This has led to a tremendous increase in demand for convenience foods in all its forms, from fresh cut salads, to fresh prepared main courses and desserts. She will become more of an "assembler" of meals rather than a "preparer" of meals.

   The so called "do it for me" sector is flourishing. This demand for convenience will also extend to shopping hours.

   We are going to have to cater to this "do it for me" trend. In America today there are actually houses and apartments being built without kitchens as we traditionally know them. Instead there is just a fridge, a microwave and a small bench/preparation area.
2. Consumers will also be eating out/ordering in more in the year 2000. The traditional family meal will have become less prevalent as family members choose to eat at differing times and differing dietary preferences.
3. Eating habits will have become even more diversified as the "ethnic" influence spreads further through our communities and daily experiences. We will be demanding more Chinese, Vietnamese, Indian, Japanese, Turkish and God knows how many other ethnic foods in easy to prepare or ready to assemble forms.

The Retailer

So much for the consumer, how about the retailer and the distribution system in the year 2000. Martin Beattie is far better placed to lay this out for you, however from our end of the industry I see it as follows.

Supermarkets will continue to increase their share of the total fresh fruit and vegetable retail sales. The foregoing consumer demands for more prepared lines,

more diversified food styles and more convenience of shopping hours will all be met far more effectively by the modern supermarket.

Small independent retailers will not have the financial nor human resources to carry the huge increases in product lines that will be on the market, particularly in the fresh cut and other semi-prepared areas. They will probably cater mainly to the older traditional customer and the more discerning consumer looking to buy at the top end of the quality spectrum.

Supermarkets will be buying the bulk of their fresh fruit requirements direct from the major packhouses and marketing groups—why?

- It is quite simple—to streamline the distribution system. The more the fruit is handled the more expensive it becomes and the lower its quality.
- Supermarkets will move up the quality spectrum. In simple terms as competition increases and pressure comes on to gross margins, they cannot afford to continue with wastage levels running at up to 7-8% as they can do today. Margins are going to tighten and margins are going to have to be protected. This can best be achieved by handling fresher, higher quality produce, presented and merchandised better by better trained staff—protect the bottom line by minimising waste, and at the same time lift your image and customer satisfaction.

  This will involve us in delivering fruit in a ripe condition ready to eat in 24-48 hours and with 72 hours shelf life. A customer buys fruit to take home and eat—not look at. If they enjoy the experience they will come back and buy again.

  Retailers will be prepared to pay more at the front end for quality fruit provided the consumer sees the value and his costs at the back end are minimised. Waste is expensive, not only in product cost, but also in handling cost, not to mention image and consumer dissatisfaction.
- Supermarkets will drive for efficiency —with the increased competition supermarkets are going to be in the process of, or will already have, maximised efficiency in every area they can. Apart from the quality fruit issue we will have to confront:
  a. PLU's - these allow retailers to stock a wider range of sizes and varieties of the same fruit at the same time, but ensure they catch back the correct price at checkout. They also provide crucial statistical feedback to improve category management within the stores. We will have to put PLU's on fruit—no argument!
  b. Encoded Scannable Shipping Units - all our trays of fruit, and pallets, will be coded with data such as grower identification, product variety, date of production and ship out dates. On top of this we could even be into microchips on the carton or pallet which will be scanned by hand held wands feeding in, or retrieving the above data plus, temperature leaving packhouse, temperature in truck, time and date of receipt at distribution centre, temperature on receipt, etc. etc. This information will be input at every stage of handling so that problems can be backtracked, but more importantly so that produce flow through the system with less labour and paperwork costs and in the minimum possible time.
  c. Distribution will become more "rapid response" by nature involving methods such as cross docking and meaning smaller and more frequent deliveries, aimed at saving expensive warehouse and cool storage facilities.
  d. GEMMnet - The Global Electronic Merchandising and Marketing Network is an electronic catalogue of products and services operating on a 24 hours per day basis.
  Many of you will already have received a GEMMnet brochure and Woolworths have clearly indicated that they will be doing all—or at least the bulk—of their buying via GEMMnet by the year 2000.

  Woolworths believe it will allow considerable time and cost savings for their buyers, enabling them, and the paper trail, to operate far more efficiently. Basically, producers would put their offers into GEMMnet, the buyers would scan the data and then place their orders simply by the press of a button. The order confirmation would be conveyed back to the supplier electronically, distribution would be advised automatically and a hard copy of the transaction would be printed on the buyer's computer—all at the touch of a button.

  This type of buying is going to require the buyer to be confident of what he is buying, therefore quality assured packhouses will be essential.

  GEMMnet is also a global marketplace. The Woollies buyer will be able to scan the offering of suppliers in California, New Zealand, Philippines as easily as Australian. Whilst I believe Aussie supermarkets will give first preference to "buying Australian" they will only do this if the product and service is adequate and meets their needs. They must remain competitive in their own marketplace.

All the foregoing factors will enhance efficiency both in administration and physical distribution.

☛ 20

Another factor of the year 2000 is that retailers will carry a far wider range of fresh produce lines. The bulk of the additional lines will be in the area of minimally prepared—so called fresh cut—fruit and vegetables and even fully prepared convenience packs ready to take home and serve.

According to figures I heard recently total food sales in Australia are worth something like $42 billion per year. Of this figure the supermarkets have some $21 billion or 50%, whilst the "do it for me" industry (McDonalds, Pizza Hut, take-aways, etc.) has $15 billion or some 36%.

What is really important however is that this "do it for me" sector is projected to increase to 50% market share within 10 years. This is where the supermarkets will be fighting the battle for market share in the year 2000 and fresh produce and fresh cut products will be spearheading their challenge.

I should also add that I see exports continuing to increase but not to the extent of being the saviour of the industry—the domestic market must do that.

If that is the scene in year 2000 where will it leave us?

The Fresh Mango Industry 2000

To service both the retail and the "do it for me" industry in the year 2000 and achieve the increase in consumption that we require, our own end of the industry must change.

Indeed our very growth, with estimated production in 2000 of 10 million trays will force that change upon us. We are going to have to create a large increase in the numbers of consumers eating mangoes, as well as selling more to those who already do eat them.

We are going to have to meet all those criteria I put up earlier:

- Long lines of consistent quality fruit.
- Delivered to retailers in ripe condition.
- Full promotional back up.
- PLU's on individual fruit.
- Encoded scannable trays/pallets.
- Streamlined rapid response distribution chains.
- Electronic marketing.
- Compete with more international competition.

To do this we will need to consolidate into larger production and marketing units capable of:

- Embracing new technologies in value adding.
- Running QA schemes to ensure consistency of quality.
- Educating retailers and food service handlers.
- Running promotional programs.
- Employing professional management and marketing people.
- Forecasting crops and sharing that information with their partners in the marketing chains.

Obviously if you don't have volume production you just cannot afford to amortise the costs that the above will involve, neither will you be able to maintain consistency.

What are the options for marketing structures in the year 2000 in the face of all this:

- Compulsory acquisition producer board—"God forgive".
- Single unit grower/packer/marketer—most unlikely but possibly one or two may have the volume.
- Regional partnership/corporate/co-operative packhouses with professional management/marketing, serving a number of grower shareholders—very likely.
- Marketing groups for those who feel they want to keep their own smaller packing sheds, however, they will have to subrogate their individual brands to a common brand, under a common QA—not as attractive a proposition from a marketers point of view as the immediately foregoing option but probably quite attractive to growers—also very likely.

Those who are going to survive and even do well, will subrogate their individualism for the strength of working together to serve the final arbiter—the consumer, via both the retail and food service sectors.

Where does the traditional market agent/wholesaler fit into this scenario?

Some will fill a key role, the bulk of them will be totally unnecessary. We have to take control of our own destiny and not leave it in the hands of someone else further down the chain.

As I would see it a panel of approved ripeners and handlers should be appointed in each market and fruit should be directed to those people. Their role would be to ripen fruit to the point of being ready to deliver to the retailer (or food service user) and then the producer direct that fruit under their own marketing program to their major clients. The agent would perform the above function on a "fee for service" basis. The agent would also handle sales to the smaller independent fruiterer/buyer on a normal fee/commission basis.

I do not believe however that such agents would participate in the actual marketing channel between the producer and the supermarket or major food service buyer. If we are going to achieve excellence in our industry then we as producers must control our distribution channels, promotional programs and quality right to the retail shelf—if we don't want to do this, there will be plenty of offshore competitors who are certainly most capable of doing so. This may be done by some packhouse/marketing groups in association with an agent.

Our industry must change and I am sure that it will. Obviously I look at the future with caution—but not with despondency. If we do our job properly, if we make the most of the opportunities that the growth in the "do it for me" sector will offer, I simply fail to see why we cannot all still be perfectly viable in the year 2000.

If there is one thing we must all do it is to step outside our personal paradigms and ask ourselves "what is it that is impossible to do today, but which, if it were possible, would fundamentally change my business".

It is in finding the answers to such a question that the greatest commercial and scientific breakthroughs the world has known have been realised.

Avocado Marketing Group Success

At the recent post harvest meeting of the Bundaberg shareholders of the Sunshine Coast Fruit Marketing Co-operative Association, the members were unanimous in their praise of the first season's operations.

Considering they were no longer responsible for the packaging and marketing of their product, avocado growers were very pleased with the prices received for their crop.

Spokesperson for the group, Roger Lee, said that excellent packing results and trouble-free transport operations were achieved by Rod Linnett's packing shed at Mellwraith just outside Gin Gin.

"With this being the first critical season of operations for the group, the results were more than expected by growers," Mr Lee said.

The group has invited small to medium sized growers in the Bundaberg, Childers and Gin Gin areas to consider joining Bundaberg shareholders to avoid the inevitable marketing problems that Bar Coding, Price Look Up Numbers and low volumes will bring.

Pollination

By Winston Lamb, from the Fruit Vine, Sunshine Coast Fruit Marketing Co-operative Newsletter

Let us look at an avocado farm.

The farmer has throughout the year kept the farm neat and tidy and always ensured that his management followed recommended guidelines so that the trees were healthy. The trees are almost ready to flower. Is it necessary for the farmer to do anything? Probably he will take one of these actions:

a. do nothing;
b. has one or two hives at the back of the orchard;
c. lets a beekeeper use his property from time to time thinking that there will be enough bees at flowering time; or
d. pay for managed honey-bees to arrive at flowering time.

Let us consider each one in turn.

Do Nothing

The farmer may have already assessed the area and knows that there are plenty of existing pollinators present. More likely he considers that pollination is a naturally occurring process that takes place. He does not consider that it is necessary to do anything.

Has One Or Two Hives

This gives false comfort to the grower. The number of hives is probably not enough to pollinate the whole of the orchard and bees may already be working a floral source before the avocados started flowering. It is most likely that the bees will not readily transfer to the avocados.

Lets A Beekeeper Use The Property

The beekeeper will only be interested in his bees obtaining honey or building up numbers. The avocados are not a good source of nectar for honey production. To do this the bees may or may not work the avocado flowers and once again we may have the same situation as above (not enough bees or they are working other floral sources).

Pay For Managed Hives

The beekeeper delivers hives of a consistent quality at flowering time and places the hives to help ensure that the bees are directed to the target crop. Bees are removed at the end of the flowering season. The hiring costs vary but you could expect to pay between $35-$45 per hive for the season. Hive numbers would be around 3+ for every 100 trees. The total hiring charge is probably very reasonable in relation to other management costs over the year and the importance of turning flowers into fruit.

Research by Dr. V. Vithange, C.S.I.R.O., St. Lucia has shown that the mean number of fruit per tree to be 227.2 without bees. This number increases to 788.2 with bees, an increase of 561.

Some further information on pollination can be found by reading the DPI book "Protect your Avocados".

Do you know whether you achieved maximum production last season? If not have you analysed why?

Bee-Scent To Attract Bees

From the Sunshine Coast Subtropical Fruits Association Newsletter, by courtesy of the Sunshine Coast Fruit Marketing Association

Increasing avocado fruit set is a fundamental step to higher profits, but it is one of the most variable factors that growers must try to manage. In addition to problems caused by insects and diseases, a primary obstacle is insufficient bee foraging. Bad weather, low bee numbers and many other factors can significantly reduce pollination and total yield.

A recent field test, however, has confirmed that Bee-Scent attractant, a pheromone based bee attractant, can increase bee foraging, improve fruit set by as much as one third and deliver higher profits at the end of the season.

A 21 acre orchard of 10 year old avocado tree's near Camarillo, California was selected for a field test. Bee-Scent was commercially applied to a five acre section of the orchard in mid-April. In July, researchers conducted a fruit count to determine the number of avocados in treated versus untreated trees. There were no commercial bee hives placed in the orchard and none were observed within 100 yards of the orchard.

Ten trees within the application area and ten trees outside the application area were used as the basis for fruit count. The result was an average increase of 27% in the number of observed fruit on Bee-Scent treated trees compared to untreated trees.

To reconfirm counts, researchers returned to the orchard in October for comparison counts. Surprisingly, as fruit matured and became more easily seen within the tree canopies, the fruit set among Bee-Scent treated trees increased to an advantage of 32% more fruit than untreated trees.

Recommended Bee-Scent Application For Avocados

Rate: 4.75-5.00 litres Bee-Scent/Ha

Water dilution: Ground application: 470-1870 litres/Ha

Aerial application: 75-140 litres/Ha

Application: Procedure - early morning application, avoiding rain and irrigation schedules is important.

Weather must be favourable for bee flight; i.e. sunny and warmer than 15°C, with winds less than 24 kph. To prevent interfering with the bee's homing abilities, do not over spray hives.

Timing of application: The first Bee-Scent treatment should be made at 30-50% bloom. A second Bee-Scent treatment should be made at full 80-100% bloom, typically 4-7 days later.

Chemical compatibility: Do not mix with insecticides toxic to bees. To safeguard bees do not apply bee-toxic chemicals during active bee pollination periods. Bee-Scent is compatible with Cutlass bio-insecticide and many fungicides and micro-nutrients. To avoid interference with the pheromone "message" check with

☛ 22

Genetic Engineering And Avocado Trees

From a presentation to Conference '95 by Stewart Washer, Biological and Environmental Sciences, Murdoch University, Western Australia

Genetic engineering is a relatively new science that has developed since the discovery of the structure of DNA in the late 1950's. It involves the manipulation of this DNA by cutting and transferring sections from one organism into another.

The real power of this technique is in the transfer of DNA coding for useful traits, such as disease resistance between two very diverse species. The sections of DNA that code for these traits are termed genes. Genes can be switched on or off in the plant as they are required, the switching mechanism for the genes are called promoters. Using different promoters with our engineered genes, we can limit the expression to the site of interest such as a wound site for an insecticidal gene.

When a gene is switched on, it is copied to another long stranded chemical called RNA that is then read to produce the protein, and it is this protein that carries out the function of the gene.

Transferring Foreign Genes Into Plants

Once a promoter/gene construct has been made it must be transferred to the genome (the complete genetic material for any cell) of the plant in order to be of any use. Luckily there is a group of pathogenic soil bacteria, *Agrobacterium* species, that transfer a section of their own DNA to the plant genome as a normal part of their life cycle. These have been extensively studied and manipulated so that they can now be used to transfer the DNA that we provide them and not the pathogenic DNA from the original organism. There are other ways of introducing foreign gene constructs into plants but the *Agrobacterium* method is by far the simplest and most common method.

Current Applications of this Technology

This form of gene manipulation and transfer into plants has many applications that are currently in use. More and more potential applications are thought of as more genes are discovered. Only three of these applications will be discussed in detail to provide a general understanding of some of the uses of genetic engineering.

Virus Resistance

Viruses are made up of two major components; the genome and the coat protein. The coat protein acts to protect the virus when it is travelling to it's next host cell. Once the viral genome invades a host cell it instructs the cell to make more of these coat proteins and more viral genomes, turning the cell into a virus producing factory.

It was found that by isolating the section of the viral genome that codes for the coat protein and then transferring this to the plant to express the protein the plants became resistant to viral infection. Many virus resistant plants made with this technique have already been approved for use in the US.

Insect Resistance

Bacillus thuringiensis is a soil bacterium that produces a natural insecticidal protein that is very specific for single classes of insects. This B.t. toxin is the active ingredient in the insecticide Dipel™ that is widely used by vegetable growers against *Lepidopterea* species (moths).

Genes for several of these B.t. toxins have been isolated from their bacterial hosts and transferred into many different crop plants to confer natural insect resistance lessening the need for toxic and costly spray regimes.

Herbicide Resistance

The herbicide glyphosate or Roundup™ works by inhibiting a key metabolic pathway in the plant cells. This occurs when the glyphosate molecule binds and inhibits the enzyme; EPSPS.

The gene for this enzyme has been isolated from plants and bacteria and constructs have been made with powerful constitutive plant promoters. Introducing these constructs into glyphosate sensitive plants made them tolerant to the herbicide since there was now enough EPSPS enzyme to overcome the inhibition. Glyphosate tolerant Soybean has been made and is being grown now in the US.

Novel Uses

Arctic fish antifreeze genes have been isolated and transferred to plants to confer greater frost tolerance.

The firefly luciferase gene is used as a marker for gene transfer experiments, making the plants glow in the dark.

Mammalian genes for immunity to different plant pathogen proteins (antibody genes) have been transferred to plants giving them basic immune systems.

Application to Avocado Trees

The first step that must be made before this technology can be applied to a new crop is to develop a technique for constructing the genetically manipulated plants. The difficulty here does not usually lie in getting the genes in but in fact growing the one or two cells containing the new genes back into whole fertile plants.

This is where plant tissue culture is very important and must be further developed for avocados.

At this stage there is no record of a genetically engineered avocado tree, however it is only a matter of time before a company or university turns their attention this way.

Once transformation methodology has been established for avocados there are many potential applications. In terms of disease resistance, chitinases and other fungal resistance genes have been isolated

21 ☛

your local dealer about tank mixture additives with Bee-Scent.

Hive placement: It is important that growers work with their bee keeper to ensure each crop is supplied with an adequate number of strong hives. Ideally, bees should be delivered to the area one day before the planned Bee-Scent treatment. This will prevent bees from becoming habituated on a competing nearby crop or wildflowers. Hives evenly distributed throughout the orchard ensures best results. Groups of colonies spaced at even intervals around the orchard periphery are a good alternative. In the case of a small block; colonies can be placed on the downwind edge of the area.

Active ingredients: Pheromones 9.5%, other natural attractants 42.5%, inert ingredients 48.0%.

Packaged: 10 litre bottles, two bottles per case.

Note: A Phone call to a local Sunshine Coast farm produce supplier revealed that a product called Beeline is available in a 15.87 kg pack. Made in California, it is distributed by Top Australia Limited.

that can be used to construct *Phytophthora* resistance. Also the B.t. toxin genes discussed above can be used for inserting resistance to insect pathogens such as aphids and thrip.

In terms of more novel applications, genes responsible for oil production could be manipulated to effect oil types and content while genes responsible for fruit skin colour could be manipulated to make green skins blacken upon ripening. The list of potential applications is very large indeed.

DNA Fingerprinting

Apart from genetically engineering plants, the new DNA technologies have allowed identification using an organism's DNA.

The earliest application of this has been for disease detection. Using very rapid procedures that do not involve any isolation or culturing of the pathogen as do existing techniques, fungi, bacteria, viruses and viroids can be detected with extreme sensitivity.

The basic procedure works by constructing small sections of DNA that bind specifically to the genome of the pathogen of interest where a positive result is only obtained when these small sections of DNA bind to the homogenate of the collected plant sample. Procedures such as these are already used in the detection of Sunblotch viroid in Avocados.

Plants can be individually identified from their DNA since every plant has a unique genome. Recently, simple techniques have been developed to find these differences.

This can now be used for the positive identification of cloned plants (made by cutting or tissue culture from the original) that are suspected to be in breach of PVR (plant variety rights).

Other uses for this fingerprinting may be to follow the sexual crosses of trees in an orchard since the DNA in the seedling can be traced back to the parents, or importantly in this case, the source of the pollen.

DNA fingerprints can tell us a lot more about a plant than the "fingerprint" analogy implies. Sections of these DNA fingerprints can tell us details about traits such as crop yield and disease resistance. This can be very useful as a screening tool for young plants or seedlings long before these traits can be observed physically. Plant breeders around the world are already beginning to use this technology.

The Clonal Rootstock Project

At Biowest we are already experimenting with avocado trees in tissue culture. We are fortunate to have a good tissue culturalist who has managed to grow the tree successfully in tissue culture.

Our project was conceived after visiting a nursery in California where clonal rootstock plants were being produced by the somewhat tedious method of "double grafting". We wanted to come up with a simpler, faster method by growing the trees in tissue culture and applying rooting hormones.

After nearly a year of experimentation we had no real success so we tried something different. Using a special Agrobacterium strain with natural auxin genes (auxin is the root inducing hormone) on cuttings of mature Hass trees, we achieved reasonable root formation without the need for tissue culture or any further special treatments.

This is a very exciting breakthrough as the production of clonal rootstock can be used to optimise whole orchards of trees by cloning the top producing trees without any seedling variation.

At this stage we are obtaining more Agrobacterium strains for testing and scaling up the experiment to verify our findings, this time with rootstock varieties in place of Hass.

The Future

Before any genetically engineered material can be released to the environment for field testing in Australia, it must first be approved by G.M.A.C., the government committee that regulates all genetic manipulation experiments.

At this stage we have a C1 rating on the Biowest lab to allow us to carry out contained genetic manipulations but these organisms must be destroyed before leaving the lab until they are approved for release.

As this is a new science with great potential we, as the public, must ensure that sensible scientifically based safety guidelines are set without regard to the emotional hype and scare mongering that has already occurred in the US, UK and Europe.

Apart from the economic and crop quality benefits resulting from this technology there will be major environmental benefits (reduction of insecticide use and increased yielding for more efficient land use).

Australia has the potential to be a world leader in this area of technology. At this stage we are scientifically as advanced as any other country in the world but to stay in front and gain the greatest benefits we must support this area of research as growers and direct it to where we believe the greatest benefits will be.

Storage Instructions On Sides Of Boxes

From Queensland Fruit & Vegetable News, 12 August 1993

Printing handling instructions for tropical fruits on the sides of each box is a certain way to make sure wholesalers and retailers "get it right", according to Yeppoon grower Lew Fitchen.

Mr Fitchen sends his mangoes to market in a box printed with the minimum holding temperature and ideal ripening temperatures for the fruit. The information is printed on the end of the box, with his grower details on the opposite end.

Mr Fitchen said other growers were starting to use the system, which he believed would be of benefit for many tropical and exotic fruits.

"Printing instructions on each box is really the only way to ensure the information is available to the wholesaler or retailer when they need it," he said.

"Often an agent gets fruit and he doesn't know what to do with it, especially in regard to some little known tropical fruits like carambola or sapotes. Some, especially in southern markets, even get confused between papaws and mangoes.

"I used to send out cards to wholesalers and retailers, but they would get lost or the people who had them would leave.

"Having handling and storage information on each box is also a means of getting more information to the individual retailer, where a lot of problems are though to occur, and to the consumer.

"The system provides growers with peace of mind that the fruit will be correctly looked after and acts as a "safeguard" as well.

"Wholesalers can't complain to us if fruit is damaged through incorrect storage or ripening, because precise instructions are printed on the product.

"It is an example of ways we will have to co-ordinate with other links in the tropical fruits marketing chain to provide consumers with better quality produce."

Successful Australia Fresh Campaign In Short Time

The Australia Fresh campaign launched in May has already achieved notable success in a number of markets and with a number of products.

In just five months, the campaign has supported over 60 different promotional activities in eight countries. Australia Fresh has reached all Australia's main export markets and developed a close working relationship with major fruit and vegetable exporters, as well as customers in the marketplace.

Some of its successes have included a joint promotion with a major citrus exporter and the leading NZ retail group, Foodtown, achieving a 252% increase in sales of navel oranges during the promotion.

A trial television advertising campaign has been running on the ABC satellite across Asia. Eleven markets around the region including India, Papua New Guinea, Taiwan and The Philippines were reached. Around 25-30 million "top end" customers and business people received the broadcast, which has already drawn trade inquires from countries like the Philippines, Indonesia and India.

Trial point-of-sale merchandising material and "street hawker" promotion programs were run in Kuala Lumpur and Jakarta in the September-October period which reached around 200 key "street hawkers", night markets and "wet markets" in each place. These programs were run in collaboration with key wholesalers and address an exporter concern that support must be given to non-supermarket retailing.

Australian fruit and vegetables were featured on the Australia Fresh stand at the TIFIS exhibition in Taipei in June with around 150 trade inquires referred back to industry. More than 100,000 people viewed the Australian products on display.

Advertisements have appeared in a number of key trade publications such as Asiafruit, and Retail Asia magazines, which has helped keep Australian products in front of retailers and the trade across Asia.

As part of a long term investment in key Asian markets, activities have been run like nutrition fairs, the Culinary Competition in Singapore and retail training in Malaysia, Indonesia, Singapore and Hong Kong.

A selection of point-of-sale material has been produced for use in the many promotions occurring in different export markets. Items include pennant chains, logo stickers, mobiles, product leaflets, seasonality charts and "bin wraps". The material is available for use by Australia Fresh licensees.

The Australia Fresh campaign is now preparing for even more activity in 1996. More licensees are joining the scheme and more products will be included.

Highlights of the planned 1996 campaign include promotional activity in Singapore, Malaysia, Indonesia, New Zealand, Taiwan, the USA and Japan, new campaigns in Thailand, the Philippines, India, Sri Lanka and other markets, more than $1.5 million of industry and government support, increased print and television advertising and strong supermarket and "street hawker" and "wet market" promotions.

Further information about the 1996 campaign and licence application kits are available from the Australian Horticultural Corporation.

Part of the Australia Fresh image that is being promoted in Australia's export markets.

PLU Numbers

The National PLU (Price Look Up) Number Catalogue was launched in Sydney on September 1. National PLU numbers will now be progressively, but quickly, introduced by major retailers.

Companies are being encouraged to make every effort to understand and prepare for the new system.

Retailers and suppliers alike have to adopt the many changes needed to progress toward full use of the catalogue. Software changes, staff training, new manuals, new fruit stickering arrangements, changing label stocks, etc., are needed to change from the old numbers to the new PLU numbers.

Since introduction there has continued to be some uncertainty about PLU numbers in industry. However, supermarkets have started to use the new numbers and this will increase in the coming months.

Products, such as avocados, are being targeted by the scheme where it is more practical to make immediate changes. Items not requiring fruit stickers are unlikely to be pursued as actively as for stickered fruit.

Significant efforts have also been made towards international compatibility. While complete compatibility is not possible, the Australian system should allow most PLU numbers to be applied for domestic and international use.

If you are in doubt about the purpose of PLU numbers, or the new system, talk to EAN Australia's Duncan Goldsmith on (03) 9569 9755 or Brian Hall at the AHC on (02) 357 7000.

In addition, EAN and the AHC hold copies of the catalogue and will send copies on request. The catalogues explain the scheme in detail.

EAN is an international body established to promote the development of "enabling technologies" world-wide, including PLU numbers.

Australian Horticultural Industry Market Access Visit To North Asia

A delegation representing the Australian horticultural industry have recent returned from visiting North Asian countries to discuss market access issues.

A delegation made up of AHC Managing Director John Baker, Australian Horticultural Exporters Association Chairman Graeme Mackey, Australian Citrus Growers Federation Executive Director Bob Curren, Australian Apple and Pear Growers Association President Jon Durham, Tasmanian Apple and Pear Growers Association President Tim Reid and AHC Export Development Manager Neil Offner visited Japan, Korea, Taiwan and China in September.

A number of key issues emerged from this visit concerning market access. In Taiwan the delegation met with Department of Health officials as well as representatives from the trade in that country.

One of the main issues under discussion for this market was the Maximum Residue Levels (MRL) allowed by Taiwan. While the primary products discussed involved apples and citrus the Horticultural Industry Market Access Committee will be raising this issue with other industries in the near future.

Following discussions on this trip to Taiwan Australia's bilateral stance on horticultural produce trade liberalisation may also be revisited and Taiwan's Council of Agriculture indicated a receptiveness to clarifying quarantine conditions for current banned product.

The delegation was advised that Australian submissions on mainland regional fruit fly area freedom would be considered.

In Japan discussions were primarily concerned with the export of apples but valuable contacts were made on this visit that will provide the groundwork for future discussions on a number of products.

The delegation were also very well received in Korea where citrus was the primary basis of discussions and the outlook for access looks positive.

The visit to China was also worthwhile in establishing contact with Government authorities and potential trade contacts. The Australian Quarantine and Inspection Service and the Chinese Government are currently exchanging correspondence on the timing of the next bilateral talks, likely to be held in the first quarter of 1996.

Horticultural Industry Market Access Committee member and AAPGA President, Jon Durham, pictured in a Friendship state-run supermarket in Beijing, China during the horticultural industry market access and development mission to China. On sale were Australian avocados from Brain Caparnigan (on the top shelf) that had probably travelled to China via the Flemington Markets and Hong Kong to get to Beijing. Trade via Hong Kong is described as "parallel imports" or "leakage".

AHC Customer Research

The AHC is mid-way through the first of its ongoing surveys of key customers. Interviews are currently being conducted with strategic businesses and domestic retailers by research company Richard Marketing.

The interviews will be followed by surveys with representatives from participating industries and international retailers.

The aim of the research is to:

- Provide information which will assist the AHC to refine its programs and services to meet the needs of Australian horticultural industries now and in the future.
- Establish a benchmark for the Corporation to measure, over time, its programs and service quality with key customers.

Results of the initial research will be release by the AHC at the end of November.

Unless otherwise indicated, all major articles in the AHC section were prepared by Amanda Wheeler, Australian Horticultural Corporation, Level 14, 100 Williams Street, Sydney 2001. Telephone (02) 357 7000, Fax (02) 356 3661.

Childers RPG Into The Records

By Garry Fullelove, DPI Bundaberg

What started off as a quiet Childers Regional Product Group (RPG) meeting at Tom & Donna Duncan's orchard one Friday afternoon in March this year turned out to be a milestone event in the life of the AVOMAN project.

It was at this meeting that the topic of keeping orchard records was raised. RPG members had expressed an interest in starting work on the orchard records side of AVOMAN as opposed to the recommendations part that has been developed over the last few seasons. The outcome of course was the "AVOMAN Block Recording System".

The dilemma of how to record orchard operations has always been a bug bear both for growers and extension officers. The need to record has never been in doubt with most growers making some attempt either for orchard management reasons or simply for the tax man. Tax based records have never been sufficient to make good agronomic assessments with, while simple diary entries of orchard operations have rarely been used again once that weeks page has been turned.

An example: Consider an orchardist who sprays three blocks of avocados on the morning of the 10th of April 1995 with a 600 L tank mix of 200 g/100L Kocide plus 190 ml/100L Endosulfan plus 60 ml/100L Agral. The standard way to record this in a computer data base could be as shown in the Table below.

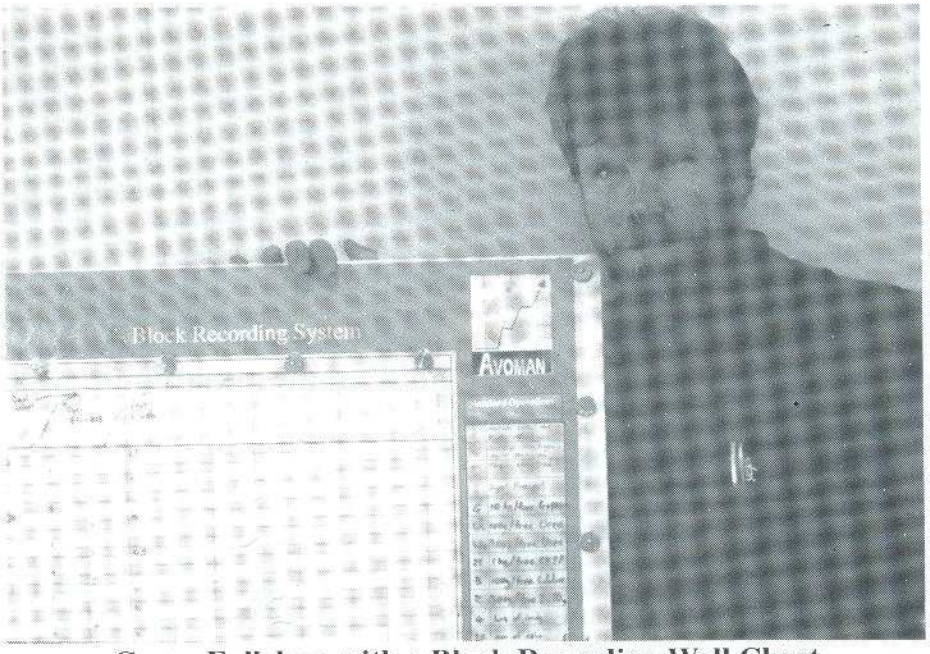
Nine rows of information to type in, simply to record in essence what was a 2 hour job of steering a tractor and sprayer around three blocks of trees.

"So how do Childers orchardists record this now?", I asked innocently.

In their diary on the page for the 10th of April, one wrote "sprayed blocks A2 B5 F3 with copper & endo".

"Not very specific", I commented to the grower.

"Bull...." says the grower, "that's all I need to know. I know it always takes 600 L to spray those three blocks this year. I know I always use 200 g/100L of Kocide and 190 ml/100L of Endo and for good measure I always put 60 ml/100L of Agral in. And I always spray in L1 at 1800 rpm. What else do you need to know; bloody extension officers always asking dumb questions. Do you want me to write War & Peace just to record what I did before breakfast?"



Garry Fullelove with a Block Recording Wall Chart.

That conversation was the quantum leap to the solution. The word "always" gives it away.

A quick, easy to use system that records all of the data needed to generate complete block histories can be developed around recording single codes/icons in a year planner for each block, where the codes/icons represent standard operations.

So the wall chart idea was hatched at this fateful Childers RPG meeting. Several members used systems similar to this, with one grower even doing a Ros Kelly and using a white board. The AVOMAN Block Recording System takes the idea a step further by recording on each sheet the constants for each block so that comparative analysis between blocks and even orchards can be done on an equal basis.

The current manual system is based on an A1 size backboard with A2 size year planners for each block attached by their top edge to the middle of the backboard giving large margins around the year planner to stick brochures, price lists and phone numbers etc.

Simon Newett has developed a pamphlet on how to use and get the most out of the AVOMAN Block Recording System and this will be distributed to users over the next month or so.

I wish to thank the Childers RPG members for their frank and open input into this exciting development and congratulate them on having the insight to sow the seeds for something that will be a great benefit to the whole avocado industry.

Growers interested in participating in RPG activities in the Childers district can contact me at the Bundaberg Research Station on 071 556244.

Record	Date	Block	Product	Rate/100L	L/Tree
1	10-4-95	A2	Kocide	200	4
2	10-4-95	A2	Endosulphan	190	4
3	10-4-95	A2	Agral	60	4
4	10-4-95	B5	Kocide	200	6
5	10-4-95	B5	Endosulphan	190	6
6	10-4-95	B5	Agral	60	6
7	10-4-95	F3	Kocide	200	3
8	10-4-95	F3	Endosulphan	190	3
9	10-4-95	F3	Agral	60	3

Bundaberg RPG On Top Of Growth Cycles

By Garry Fullelove, DPI Bundaberg

The Bundaberg RPG through the Bundaberg & District Orchardists Association (BDOA), has taken a major step this season in contracting a trained horticulturist to record the phenology cycles of the five main avocado varieties grown in the region.

Even with the updated 1995 growth cycle recording kit, growers were unsure they would be able to collect enough data to produce adequate growth cycle information for use in the AVOMAN computer software.

The Bundaberg RPG which operates as an informal commodity group under the umbrella of the BDOA received the green light at the August meeting to contract Dianne Fullelove to record the data necessary to generate growth cycle curves for Shepard, Fuerte, Sharwill, Hass, and Wurtz avocados in the Bundaberg region.

In the week following the decision, blocks were chosen that fitted the criteria and ten trees of each variety were numbered, evaluated and root flush sites established.

The blocks chosen were a Shepard and a Hass block on George Green's orchard, a Fuerte and a Wurtz block on Derek Foley's orchard and a Sharwill block on Roger Lee's orchard.

Over the next twelve months Dianne will complete the data sheets with observations she makes on her rounds and with the help of the growers recording several of the key dates required in the process.

Dianne Fullelove already at work in the field recording avocado growth data.

Congratulation must go the members of the Bundaberg RPG for taking the initiative on this issue as much of the value of the AVOMAN project rests on being able to link orchard management decisions to the crop cycle and not the calendar. Without adequate crop growth cycle data, AVOMAN recommendations could only be as good as the estimate the software made of varietal performance in this region.

Avocado growers interested in participating in RPG activities in the Bundaberg region can contact me at the Bundaberg Research Station on 071 556244.

Changes To Food Labelling Laws

Consumers will find it easier to buy Australian products under a new three-tier country-of-origin labelling system if the proposal for its introduction is approved.

At present it is difficult for consumers to know if a product is made from Australian ingredients or whether it is just packaged in Australia.

The three proposed categories are:

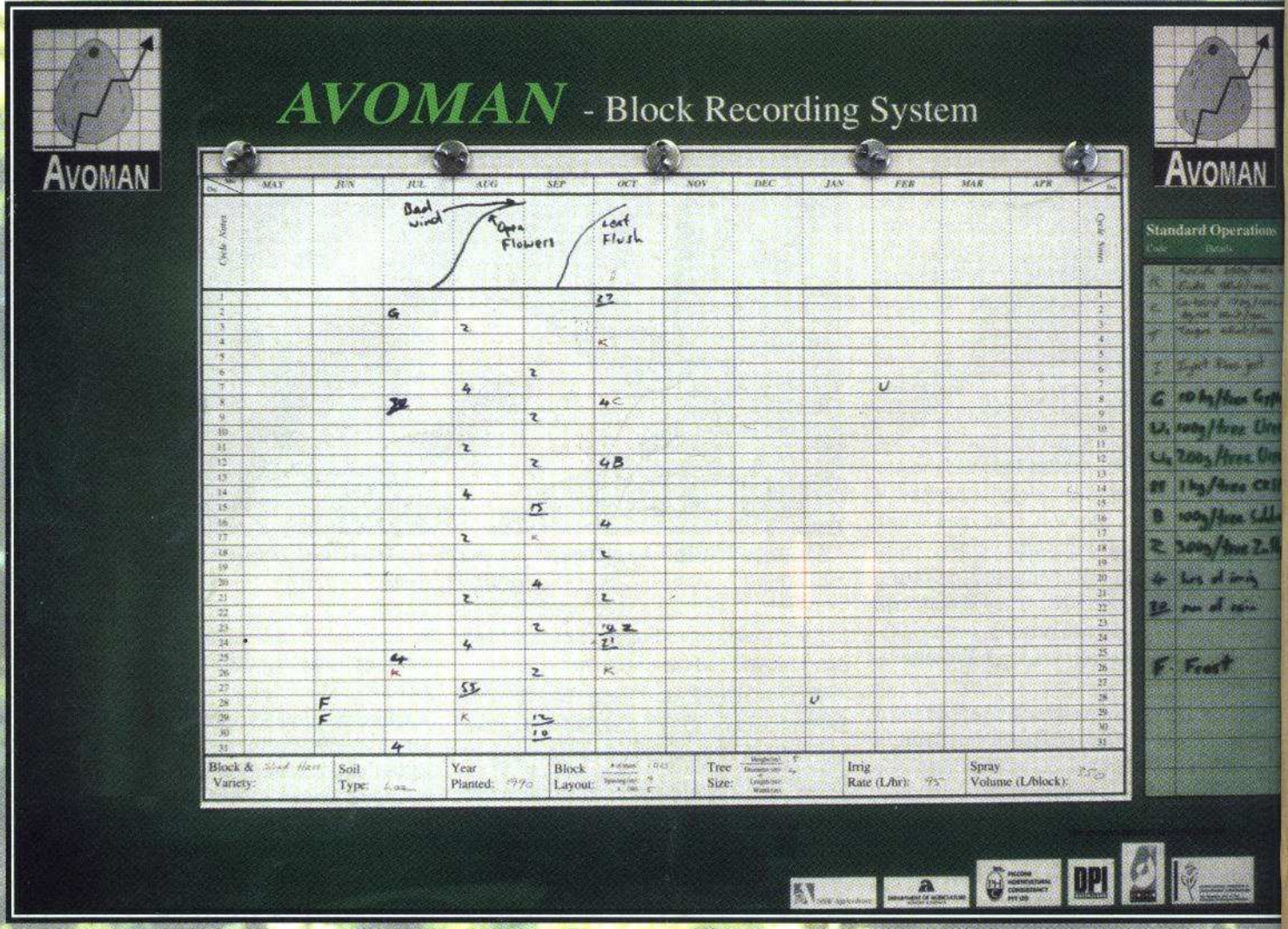
1. **Product of Australia** - where all ingredients are Australian and all processing takes place in Australia.
2. **Made in Australia** - where the food obtains its essential character in Australia. If the food contains imported ingredients, this must be declared on the label unless the ingredients are not available in Australia. **"Made in Australia from local and imported ingredients"** means that more than 50 p.c. of ingredients are local.
3. **Packed/blended cured/smoked in Australia from imported ingredients** - where the food has some Australian input. The Australian character or process must be declared as well as the nature of the imports: e.g. "squeezed in Australia, US oranges".

AVOMAN And Windows '95

Windows '95, the latest computer operating system from Microsoft, was officially released in August and some of you may be wondering whether AVOMAN will be compatible with it.

The short answer is yes it will. The next AVOMAN prototypes are already being developed under Windows '95 to ensure that they are compatible with the new system.

This does NOT however mean that you need to upgrade to Windows '95. Separate versions of the AVOMAN software prototypes will be available to those who wish to continue using their current version of Windows (3.1 or 3.11).



AVOMAN Block Recording System Wall Chart