

Australian Avocado Industry Update for 2001

The History and Development of the Australian Avocado Industry

Frank Moore

CAS Director-at Large for Australia

Industry update for 2001

It's late in June, and as the cooler winter temperatures set in, this year's harvest of the Hass crop is in full swing. The Queensland contribution, which represents 65% of our national production, will end by mid to late November, and New South Wales which represents 20% of national production, should peter out by late in December. New Zealand normally begins sending their fruit to Australia in mid November. This fruit, plus production from South Australia, Victoria and Western Australia supplies the Australian market through until early March next year when the first of the new season's crop of Hass and Shepard arrive on the market from north Queensland.

The 2001 season will be hard to forget for those growers who were unfortunate enough to experience the fury and devastation caused by wild wind and hail storms during the year. To add to their despair, the summer of 2001/02 has dealt out extremely high temperatures. Coupled with next to no rainfall, it is a recipe for bushfires and devastation leaving much of Queensland and New South Wales drought affected, some say the hottest and driest summer in the last one hundred years.

We are told to expect more of these extreme conditions in the future as the experts from the Bureau of Meteorology relate these volatile weather patterns of extended dry periods, torrential rains and violent storms directly to global warming.

In spite of these setbacks, the domestic market remained adequately supplied in Sydney, Melbourne and Brisbane. Prices remained steady throughout due to lower than average quantities received from the Victorian and South Australian regions where crops were adversely affected by two weeks of constant 40 degree Celsius plus heat, peaking at 48 degrees for two days, which caused excessive fruit drop.

Season 2001 will also be significantly remembered by the retirement of two of the Australian avocado industry's leading researchers, namely, Dr. Tony Whiley and Mr. Ken Pegg.

It is indeed a pleasure to report on two such noble gentlemen and their distinguished careers. I feel I can confidently speak on behalf of the Australian avocado industry in saying that we have been fortunate to have men of their calibre associated with our industry and we are proud of their achievements.



Dr. A.W. Whiley

Tony held the position of Senior Principal Horticulturalist with the Queensland Department of Primary Industries (QDPI) at the Maroochy Research Station on the Queensland Sunshine Coast, before his retirement in December, 2001. His career spanned 34 years with the QDPI and during that time he made a significant contribution to horticulture in Australia with the main focus of his work being on avocados and mangoes.

During his career, Tony developed a reputation for his holistic approach to his work and being able to communicate with all levels of the industry. This earned him the respect of the avocado industry here in Australia, and indeed, throughout the world.

There have been many notable achievements in Tony's career. The introduction of phosphonates into trunk injection in collaboration with Ken Pegg, the use of the phenological cycle to better understand tree management and to optimize the timing of management decisions, his guidance and input into the AVOMAN package and his work towards furthering the development of canopy management practices by using strategic pruning techniques and the use of plant growth regulators, are some that come to mind. It is also important to remember that Tony always was prepared to speak at dinners, field days and other industry functions. Whether he was the key note speaker at a national industry conference or wandering through an orchard at a field day answering questions, Tony's knowledge and understanding of the crop always ensured function organizers that they would get a good attendance from growers. This was an indication of his reputation and commitment to our industry.

Since his retirement, Tony has shifted into private enterprise and by all reports he is thoroughly enjoying his new direction in life. The Australian avocado industry is fortunate that Tony is now free to concentrate his efforts in the field, as he is involved in the area of rootstock improvement for our industry. We look forward to future outcomes.

On behalf of the Australian avocado industry I wish to thank Tony for his dedication and wish him and his wife Dorothy, a long and happy retirement.



Ken Pegg, BSc

In April 2001, Ken Pegg retired from his position as Senior Principal Scientist with the Queensland Department of Primary Industries at Indooroopilly Research Centre in Brisbane, Queensland.

Ken's retirement brought to an end a 45 year career researching solutions for the control of diseases in horticultural crops, in particular avocados, bananas and passion fruit here in Australia. Ken's exceptional contribution to plant protection has been widely recognised by the Australian and international horticultural community. He was given the Award of Honour for Outstanding Service to the Australian Avocado Industry in 1988, awarded the prestigious inaugural Graham Gregory Medal for excellence in research by the Horticulture Research and Development Corporation (HRDC) in 1993 and made a Fellow of the Australian Plant Pathology in 1994.

After seeing the devastation of avocado trees caused by *Phytophthora* root rot in 1974, Ken devised protocols for the production of disease free nursery trees that were adopted by the industry through the 1978 implementation of the Australian Nursery Voluntary Accreditation Scheme (ANVAS). Ken also developed a package of management strategies to prevent the ravages of *Phytophthora* root rot at farm level, as there was no effective chemical control available at the time.

In the 1980's, Ken was a key player in the development of trunk injection, phosphonate fungicide technology that went on to gain national registration. This provided growers with access to a low cost fungicide and an effective application system that was extremely successful in combating *Phytophthora* root rot.

More recently Ken has been active in developing improved methodology to progress the control of anthracnose. The group he worked with made a pioneering discovery in finding that rootstocks have a significant influence on the level of anthracnose observed during ripening. In the future this discovery has the potential to significantly improve the reliability and quality of fruit offered to consumers. Throughout his career, Ken has unselfishly reinvested his knowledge and experience to assist with the training and development of numerous young scientists.

We sincerely thank Ken for his contribution to the Australian avocado industry and wish

he and his wife Sue a long and happy retirement. Ken plans to spend more time with his grandchildren, enjoy his fishing and maintain a keen interest in avocado and passion fruit research. To assist with the latter, the Queensland Horticulture Institute has offered him an associate scientist position realizing Ken still has a lot to offer the industry and his colleges.

AVOMAN

Work is underway on the first major update of the AVOMAN software since its commercial release to the Australian growers in 1998. The most significant change is a more powerful interface for growers to review their orchard records and produce reports, aimed at facilitating better management decision making by growers. The new version will also provide growers with the ability to trace fruit from a consignment back to the block it came from increasingly important these days to satisfy food safety requirements. The new version will be released later this year and hands-on software training will be provided in major production centres.

Next year the AVOMAN team will update the AVOINFO Avocado Reference Database. The update will incorporate information from conferences, yearbooks, journals and bulletins from around the world since 1998. The interface will also be updated.

Australia & New Zealand Avocado Growers Conference. "Vision 2020"

2001 was Australia's turn host a joint conference held every 4 years with New Zealand. The 2001 conference was held from 3-7 June in Bundaberg, Queensland.

Bundaberg is generally regarded as the "fruit bowl" of Queensland, centrally located between Brisbane and Australia's famous Great Barrier Reef offering conference delegates the opportunity to combine a holiday with the conference. The conference was well attended by 380 delegates. Growers came from all parts of Australia and New Zealand with visitors from USA, Israel, South Africa, the UK and Chile.

The theme of the conference was "Vision 2020", and presentations focused on the issues from a marketing and a production perspective which the industry needed to be aware of if the opportunities for the industry were to be maximized.

The organization of the conference was first class and included many technical presentations, visits to nearby orchards and social events. The conference final day was dedicated to an orchard canopy management workshop, where delegates had the opportunity to visit various orchards and see for themselves a variety of methods being trialed and used commercially.

For further details on the conference presentations a conference CD can be obtained by contacting: Industry Manager, aagf@uq.net.au.

The History and Development of the Avocado Industry in Australia

In the beginning...

Whilst the avocado tree is not part of Australia's native flora, it has adapted very well since it was introduced into Australia, and is now grown in all the states of mainland Australia.

It is not known exactly when or how the avocado tree arrived into Australia, but we do

know from records that an avocado tree was growing in Sydney at the Royal Botanical Gardens in 1840. I have been unable to determine exactly how it was introduced into Australia; there are two schools of thought.

Firstly, the MacArthur family may have brought it into Australia with the first fleet as early as 1788. In those early days, trading of both stock and plants was a way of life and a means of survival and we know that on its way from England, the first fleet stopped in Central and South America (where the avocado tree is thought to have originated) before continuing its journey to Australia. The MacArthurs were responsible for introducing the Merino sheep into Australia and it is believed John MacArthurs son William, who was particularly interested in trading plants, actually had an avocado tree in his garden at Camden Park, west of Sydney. William is known to have been associated with a highly regarded plant trader, John Carne Bidwell, who in 1847 introduced the mango tree into Wide Bay, Queensland.

The second school of thought revolves around the fact that in those early days there were avocado seeds obtained from sailing ships, quite possibly whaling ships that used to stop to take on supplies at an island called Mauritius. We have evidence telling us that the avocado tree was introduced to Mauritius in 1780. In those days the avocado fruit was used by the sailors as a substitute for butter in the days before refrigeration during long periods at sea and known as "Midshipman's Butter".

The avocado or Alligator Pear, as it was known then, was first introduced into Queensland in 1854 from the Sydney Botanic Gardens. There were later attempts to introduce the avocado tree into the Sunraysia area, however it is believed the trees could not compete with the frosts and consequently, they died.

An industry is born...

There is no doubt that once the avocado tree was introduced into Queensland that it was the beginning of the Australian avocado industry. For many years the growing of the avocado tree was confined to a few gardens and the occasional backyard plot. It was not until 1930 that the first commercial planting of one hundred seeding trees was made by Mr. James Wilson Snr, at a place called "Hunchy" on the Blackall Range just north of Brisbane. His first crop was harvested in 1935 and sent to the Sydney Markets. These were the first avocados to be handled by the Sydney Markets and at that time they could only sell about six half-bushel cases per week.

The first grafted Fuerte and Nabal trees were imported from California in 1931 by Mr. White Snr of Redland Bay. In 1933 brothers Fred and Lewie D'Arx introduced Fuerte, Nabal, Puebla and Benik varieties and established them at Tambourine Mountain, not far south of Brisbane. A seedling tree was selected on Tambourine Mountain and named Sharwil in recognition of Mr. Frank Sharp and Mr. James Wilson. This variety was used commercially in Hawaii. In 1935, Mr. John Anderson planted avocados at Durambah, on the New South Wales far north coast.

After World War II, avocado orchards were established in other areas of Queensland and northern New South Wales. Because the fruit was unknown in the market place, growers were cautious about planting and orchards remained relatively small.

Set backs and achievements...

The American troops stationed in Australia during World War II were responsible for making the Australian public aware of the value of the avocado fruit as a food. During the 1950's and 1960's as plantings came into production and with help of limited sales promotion, demand increased and at the same time prices increased which caused the industry to begin to grow rapidly creating concern amongst industry leaders that supply would overtake demand.

This was not to be, as in 1974 the avocado industry was significantly set back by disastrous flood rains in Queensland and northern New South Wales. An estimated 50% of trees were lost from the effects of *Phytophthora* root rot or from just drowning. This devastation caused prices to rise to unprecedented levels as the remaining trees could not meet the demand.

Having witnessed this devastation, the management of root rot was a priority for Ken Pegg and Tony Whiley. The industry was encouraged to utilize an integrated disease control program to combat the problem. This program involved the use of disease free nursery stock, use of rootstocks which offered some level of resistance, ensuring only deep well drained soils were planted and that ridging was used to assist drainage, organic amendments were utilized, high soil calcium levels were maintained and judicious use of highly selective fungicides was possible. Ken and Tony introduced trunk injection of phosphonates to Australia after promising results from preliminary trials in South Africa. Using phosphorous acid they then adapted this technique to Australian conditions, and made significant advances in the understanding of the optimum timing and application rates in relation to tree physiology. As a result, trunk injection provided a management tool to control *Phytophthora* root rot, which had previously threatened the survival of the entire industry, at a very low cost.

Initial glasshouse trials at Queensland Department of Primary Industries Indooroopilly Research Centre in Brisbane in 1983 showed that *Phytophthora* root rot in *Persea indica* was controlled by spraying or drenching with phosphorous acid partially neutralized with potassium hydroxide. In November 1983, field experiments commenced at Caboolture and Tambourine Mountain, where solutions of partially neutralized phosphorous acid were injected into trunks of root rot affected trees. The trees responded to the treatment over the next twelve months. Further field trials to determine the optimum timing of injections and application rates in relation to the tree physiology were conducted at Maleny between 1985 and 1989.

There have been many notable achievements by researchers and growers in the Australian avocado industry's short history to date. On 18th October 1974, the Australian Avocado Growers Federation (AAGF) was formed by two states: Queensland and New South Wales. Since then all other producing states have become members. This gave the industry the opportunity to speak with one voice and work towards common goals. The instigation of the Avocado Nursery Voluntary Accreditation Scheme (ANVAS) aimed at upgrading avocado nurseries to produce trees free of *phytophthora* root rot. This is achieved by correct nursery construction and strict hygiene regulations, and supervised by state department officers. Nurseries who qualify under this scheme are recommended by the AAGF as suitable and preferred nurseries for growers to purchase their trees from. This scheme has made a valuable contribution to our industry.

Marketing and Promotion...

Until maybe five years ago, we have had an enormous task in competing with General Practitioners in trying to promote our unique product. For many years, the avocado unfairly received bad publicity from our medical industry that set out to deter people with cholesterol and heart problems from eating avocados because they were thought to be contributing to the problem. It has only been in recent years that this has turned around completely. The study by Dr David Colquhoun at the Wesley Hospital in Brisbane which was reported in 1990 was a landmark for the avocado, internationally. This study concluded that rather than be avoided, avocados are an important addition to cholesterol-lowering diets. These days, with the public being so conscious of what they eat and whether it's healthy or not, the avocado is doing well in making up lost ground.

Another major change in recent years has been from the perception that avocados are a delicacy. For many years the avocado was promoted as a food for a special occasion. Now, with the intention of increasing consumption, we are promoting the avocado as an everyday food and as an excellent alternative to butter perhaps "Midshipman's Butter"!

The Marketing and Promotion of our Australian avocados has come on in leaps and bounds in the past two or three years. Who would have thought we would reach the day when we see television advertising featuring Australian avocados being promoted as the healthy food source for all age groups?

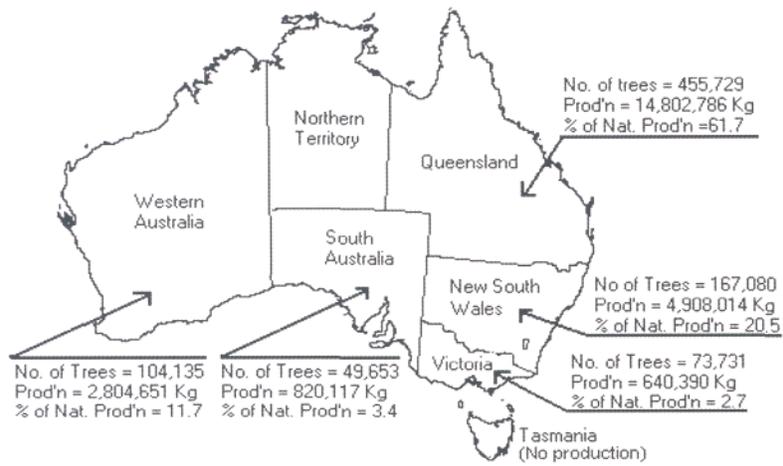
Probably one of the significant features of Australia's avocado industry in relation to Marketing and Promotion, is its geographical position. Our isolation in comparison to the rest of the world reminds us that our market must be able to accommodate our production.

The future looks bright for an industry, which must determine its own destiny. Our main priority in the future should revolve around maintaining and improving fruit quality and increasing consumer confidence as satisfied customers prepared to pay a premium price for quality fruit should equate to long term profitability for the industry. We have a long row to hoe however significant steps have been taken in recent years.

The Australian avocado industry today...

We have come a long way since Mr. Wilson's initial planting in 1930, some 71 years ago. We now have in excess of 850,000 trees in the ground making up an industry worth over AUST\$ 60 million (less than 2% of production is exported), consisting of approximately 1160 growers. Our growers are kept up to date with all matters pertaining to the industry by our industry magazine "Talking Avocados".

Realizing Australia doesn't feature as a major international producer, I feel we have made a significant contribution to the betterment of the avocado industry worldwide, and I am quietly satisfied with our position in the international avocado community.



National statistics = 850,329 Trees / Prod'n = 23,975,957 Kg (3,995,992 x 6 Kg Trays)