

NEWSLETTER

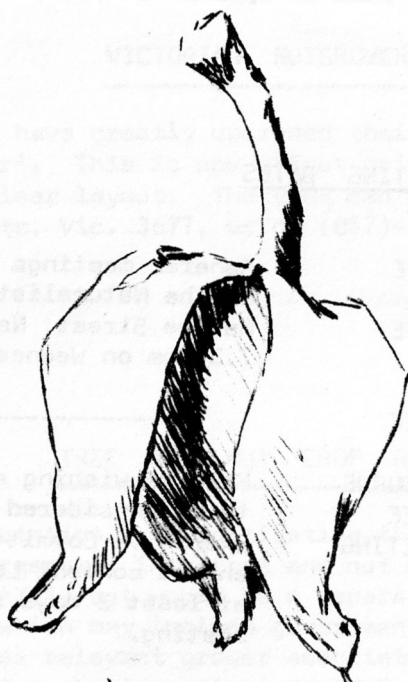
# Quandong

WEST AUSTRALIAN NUT AND TREE CROP ASSOCIATION

JAN. 1984

Vol. 10 No.1\*

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Soursop bud

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\* See note on page 2.

\* ERROR IN VOLUME NUMBERS OF 'QUANDONG'

An error occurred with the numbering of the last two issues of 'Quandong' for 1983. The third issue was numbered Vol.10 no.2 (should have been Vol 9, No.3) and the fourth issue was numbered Vol.10, No.4 (should have been Vol.9 No.4) Please correct the numbering on your 1983 issues of 'Quandong'. The correct numbering (Vol.10, Nos.1-4) will be applied in 1984.

MEETING DATES

JAN 3 EXECUTIVE COMMITTEE  
FEB 8 GENERAL MEETING  
MAR 20 EXECUTIVE COMMITTEE  
APR 8 PERTH FIELD DAY  
MAY 2 GENERAL MEETING  
JUN 19 EXECUTIVE COMMITTEE  
AUG 1 GENERAL MEETING  
AUG 13-15 ACOTANC-2, MELBOURNE  
SEP 25 EXECUTIVE COMMITTEE  
NOV 7 ANNUAL GENERAL MEETING

General meetings are held at the Naturalists Hall, Meriwa Street, Nedlands, at 7.30 pm on Wednesdays.

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Members wishing any matter to be considered at an Executive Committee meeting should contact Lorna Budd at least 2 days before the meeting.

## OFFICERS 1984

At the Executive Committee meeting on January 3, David Noel and Wayne Geddes were re-elected as President and Vice-President, respectively. Lois Evans also continues as Yearbook Editor, and Bill Napier soldiers on as 'Quandong' Editor.

## VICTORIAN NUTGROWERS ASSOCIATION

The VNGA have greatly upgraded their newsletter, 'The Victorian Nutgrower'. This is now offset printed, and includes photos and a good clear layout. The VNGA can be contacted at P.O. Box 69, Wangaratta, Vic. 3677, or on (057)-212463.

## TREE AND NUT CROP RESEARCH FOUNDATION

The Association is investigating the formation of a body to conduct research into tree and nut crops. It would be affiliated with WANAYCA, but would be a separate legal entity supported from sources which may include government and commercial organizations as well as relevant grower associations. Anyone with input on this matter should contact David Noel, President, at P.O. Box 27, Subiaco, W.A. 6008, or on (09)-381 7341.

### GARDEN WEEK

Garden Week will be on March 22-27 at Perry Lakes this year. The Association hopes to mount a display in the Horticultural Council tent, which will be of much cooler material than previous years, with fan cooling. Anyone able to assist with our display, please contact Alex Sae on 397 5628

### ACOTANC-2 BUS BOOKING

The Association is considering hiring a coach to take members to the Melbourne ACOTANC-2 meeting on August 13-15. Any member interested in using this cheap method of travel MUST contact Secretary Lorna Budd before the end of February, either at the next meeting (February 8) or by phone on 458 5918. No response = no coach!

### NEXT MEETING - FEBRUARY 8

At the next meeting it is intended to present a report and slide show on Nut and Fruit Growing in Brunei, Sabah, the Philippines and Singapore. This results from the WANATCA tours of these areas which took place in 1982, and is expected to be presented by Mike Hawson of the Department of Agriculture, who led the second tour.

Results of Tree Auction - 1983 Nov.2

Carob \$1.00, \$1.50

Gingke \$3.00

Bunya Pine (Araucaria bidwillii) \$1.50, \$3.00

Indian Jujube (Zizyphus Mauritiana) \$3.50

Persimmon (Diospyros Kaki) \$1.50

Tropical Black Walnut (Juglans neotropica) \$5.00

Guava \$2.00, \$3.00

Moreton Bay Chestnut (Castanarpermum australe) \$3.00

Pecan \$2.00

(Also many small avocados, palms litchis etc at 30c-80c)

PERMACULTURE DESIGN COURSE

DATE 12th - 26th June 1984

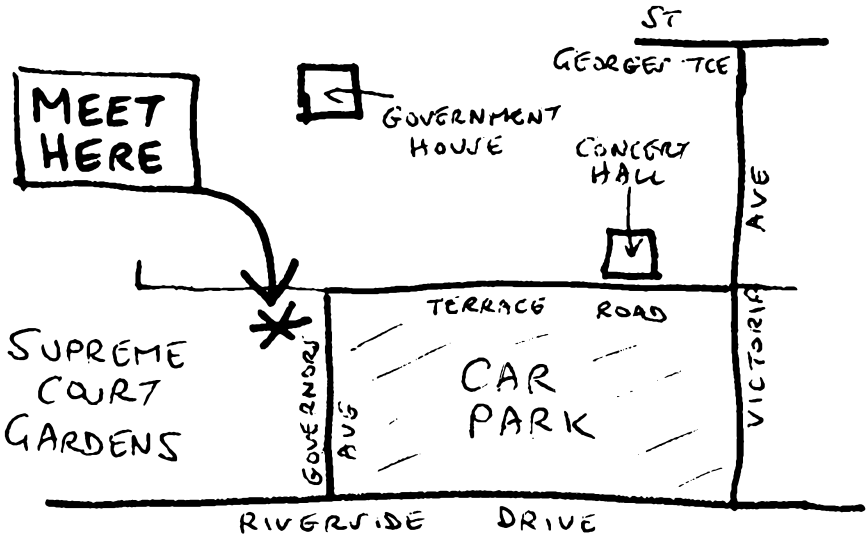
AT Mapleton via Nambour, Queensland (Australia)

A COURSE FOR PEOPLE WITH AN INTEREST IN PERMACULTURE DESIGN  
IS TO BE HELD AT THE MAPLETON CONFERENCE CENTRE .

The course will involve all aspects of Permaculture Design and  
Principals in Urban/rural/village situations in theory and practice.  
The course is being held in an area of high permaculture activity  
and the possibility exists to visit permaculture properties during  
or after the course.

FOR FURTHER INFORMATION WRITE TO: KIM CHRISTIE/MAX O. LINDEGGER  
MS. 956  
MAPLETON FALLS FARM  
MAPLETON 4560 QLD  
Australia

## PERTH FIELD DAY



A Central Perth Field Day will be held beginning at 9.30 am sharp on Sunday April 8. Meet at the N.E. corner of Supreme Court Gardens, closest to the large Car Park opposite the Concert Hall.

The tour will look at interesting nut and fruit trees in Central Perth, and is expected to last about 4 hours. We expect to visit Supreme Court Gardens, Kings Park and the Zoo. Time will be allowed for travel between these points by foot, bicycle and bus, as well as by car, and members can return from the Zoo to the starting point by MTT ferry.

The sites visited contain many interesting and unusual nut and fruit trees, and many of them should be in fruit during April.

## QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES

### HORTICULTURE BRANCH

#### Home Processing of Cashew Nuts

Both the nut (after processing), and the apple of the cashew are edible. The apple (the large fleshy fruit at the top of the nut) can be eaten at a stage when it is just ready to fall naturally. Care should be taken as the apple is very attractive to fruit flies. Some people find that their mouths blister from eating the apples so one should experiment a few times before eating any quantity of the fruit. Flavour of the apple varies considerably from tree to tree.

When considering the processing of the nuts it should be remembered that the shell of the nut contains a blistering caustic sap which is released if the shell is damaged in any way. Do not attempt to crack the unprocessed nuts.

The processing consists of roasting the nuts at 350 - 400°F (180-200°C) for 10 - 20 minutes on fine sand to extract the caustic cashew nut oil. The oil may spurt from the shells when the nuts are heated. During this initial roasting the sand will take up the oil and also prevents the oil from spurting. Never attempt this initial roasting without first either covering the nuts with sand, or else having a lid on the container.

The temperature used for roasting has to be hot enough to cause the oil to exude from the shell of the nut but not hot enough to cause the kernel to dry out. Temperatures of 450 - 500°F (230 - 260°C) will cause the oil to vapourise and issue as a choking cloud from the oven as well as causing the kernel to dry out.

A small amount of experimentation may be needed to obtain the exact temperature and time needed for oil extraction.

Care should be taken to inhale a minimum of the fumes given off during roasting.

Preferably use an old dish when doing the initial roasting of the nuts as the bill may be difficult to remove from the dish after the baking is finished.

After the initial roasting the nuts are sieved out of the sand and washed in water and detergent to remove the final traces of oil. Care should be taken not to wipe your face or eyes with your hands while washing or cracking the nuts, because of the possible residue of caustic oil.

The nut is then cracked and the kernel freed of the thin brown skin.

The final process is roasting the kernel in coconut oil at 300°F (150°C) for 5 minutes.

#### Cashew Wine

Wine can be made from the cashew apples in the same way as wine is made from other fruit. It is a somewhat involved process and anyone wishing to make wine should consult or join a local Wine Makers Guild.

December, 1974

## NOTICE

A National Conference on 'Reversing the Decline of Trees on Farms' will be held at the University of New England, Armidale, N.S.W. on May 14-16th 1984 (three full days).

Registration fee of \$60.00, accommodation \$33 per day.

Further details will be available when registration forms are released about February 1984.

If you wish to receive a detailed programme or other information please contact Chairman, F.O.F.T. II Committee,

C/- P.O. Box 145

ARMIDALE N.S.W. 2340 (067)72 2452

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Did you know???

AGRIFUTURE INC.  
Gordon L. Fisher, President

"Our company, Agrifuture Inc., has a wholly owned subsidiary named International Development Enterprises, Ltd. which handles all of our overseas developments. International Development Enterprises has entered into agreements in principle to develop Macadamia on several parcels of land approximately 50 miles north of Perth in Western Australia. The total size of the project is some 300 acres with the planting material being provided by Turner Horticulture International of Brisbane, Queensland, Australia. The company intends to establish a processing plant in the vicinity of Gin Gin, Western Australia to service the acreage. The varieties which will be planted will all be on rootstock *Macadamia tetraphylla*. The varieties will be as follows:

'Kau'	(344) - 75%
'Keauhou'	(246) - 15%
'Makai'	(800) - 5%
'Keaau'	(660) - 5%

The planting is to commence in the second quarter of 1983"  
from California Macadamia Society 1982 Yearbook



LETTERS

# The Midland Friendly Garden Club Inc.

Affiliated with  
The Garden Club of Australia &  
The Western Australian  
Horticultural Council (Inc.)



59 Wroxtton Street,  
MIDLAND. 6056.  
26th October, 1983.

Mrs. Lorna Budd,  
Secretary,  
West Australian Nut & Tree Crop Association,  
Box 27, Post Office,  
SUBIACO. W.A. 6008.

Dear Mrs. Budd,

Over the past few months many of our members have had plants die for no obvious reason. However, when these plants have been removed from the soil it has been found that their roots have been restricted by small plastic pots. These are known as net pots and on removal from the soil have shown no sign of decomposing.

In view of this, it is with great concern that we find that you have published a report regarding net pots and in doing so, have promoted their use by your members.

The plants that our members have lost have ranged from Azaleas, Bougainvilleas to native plants and we feel that if the very vigorous roots of a Bougainvillea could not break the plastic, other plants would have no hope.

We hope that you will be able to pass on our members concern regarding the use of these pots.

Thanking you,

Yours faithfully,

*M.K. Chilcott*  
(Mrs. M.K. Chilcott,  
Secretary.)

# R. J. WALLACE PTY. LTD.

Engineering Design, Management & Construction

Machinery, Equipment, Processes, Buildings & Structures

232 Beechworth Rd.,  
Wodonga,  
Victoria 3690  
060-24 3526

11 October 1983

West Australian Nut Growing Society  
P O Box 98  
GOSNELLS W.A. 6008

Dear Sir

For some time now I have been investigating improved methods of Nut Harvesting, as there seems to be a lack of suitable equipment in this country.

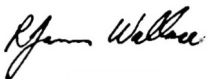
Following these investigations I have developed a design for a small low cost harvester which attaches readily to a small tractor (12-14 HP). Basically the device consists of a front mounted rotary sweeper coupled to a side mounted elevator discharging into a towed trailer.

The outfit is thus quite manoeuvrable, low and would sweep a path approx. 1.5m wide at a speed of 1.5 km/hr or more. It is expected that the cost of the attachment would be less than \$5000, if manufactured in quantity.

At this stage I am about to construct a prototype, but before making this commitment I would like to have some idea as to the extent of interest in the device.

Therefore I would appreciate hearing any comment that you and your members might have on the subject. I would be pleased to supply further information if necessary, and look forward to your reply.

Yours faithfully  
R J WALLACE PTY LTD



R J WALLACE

DAINTREE COFFEE PLANTATION  
Daintree Queensland 4873

Thank you for your interest in our coffee plantation. I enclose a pamphlet which explains a little about our operation. We also have a number of nut and fruit trees suitable for the area, and plenty of bush and mountain walks for those wishing to explore. Of interest to nut growers would be our caryocar trees from the Amazon which Sir Henry Wickham smuggled to Malaysia along with rubber trees. Unfortunately their importance was eclipsed by the then existing need for rubber. We have a number of small seedlings of "blackfella" nuts - a prolific native tree of (we think) potential commercial value. We have one *Brosimum alicastrum*, native to S. Mexico and central America; it grows in moist forests but will grow equally well in dry areas and provides nuts and foliage fodder (for cattle).

I enclose a pamphlet from the Duche company of California which has something on marketing and growing nuts. I notice that the WANATCA leaflet does not mention the horse chestnut, an extract of the nuts is effective in counteracting circulatory troubles such as varicose veins (I have used it myself) and the effects of damp and cold for rheumatics in cold European climates. Also the candle nut (native here) is missing, although it would only grow in the tropics. You may be interested in trials with Bambarra groundnuts - similar to peanuts but tolerating much drier conditions, from Africa. Also the ye-eb, from the arid regions of Somalia, is not mentioned. It resembles the bush-like growth of jojoba, and like it, is also a legume, not a tree nut.

In your book list, no titles from the National Academy of Sciences, National Research Council, 2101 Constitution Ave, Washington DC 20418, USA, were evident. This institute is helpful and very prompt, and a mine of information. They may be able to help you expand your list of growable nut and tree crops; possibly the hickory - a pleasant North American nut of the Appalachians; also timber trees for arid areas with good potential commercial value.

I believe Perth has an ~~avenue~~ of ~~giant~~ (jelly palms)

which are well established, and have edible fruit. We have quite a number of visitors from W.A. I cannot think of any seeds or plants, alas, that might grow successfully outside the hot wet tropics, except the variety of Caryocar which grows on the drier parts of the Matto Grosso in Brazil (we have only the lowland Amazon variety). Incidentally, the Brazilian Department of Agriculture is trying to establish seed banks in other parts of the world with similar climates, to counteract heavy logging and clearing. They may have dry land varieties of trees suitable for commercial exploitation in W.A.

Our good wishes for the success of your members in '84, and once again thank you for your kind enquiry about our operations.

Sincerely,

Corrine & Gebhard von Keyserlingk

\* Members wanting to read pamphlet, please write to the Editor

W657 1983-9-19

## Nut farms proposed

THE WA Government has issued a prospectus for developers interested in a multi-million-dollar cashew nut industry in the Kimberleys.

It has invited submissions from companies willing to establish a pilot cashew farm to test the viability of a full-scale industry.

The Minister for Agriculture, Mr Evans, said the Government would consider a joint venture if it was required by a suitable developer.

Areas in both the East and West Kimber-

ley region were considered adequate for the soil, water and climate requirements of the cashew tree.

The Government had planted an experimental block of cashews in the Ord near Kununurra. This would help to identify the highest yielding varieties.

Mr Evans said Australia imported all its cashews at a cost of between \$10 million and \$13m. a year.

A copy of the prospectus is available from the Department of Agriculture.

# Jojoba managers seek \$1.8m

By PETER O'SULLIVAN

There is little doubt there is a great future for the jojoba bean that produces oil which is a substitute for sperm whale oil.

There has been a considerable flurry of activity to set up commercial cropping of this bean in Australia with a number of companies raising money from the public.

Advertisements have appeared in Western Australian newspapers including The Sunday Times promoting a new trust offering "Cash Flow Investment Opportunity".

It is being promoted by the former Premier and Treasurer of Victoria, Sir Rupert Hamer, who is chairman.

The promoters have produced a glossy prospectus explaining the benefits of investing in the trust and the uses of jojoba oil, which range from commercial use in lubrication, cosmetics, pharmaceuticals to a variety of industrial uses.

But an examination of the financial statements are quite revealing.

The trust is seeking \$9.1 million which represents 2800 units at \$3.250, but before the investor even sees a jojoba plant put into the ground, a payment of \$1.8 million will be required by the managers to pay expenses and commission for selling agents.

The commission is more than the cost of the land at Emerald in central Queensland, where the jojoba plantation is to be established. This cost is \$1.08 million.

The manager's fee represents 20 per cent of the money being raised.

In comparison, units from Australian Fixed Trust which have a long record of good and stable growth have a fee of 8 per cent.

## No banker

Brokers to public issues normally charge between 2 and 5 per cent.

The prospectus does not mention any broker or merchant banker being involved.

There are some heavy costs in putting together this trust — the prospectus estimates \$286,000. But it is not clear whether this money is reimbursable from the manager's fee or from the Trust itself.

A call from The Sunday Times to the Trust's office in Southport, Queensland, found an independent director, Mr Barry Johnson.

Mr Johnson said there was some justification for the commission of 15 per cent for Australia and 20 per cent for overseas for agents selling units.

He believed nearly all the money — \$1.8 million — would be paid out as commission to salesmen.

He did agree if an investor responded direct to newspaper advertising they could fill in the application form and send it direct to the company without it going through an agent.



Sir Rupert Hamer . . .  
10 per cent.

If this happens, and Mr Johnson said they had been inundated with telephone calls and applications for the prospectus since the advertisements had appeared, there is the possibility of a windfall to the manager of up to \$1.5 million.

Mr Johnson said he had no shareholding in the manager's company.

He did reveal that Sir Rupert has a 10 per cent interest in the manager's company along with two other directors.

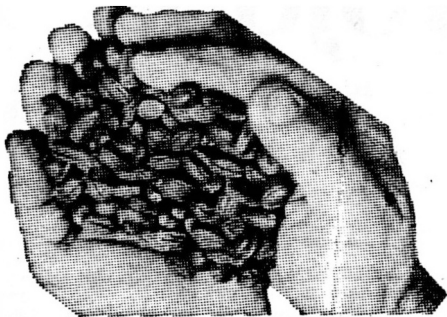
His interest is not stated in the prospectus and he is classed as an independent director.

Despite the advertisement which says cash flow investment opportunity, the prospectus clearly states that no payout is expected for at least five years.

The managers also take 15 per cent off the top after all costs of running the plantation.

VAST 9.10.1983

# Jojoba — it's not just a funny name



10 of the more interesting prospectuses currently doing the investment market funds involve the humble jojoba (pronounced hohoba) seed.

Jojoba Holdings Ltd is offering 500,000 ordinary \$1 shares for a slice of a newly established plantation in South Australia, and Premium Jojoba Plantations Ltd is a unit trust investment, offering 4000 \$1000 units for a similar piece of action in New South Wales.

Both outline potential or extraordinary returns from jojoba plantings and both point to an almost unlimited market for seed and oil from the plant.

Jojoba (*simmondsia chinensis*) is a small shrub, native to the Sonoran desert region of Arizona, California and Mexico.

Its value lies in its

peanut-size seed which can be converted into oil weighing half its seed weight and almost identical to sperm whale oil.

Most of today's jojoba oil production is used in the cosmetic industry as the base for more than 200 preparations, but it also has extensive applications as a motor lubricant and the potential for use as a healthy substitute for oils used in the giant fast food industry.

Most of the oil now produced comes from wild plants harvested by Navahoe Indians in the Californian deserts. Only a few of the bigger plantations persevered with the problems of starting a new crop and

are now poised to reap some benefits from their early struggles.

Jojoba Holdings Ltd has a WA connection in one of its directors — Dr. Jim Chute, former lecturer in the department of soil sciences and plant nutrition at the University of WA.

Dr Chute introduced Jennings Industries Ltd to jojoba when that company was looking to rehabilitate areas damaged by mineral sands mining round Eneabba.

As a full-time employee of that company, he oversaw both trial and subsequent commercial plantings for Jennings and became convinced of jojoba's

potential for developing Australia's semi-arid lands with intensive jojoba farming.

He sees enormous potential in developing WA's semi-arid areas with their "virtually untapped irrigation water in vast natural aquifers."

He said comparisons between WA and California showed WA's tree crop production in 1979 was \$31 million, relatively small compared with the primary production total of \$1400m.

But, in California, tree crops contributed \$2869m. — more than the combined output of agriculture, fishing and mining in WA.

DOUG YOUNG

reports



from 'West Australian'  
Monday Dec. 5 1983

# Exotic diseases costly—Dept

**A BREACH of Australia's plant quarantine barriers could cost WA millions of dollars, according to the Director of Agriculture, Mr Noel Fitzpatrick.**

He said that the introduction of exotic diseases through the relaxation of quarantine barriers could mean the loss of valuable export markets for WA produce.

Consumers would suffer a reduction in the quality of horticultural products and there would be tremendous long-term costs in spraying programmes to combat disease.

Mr Fitzpatrick was replying to a Pemberton nut grower who had complained that the Department of Agriculture's regulations were holding back an industry potentially worth millions of dollars.

Mr Werner Leutert, a former technician with the Commonwealth Scientific and Industrial Research Organisation and the Agricul-

ture Department, asserted that a rare species of hazelnut tree that he imported from America had been subjected to quarantine irregularities.

[The 16 trees have been held by the department in its South Perth quarantine centre for seven months. The department acts as an agent for the Commonwealth Health Department.]

## Conditions

Mr Fitzpatrick said that conditions of entry for plant material were laid down under plant quarantine regulations.

Fireblight of apples and pears—present in New Zealand—was only one of the serious diseases kept out of

Australia by strict quarantine procedures.

Other diseases that represented a threat included: Golde nematode, established in Europe and Asia; citrus canker, present in Asia, Africa South America and the Pacific islands including New Zealand; and plum-box virus, found throughout Europe.

Mr Fitzpatrick said that the department retained a clone of each imported fruit or nut species to avoid duplication of import with the attendant disease risks and costs associated with additional quarantine screening.

The department did not take material from plant imports quarantined for private importers to distribute to industry.

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## West **COUNTRY NEWS**

# Dept rules delay WA nut project

A PEMBERTON nut grower has complained that Agriculture Department regulations are holding back an industry potentially worth millions of dollars.

Mr Werner Leutert, a former technician with the CSIRO and the Agriculture Department, claims that a rare species of hazelnut tree he imported from America is the subject of quarantine irregularities.

The 16 trees have been held by the department in its South Perth quarantine centre for seven months. The Agriculture Department acts as an agent for the Commonwealth Health Department.

According to Mr Leutert (42) the species, filbert, is the basis of a multi-million dollar confectionery industry in the U.S. and there is a four-year waiting list for them.

### First

He says that it is the first time that this species has been imported into Australia after many years of negotiations with an American laboratory.

Mr Leutert has accused the department's senior officers of being over-zealous.

From JOHN BARTLEY  
in Manjimup

A departmental letter sent to the American laboratory in March and signed by chief quarantine officer Jim Fallon says: "At the end of the post entry quarantine period (two years) this department wishes to retain a sample of each variety to ensure that the varieties will be made available to other commercial interests requesting material.

"This is the first time that *Corylus Spp* have been handled in post entry quarantine at South Perth and it is understood that propagation of these plants can be difficult.

"Do you have any advice on methods used and which is the most likely to prove successful?"

Mr Leutert says that the department never

advised him of the letter.

He says that it did not advise him when his trees arrived, which cost him much in postage and telephone calls to the U.S. It also made contradictory statements about the condition of the trees and refused him access to see his property, he said.

Mr Leutert said: "If a private importer brings in material such as this, there is no way they (the department) can distribute it."

He said that he was willing to build up stocks of pilberts and distribute them to horticulturists in the area.

"They are the basis of the American confectionery industry and growers often have to wait up to four years to get supplies. Their value to me is priceless."



Regarded as one of the most promising of the horticultural crops currently grown in New Zealand, babaco, a member of the papaya family, could, it is felt, enjoy the same success as kiwifruits on foreign markets in the years to come.

New Zealand has a history of developing new fruit crops but although many have shown promise in the initial stages, after careful evaluation they have been rejected as unsuitable.

Not so the babaco plant.

Introduced from Ecuador in the early seventies, it has proved flexible and ideally suited to conditions in New Zealand.

It can grow from a small cutting into a fruiting tree within a year and its relative freedom from disease and pests makes it an easy crop to manage.

High yields together with no loss make this fruit highly suitable for orchard production, while harvesting (November to December) coincides with a period when few fresh fruits are available on the market.

It is also ideal for export, its good keeping qualities allowing it to make full use of cheaper seafreight rates to distant markets.

But should the need for airfreight arise, cargo space is freely available at that time of year.

It has, however, not all been plain sailing for the babaco. In fact, it is probably the most expensive plant introduction in New Zealand's history.

Frustrations in obtaining the initial plant material necessitated several expeditions to South America.

And the problems did not end there.

There were more losses when virus diseases struck 20 per cent of the remaining plants.

Furthermore, the slowness of propagation and the total lack of technical information meant that a completely new concept of culture had to be devised.

Nursery facilities were built solely for the production of plants to furnish the needs of the future.

But now that these problems have been largely overcome, the babaco seems to have a good future.

So much for its potential - what does it actually look like?

The babaco is a slender single-stemmed perennial herbaceous shrub or tree reaching a height of some two metres.

Fruits are large (30 centimetres in length, 10 centimetres across and weighing up to one kilo) and have a distinctive five-angled shape.

Each tree bears 25 to 35 fruits a year and has an economic life of about eight years.

Projected tonnage is from 40 to 50 tonnes per hectare at a spacing density of 3000 trees.

The fruit reaches full size about two months before maturity.

The onset of maturity is further recognised by the yellowing of the fruit, first in patches then gradually extending over the whole surface during the following two weeks.

They ripen in progression from the lower fruits, which are usually the heaviest, to those higher up the trunk.

The babaco thrives in a cool sub-tropical climate, free of frosts.

In New Zealand it is felt the fruit growing areas of Northland, Auckland and the Bay of Plenty will prove particularly suitable for commercial production.

Good fertile soil and perfect wind protection are required for maximum yields, so too is adequate rainfall or irrigation.

On exposed sites intercropping may be carried out using, for example, corn or herb-like plants which persist during the winter months.

The fruit is picked when the first signs of yellow coloration occur.

The stalk can be snapped off, using citrus clippers or simply pulled off by lifting the fruit to a horizontal position and then pulling it away from the stalk.

There is, however, a danger in the latter method in that injury may occur to the abscission surface, causing rots later in storage.

When the fruit is picked off the tree, sap or latex will exude from the severed cut and, when the fruit is placed on top of other fruit in a picking container, latex is spilled on the other fruit and messes it up.

As a result, although the best type of picking container has still to be decided on, there is a general consensus in favor of trays holding a single layer of fruit.

The heavy weight of each fruit means in any case that no more than 10 to 15 fruits can be handled at one time by a picker.

The fruits, although firm, should be handled as little as possible.

As far as packing for export is concerned, tray-like containers holding eight fruits would seem to be the ideal.

Standard metric sizes to conform with containerisation will also be essential.

Furthermore, to avoid bruising, each individual fruit will need to have a protective wrapping and obviously information and recipe leaflets will have to be enclosed in each carton.

One of the features of babaco which makes it particularly attractive for overseas markets is its excellent keeping quality.

Even without cold storage the fruit has a shelf life of four weeks.

Furthermore, fruit that has been damaged will keep for a long time, since the damaged part will not spread to healthy tissue.

The breakdown area can simply be cut off and the remainder eaten.

Cold storage will obviously extend the life of the fruit, the optimum temperature being six degrees celcius.

The fruit is best eaten when fully ripe.

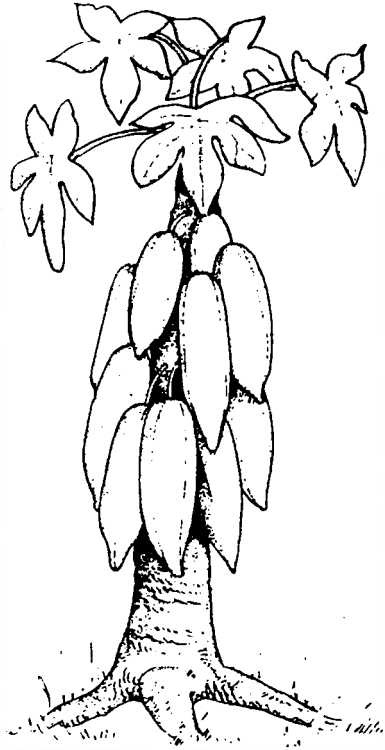
The flesh is reported to be very juicy and slightly acidic, sugar content is low.

The flavor is unique, although it may be described as a cross between strawberry, pineapple and pawpaw.

Being seedless, the whole fruit can be eaten including the skin and it can simply be served on its own or as a tasty ingredient of a fruit salad.

Babaco juice is a popular drink in Ecuador where it is served in the top hotels.

At this early stage in its development, the number of babaco plants available is obviously limited and the high cost of development and the low availability factor will further restrict orchard plantings.



QUEENSLAND FRUIT AND VEGETABLE NEWS

## GOVT WARNING

# Babaco craze could backfire

**BRISBANE:** Fruit growers and investors should be wary of becoming involved in the production of babaco, Queensland primary industry officials warned yesterday.

Babaco, a highly-priced exotic fruit being introduced to the Australian market, resembles a papaw, but its flesh is firmer and it tastes like a combination of strawberry, pineapple and papaw.

Limited supplies of babaco are available in Australia and in Brisbane some greengrocers have been selling slices for up to \$5.

It is grown in New Zealand, but Queensland Department of Primary Industries officers fear that local investors may get their fingers burnt for both agricultural and economic reasons if big plantings are established.

### Claims

The department's senior horticulturist, Mr Graham Jamieson, said yesterday that attempts were being made by some tax-shelter companies to at-

tract investors in babaco with claims of high prices and a lucrative export market, mainly to Japan.

There a babaco could be sold for as much as \$47.

But as travellers to Japan knew, top prices were also paid for exceptionally high quality fruit of all kinds with big peaches retailing for several dollars each.

"Queensland's fresh-fruit exporters have found Japan to be a tough customer and are already fighting to allay Japanese fears of introducing Queensland fruit fly there," Mr Jamieson said.

"Introducing a new fruit could make the fight more difficult."

Apart from the uncertainty of the export market, the babaco itself was not easy to cultivate.

The plant, a native of Ecuador, was a nat-

ural cross between two papaw-related species.

It would not produce true-to-type seedlings from the few seeds it produced, Mr Jamieson said.

The department also reminded potential babaco growers and investors they should not expect the present high prices to be sustained.

### High

The department's agricultural economist, Mr Ralph Donnet, said that prices quoted by at least one tax-shelter company in NSW were optimistically high.

"If the venture proves successful, prices will fall as supply increases," Mr Donnet said.

"People thinking of investing in a scheme promoted as having tax advantages should realise they will be paying taxes on profits earned if the scheme succeeds."

# The White Sapote

by Paul Recher

What looks like a Granny Smith apple, has the texture of a perfect Avocado, and tastes of pear, peach, banana, and custard apple? The answer is a native tree of the Central American Highlands (500 to 1800 m) called the White Sapote.

Botanically it is *Casimiroa edulis*; the species is in the family Rutaceae, which also includes Citrus. Their mutual affinity can be seen in the seeds, as those of *Casimiroa* are a replica of an orange pip magnified by ten.

This handsome tree reaches a height of 15 m, and is drought resistant. It does not do well in areas subject to heavy rainfall, and in particular hates lowland humid tropical conditions.

The White Sapote has been distributed around the world, and is fruiting successfully in areas such as California, Florida, the Mediterranean, the drier parts of Hawaii (Kona and Pohoaho), Northern India, Florida and Sydney.

The tree can be evergreen or sporadically deciduous, whereby even in the warmer months it will suddenly decide to shed its leaves for a fresh batch.

The White Sapote is well known for its spectacular yields, with several hundredweight being commonplace. The outstanding example is the cultivar "Chestnut", which in 1971 bore three tons of fruit.

This delicious fruit tree caught the imagination of Californian nurserymen and horticulturists more than fifty years ago, when a number of selections were made, including the everbearing variety "Suebelle". Some of these cultivars were imported into Australia as long ago as 1937 when at least one nursery offered them for sale. During the past six years a large number of the extant varieties available in California, Florida and New Zealand have been imported into Australia — "Blumenthal", "Vermont", "Vista", "Wilson", "Dade", "Pike", "Lomita", "Te Puna", "Henrickson", "Denzler", "Ortego", "McDill", "Golden Globe", etc.

The White Sapote is adaptable to a wide range of soils preferring a slightly acid sandy loam. However, it grows well on any well drained soil type including Florida soils with a pH of 8.5. It is totally intolerant of any degree of waterlogging.

Insect pests are few. Black Scale is a common infestation which can be controlled simply with a spray of white oil diluted 1:80. If the infestation is heavy a follow-up spray three to four weeks later is required. Unfortunately, this year has revealed that fruit fly will sting the fruit while it is still hard.

Tree training is essential. Most varieties if allowed to grow on their own accord will grow their single leader with no branching for four metres or more, eventually recurving under its own top-heavy weight. It is necessary to cut back the leader

by one third when approximately one metre high. Subsequent branches will have to be treated in a similar fashion. After three to five such prunings the *Casimiroa smartens* up and branching occurs at the appropriate intervals, maintaining the desired symmetrical crown.

A related species, *Casimiroa tetrameria*, the "Woolly-leaved Sapote", produces similar fruit, with a stronger, more resinous flavour. It seems likely that some selections are the result of interspecific hybridization between these two *Casimiroa* species. The variety "Max Golden" is known to be a selection of *C. tetrameria*.

In spite of its deliciousness and tremendous yields only very minor commercialization has taken place. This has been partly due to a lack of an organized, concerted effort, but is primarily due to the short shelf life of the fruit. Even though the fruit can be picked rock hard from the tree and still develop full flavour, once it starts to soften (three to four days after harvest) the fruit must be consumed within seventy-two hours. Furthermore as the fruit softens unsightly bruises show up. In spite of this several small orchards are being planted. Perhaps the advances in post-harvest handling will help to overcome the shelf-life problem.

From Perth to Adelaide, and on into the drier tropical zones of Australia *Casimiroa edulis* is a must for any backyard enthusiast. One tree will feed an entire block.

Trees are available from a number of nurseries, including my own, and also:

Dalley's Nursery, Kyogle; David Higham, Ravenshoe, Qld; Berry Spooner, Eltham, N.S.W.; Fitzroy Nursery, Rockhampton.

Also others which I apologise for not knowing, but if they write and tell me I will mention them in my next article. Depending on nursery and cultivar prices range, for grafted trees, from \$7.60 to \$15.00.

Note: Paul Recher with his wife run Fruit Spirit Research Nursery and Garden, at Dorrroughby, N.S.W. 2480. There they have 43 acres of warm subtropical land devoted to the assessment of a wide range of plants from all around the world, their speciality being subtropical and tropical fruits and nuts. In the past five years they have planted more than 800 species, of which over 200 have edible parts. Some of these have come from such diverse places as Ecuador, Malawi, the Ivory Coast and China. The nursery is one means by which this considerable trials programme can be financed. Lines offered in the nursery currently include *Dombeya rotundifolia*, *Douyalis rhamnoides*, *Mimusops hexandra*, *Oncoba routledgii* and *Myrciavia cauliflora*.

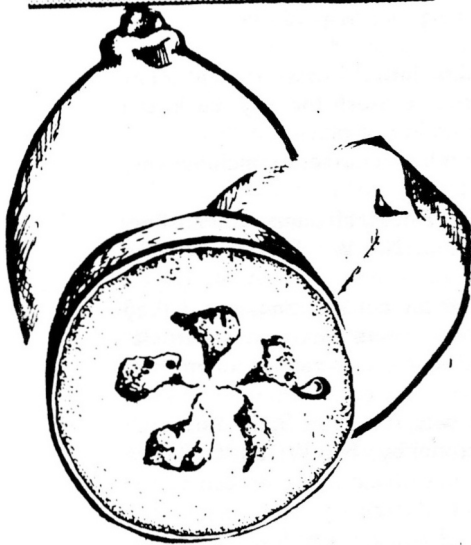
"GARDEN CUTTINGS" ARTICLE

Queensland Fruit and Vegetable News

The fruit was named after a Brazilian botanist called Don da Silva Feijoa.

It is now beginning to be commercially cultivated in New Zealand although it has

## FEIJOAS



*Reprinted from EUROFRUIT journal.*

been growing there since the beginning of the century.

The feijoa is often mistakenly identified as one of the guava family.

It was first introduced into Europe, especially the Mediterranean area, in the 1890s and was planted in California about 1900, later appearing in New Zealand.

Very soon popular varieties began to develop — the Coolidge in California and the Triumph and Mammoth in New Zealand.

Today the Triumph and Mammoth are the varieties most commonly found in New Zealand.

They have the best flavor but are thin-skinned.

It is the Triumph variety which is most favored for commercial plantings.

The fruit, which is green in color, is large and oval with an uneven but firm skin and has an excellent sharp flavor.

The Mammoth variety has a smooth skin and is more rounded than the Triumph.

This variety matures early, but is softer and therefore more difficult to handle.

Other varieties include the Magnifica, which is the best for export as it has a thick skin and is therefore better for transporting, the Grace, the Coolage, the Choiciana and the Superba.

There are in addition to these hundreds of unknown seedlings.

The Coolidge from the USA has a tendency to produce smaller, more cylindrical or pear-shaped fruit.

All varieties have a limited shelf life.

When the large number of new plantings come into full production there will be too great a volume of feijoas for New Zealand to absorb and so it will be necessary to open up more overseas

export markets for both fresh and processing fruit.

Feijoas are currently processed in New Zealand in the Bay of Plenty.

In New Zealand, the feijoa is even more popular than kiwifruit.

It has a strong aromatic flavor and can be eaten fresh simply by removing the skin or cutting it in half and scooping out the pulp.

It is also often bottled as a preserve, frozen or made into jam.

Feijoas are high in vitamin C and low in calories, similar to oranges.

Such is the confidence in the popularity of feijoas that commercial plantings increased by 50 per cent last year and similar increases are anticipated in years to come.

The feijoa is highly adaptable to almost any growing conditions and could easily be cultivated in many countries, but outside New Zealand it is prone to fruit fly and could, therefore, be unsuitable for commercial cultivation.

In New Zealand it is grown in most mild areas of the North Island, particularly around the Bay of Plenty, and in the warmer regions of the South Island.

It cannot tolerate frost below minus nine degrees Celcius.

It can be cultivated on a wide range of soil types, even those not suitable for more sensitive fruit such as avocado and kiwifruit.

However, the feijoa does fare better in good soil, especially if it is well aerated.

The tree starts bearing, depending on whether it was grown from a cutting or a seedling, four or seven years after planting.

The wood of the feijoa tree is quite brittle and so it should be grown in sheltered places or protected by windbreaks.



The tree generally grows to a height of about four metres and has beautiful flowers during blossoming.

Approximately 360 feijoa trees can be grown on one hectare of land, and for best results the trees should be pruned regularly.

They can be protected from pests and disease by the same spraying methods used for kiwifruit.

The fruit remains small until the final six weeks before harvesting when it swells rapidly, and when fully mature it falls off the tree.

Feijoas are normally harvested from March to May in the Southern Hemisphere and should be picked before they fall off the tree, but it is extremely difficult to determine when they are ripe enough.

One indication of maturity is a slight yellowing and dull surface on the flesh and when lightly pulled the fruit should come away easily from the tree.

It is imperative that the fruit is ripe enough when picked because it will not ripen at all after harvesting.

During packing, the fruit must be very carefully handled to reduce bruising to a minimum.

For local market supply the fruit is usually packed into boxes or cartons with a net weight of about 18 pounds, but jumble-packed 40 pound cartons have recently been gaining in popularity with both growers and retailers.

Fruit for export is air-freighted to retain its freshness and on arrival should have a shelf life of about seven days.

Feijoas can be stored for a very limited period if kept at a temperature of three degrees Celcius (37 degrees Fahrenheit)

Export fruit is packed in cardboard trays with moulded plastic inserts and is covered with a paper cushion for protection.

Turners and Growers Ltd, one of the main companies involved in the New Zealand fruit business, enclose recipe leaflets in every carton to educate buyers on the best uses for this unusual fruit.

They export a maximum of 20 tonnes, equivalent to 4000 trays, and their main markets are Japan, USA and Australia.

Small quantities also go to Europe.

Auckland Export Ltd also export feijoas and are currently conducting a trial promotion in West Germany to test market reaction and prospects.

Commercial cultivation of feijoas is still in its infancy — a lot of research is needed, particularly into more efficient harvesting methods.

However, the feijoa is a delicious fruit and could soon gain worldwide popularity.

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# **West Australian Nut & Tree Crop Association**

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*Incorporating the West Australian Nutgrowing Society*

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