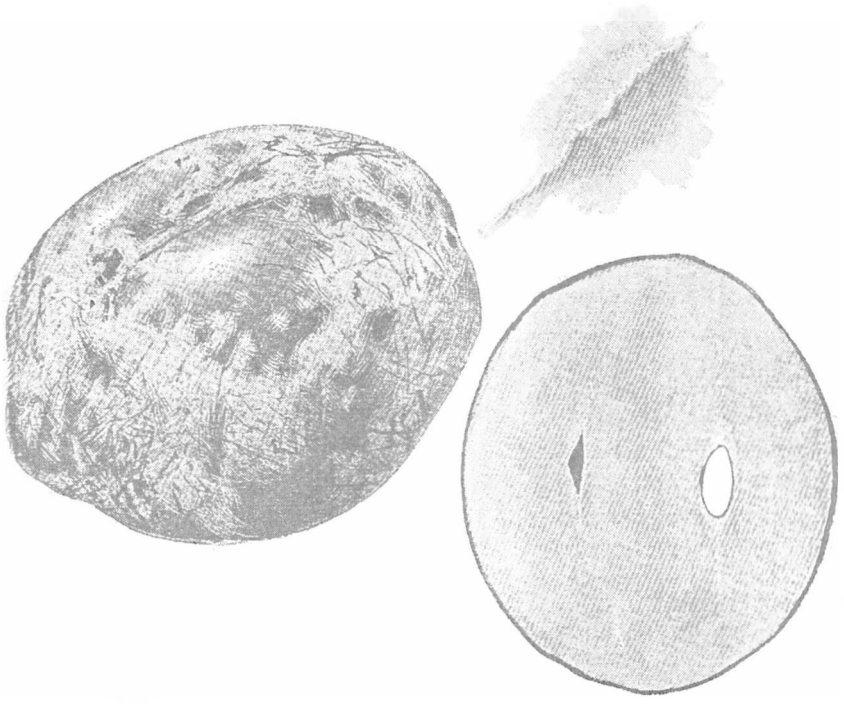
WANATCA

Quandong

magazine of the
West Australian Nut & Tree Crop Association (Inc)
www.AOI.com.au/wanatca

Second Quarter 2005 • Vol 31 No 2
ISSN 0312-8989 • $5.00



The Davidson Plum, *Davidsonia pruriens* (See: About the Cover, p. 2)

Don't miss the Next WANATCA General Meeting:

7.30 pm, Tuesday May 17, 2005.

At our next meeting we are fortunate to have Rob Harington on the topic of:

All about Marulas

Rob Harington was brought up in the Eastern Transvaal area of South Africa and is an enthusiast for development and use of this versatile crop tree, which he remembers fondly from his youth.

The Marula, botanically *Sclerocarya caffra*, is in the Anacardiaceae family which also includes the Mango. And like the mango, it has a fruit which has been enjoyed by humans and animals back into geological history. Rob has worked out a method giving close to 100% germination which he will disclose at the meeting.

This meeting is at Kings Park Headquarters as usual. It's a unique opportunity to find out more about this vital topic. See the attached flier and the article on pages 16.

Late enquiries to 9250 1888 please. Rob Harington's contact: 9390 0616.

In This Issue

Avocados a welcome alternative 3
Germinating coconuts 4
WA — World food bowl? 5
Cape gooseberry — almost forbidden fruit . 6
Sandalwood oil settles the stress 8
Bagging fruit 9
The New Crop Industries Handbook CD .. 10
The Davidson plum 11
Davidson Plum 12
Davidson's Plum (Davidsonia pruriens) 14
"Bring-and-Buy" news 15
Marula to make its mark in WA? 16
Dramatic growth uncorked 17
The Olives in WA 2005 Report 18
Carob tree production in China 20
Importing tree crop seeds into WA 22
Sapodilla — terrific commercial potential 24
Nevada Pine Nut harvest breaks record..... 25
World has a taste for our grapes 27
Big year ahead for agriculture schemes..... 28
What Fungi Do for Soil 29
News from Dennis Ting 30
Eliminating squirrels 30
Plan for organic olive grove venture 31

About the Cover

The cover drawing of the Davidson Plum, *Davidsonia pruriens*, is from Wendy and William Cooper's marvellous book *Fruits of the Rainforest: a guide to fruits in Australian tropical rain forests.* A new edition of this book has appeared under a slightly different title. See also pages 11-15 in this issue of *Quandong*.

[West Australian / 2005 Feb 23]

Avocados a welcome alternative

The avocado's days as a mere supplement to the lower South West's traditional fruit and vegetable industry is over, with more than 40 growers contributing to the region's multi-million-dollar avocado industry.

Delroy Orchards' owner Russell Delroy was one of the pioneers in avocados, planting the first of his 45,000 trees in 1987.

Originally from a sheep and wheat farming background, Mr Delroy saw the value of New Zealand's avocado industry while he was studying horticultural science there and realised he could do the same thing in Australia.

At full production, he expects to produce about 10 million avocados a year to supply markets in Perth, Adelaide, Melbourne, Sydney and Brisbane.

"In the past five to six years, there has been a rapid increase in avocado growing, especially around Manjimup and Pemberton, heading towards being an industry worth $20 million to the region," he said.

"For many people, it has been a very welcome and useful alternative to some of the vegetable industries."

Avocados in the South-West

Delroy Orchards operations manager David Hitchenor shows the avocados which are becoming a growing concern in the South West.

Quandong Links to ATCROS

Many of the articles, advertisements, and news items in Quandong refer to organizations and people who are listed in the Directory section of the ATCROS Web Site, which is at:

http://www.AOI.com.au/atcros

In this issue, items underlined in the text have Atcros reference numbers listed at the end of an article or elsewhere close by. This is so that readers can get more contact details.

ATCROS usually lists name, address, and phone numbers, also fax, e-mail, and web page details where available.

Quandong: Atcros ref. <A1466>.

mature between December and March, later than the Eastern States' season of May to August or August to October in Perth.

And as eating habits change to include more salads, avocados have evolved from a luxury item to a staple.

"Consumption is growing quite quickly in Australia and certainly during our supply period over summer we cannot keep up with the demand," Mr Delroy said.

"One of my favourite dishes is avocado sliced with mango as a dessert, but it is delicious with any sort of chicken.

"It is one of the only fruits which is a complete balanced diet — high in oil but with all the good oils."

— Tiffany Laurie

[Rare Fruit News Online / 2005 Mar 15]

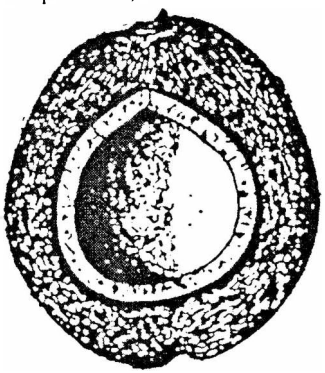
Germinating coconuts

I live on Queensland's sunny Gold Coast in Australia where I grow many tropical fruits... grumichamas, jaboticabas, black sapote, white sapote, wampee, caimito, mango, lakoocha, rollinia, jackfruit, papaya, guavas and coconuts.

Even though at my latitude (28 °S), it's considered marginal for some tropical fruits, no frost occurs here and the average minimum for winter is 10 C with a high of 20 C. We have long hot summers that make up for the short cool winter.

I have developed a reliable way to germinate coconuts, which I gather from 15+ year old trees from around the area.

I place each nut in a pot with some potting mix and chicken manure and water well. The chicken manure creates bottom heat as it decomposes, aiding germination. During the cooler months from May to September, I place a plastic bag over the top tying it around the pot to create a mini hothouse.



During the warmer months from October to April, I germinate coconuts directly in pots as well as in a warm sandy patch, if I have a plentiful supply of nuts. Keeping the coconuts well watered during the germination period is very important.

Coconut Palms are heavy users of potassium and chlorine so fertilizing with potassium chloride (KCL) is beneficial to strong healthy growth.

Even though everyone says, it can't be done this far south I'm determined to get a breadfruit to grow. My current experiment is with a 'Samoan Gold' variety that I had sent down from Tropical North Queensland (18 °S). I pamper it with the best of everything ... position, fertilizer, water so I hope it will prove the doubters wrong.

Each year I make a lot of jam from my jaboticaba and grumichama trees, which thrive in this climate. My black sapote also is a prolific bearer ... I whip the pulp with a little cream — mmmm yummy!

— Tony Robinson

<crusoe@bigpond.net.au>

Rare Fruit News Online: A3510.

WA — World food bowl?

Some 25 years ago, an American orchardist who was visiting WA told me that he thought WA could become "one of the great food bowls of the world".

As the only first-world, developed country with extensive tropical areas, Australia has a head start in such matters. Western Australia, the largest State in the world, is also the only such territory which extends from the tropics down to temperate regions.

So WA has a uniquely favourable combination of conditions to achieve 'World Food-Bowl' status. Its natural land assets provide the background, and its people skilled in organizational, financial, and technical fields can provide the impetus to bring about success in this regard.

So how are we doing, are we getting anywhere in a competitive and increasingly globalized scenario?

The answer seems to be "Yes, but there is much more to be done". Many areas of advance, development, and improvement still lie open for tackling, others are underway, and a very few are now up with the world leaders.

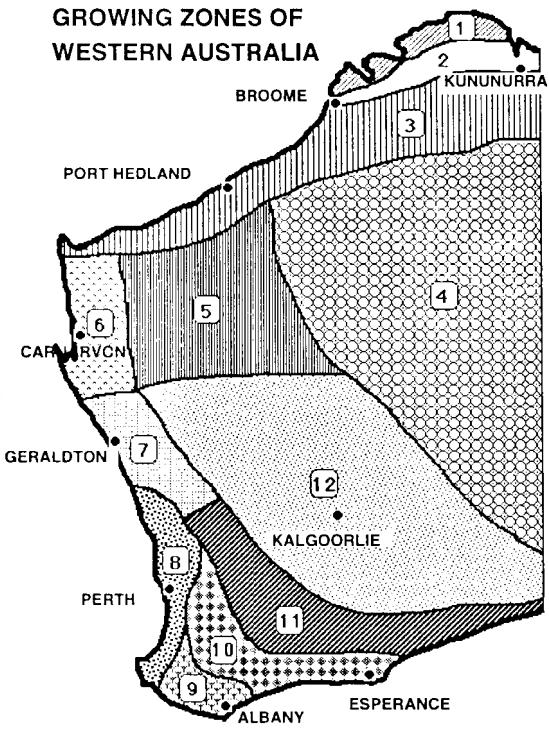
Also 25 years ago, a Frenchman importing fine china into WA came to me with a suggestion that the State would be the ideal place to develop a major olive industry. He had all the supporting evidence from his background in France and elsewhere in Europe, and I was glad to do what I could to push the idea.

But it wasn't until perhaps five years later still, that the infant industry began to accumulate enough momentum to take itself through to fruition. Why do some crops succeed, and others stumble or even fail?

It seems to me that the most important factor is the existence of an interested, persistent 'crop champion' with access to resources. These crops are not brought to success by governments or by corporations, who may be very helpful in the later stages but tend to stifle new crops and have no equivalent to the enthusiasm of the individual.

The individual 'crop champions' are most often not 'professionals' in raising crops, but have succeeded in other areas, perhaps medicine, or engineering, or general commerce. They have realized the potential, and the value to Australia, of a new or latent

(from www.aoi.com.au/wanatca/membership.pdf)



crop, and have the professional expertise to gather information on the crop, private resources to enable them to do basic trials and research, and the ability to publicise their work and cooperate with other enthusiasts.

Pleasingly, these crop champions are usually vitally aware of the importance of sustainable and environmentally friendly approaches to land use. They also often have the technical background in such areas as computer monitoring and advanced diagnostic testing to apply inputs out of the reach of people in less developed countries.

In *Quandong* we always seek to provide news and data to advance such crops, which are at every stage, from acknowledged commercial success down to earliest beginnings. In the last 40 years, some crops in WA, such as wine production, have run the full cycle and we are now up with the world leaders.

Others, such as olives, are nudging this stage. With an ancient crop such as olives, we have obviously had the advantage of gathering information from elsewhere in the world, but it is pleasing when we can not only match expertise elsewhere but perhaps improve on it.

Commercial tree crops such as mangos, avocados, macadamias, and many other fruits and nuts have been successfully installed using outside sources, but still need a lot of local input to get to the "world's best practice" level.

Jujubes and pomegranates are off to a promising start, but will need continuing support and research to achieve their potential as major WA crops. Marulas are right at the beginning of the process.

So, the field is still wide open, and everyone can help. The backyarder playing around with his favourite unusual fruit can be just as important as the commercial orchardist, the financial expert, or the learned scientist.

And the visiting American orchardist? Why, he settled in Western Australia, married an Australian girl, and they have raised two young Australians. His name? Our local carob expert, Henry Esbenshade.

— David Noel

[West Australian / 2004 Dec 3]

Cape gooseberry — almost forbidden fruit

Growing fruit is too much trouble for most gardeners. All that effort of pruning, fertilising, watering and pest control hardly seems worth it when fruit is so cheap down at the supermarket.

There is one plant, though, which is ridiculously easy to grow and yet whose fruit is seldom on sale. It is the Cape Gooseberry, *Physalis peruviana*.

This plant is so easy to grow that it soon becomes a weed. It and a few very close relatives have also become established as weeds in parts of WA, usually in richer, moist soils such as creek lines.

As the botanical name indicates, the plant has its origins in Peru but it has been grown in warmer parts of the world for at least 200 years. In the 19th century, it was a major crop of the Cape of Good Hope region in South Africa, the fruit being exported to England for jam making. It came to us via South Africa, hence the "Cape" Gooseberry.

Of course, it is not a gooseberry at all but

neither is it a cherry, as another common name, ground cherry, might suggest. It is actually a relative of the tomato.

The Cape Gooseberry is a fast-growing, short-lived perennial which normally grows to about a metre high but may sprawl a few metres across. It has stout stems carrying large green hairy leaves and small yellow flowers tinged with purple.

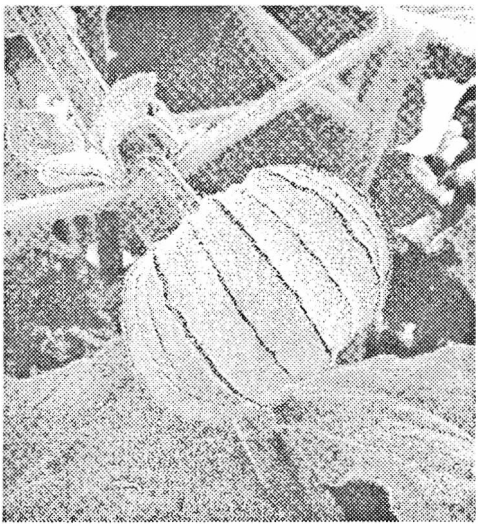
As soon as the flower is pollinated, the leafy bracts underneath it begin to extend around the developing fruit, quickly totally encasing it in a Chinese lantern-like balloon. As the fruit grows so does the lantern, until at maturity the lantern turns light brown and drops to the ground, still containing the fruit inside.

The fruit is like a miniature round tomato, green at first then turning orange as it ripens. Typical of the Solanaceae family, the immature fruit is loaded with alkaloids which make it bitter and inedible. When near ripe, the fruit is still quite tart. It is not until it is fully ripe that it becomes sweet, which is usually not until after it has fallen to the ground. The lantern around it protects it from insects.

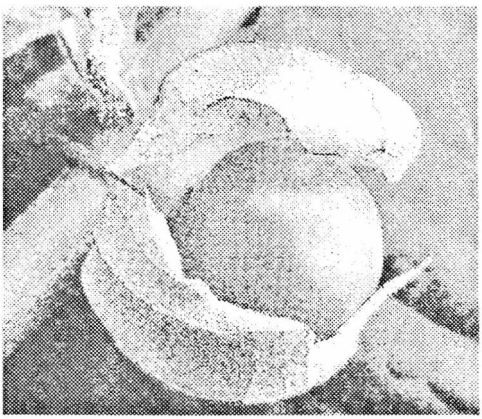
The Cape Gooseberry plant grows about a metre high but may sprawl a few metres across

All Cape Gooseberries need is nice rich soil, a bit of general-purpose fertiliser, regular watering and plenty of sunshine. Depending upon the site, they may need to be staked and pruned into shape.

Frost can cause severe damage but there are few serious pests, though the plants can be attacked by two-spotted mite in summer and may also suffer from tomato wilt.



Immature fruit is bitter and inedible



The mature fruit is like a miniature round tomato, turning orange as it ripens

A flower with its yellow and purple petals stands out among immature fruit

One of the characteristics that makes this plant a weed is that it grows easily from seed. So if you want to try growing one, get hold of some fruit from a friend or the fruit shop and chuck a few on the ground where you want the plant to grow.

— ***John Colwill***

[West Australian / 2005 Mar 31]

Sandalwood oil settles the stress

WA sandalwood oil, dubbed "wooden gold", is poised in a growing market as a natural remedy to de-stress cranky babies and toddlers.

Although the oil taken from the timber *Santalum spicatum* has been used for thousands of years by Aboriginal communities, it has only recently found a niche in Western countries as a natural sedative to calm babies and frazzled mothers.

This adds to its already heralded benefits, including a reputation as an aphrodisiac. Some studies also suggest it is far more effective as an antiseptic than tea tree or eucalyptus oils.

Alternative-medicine therapists say sandalwood oil relieves anxiety and stress and helps people sleep but also improves concentration. It can be used in an oil burner, inhaled or applied to the skin.

Joss Goulden, of South Fremantle, mother of Slaimaan, 16 months, said she had used sandalwood oil to massage him since he was a newborn.

The Australian Sandalwood Oil Company, based at Mt Romance near Albany, is the world's biggest supplier of local sandalwood oil.

Warrick Welsh, general manager of its consumer division, said sandalwood oil helped with the release of the "feel-good" brain chemicals serotonin and dopamine.

"One of the unique things about sandalwood oil is that it has natural sedative qualities as well as anti-bacterial and anti-inflammatory effects," he said. "But one of the biggest markets now is in people wanting

to de-stress using natural remedies rather than drugs.

While sandalwood had a reputation as being a very expensive oil, most brands range between $22 to $30 for a 10 ml bottle, so it's a lot cheaper than other ways of reducing stress."

— Cathy O'Leary, Medical Editor

[nafex@lists.ibiblio.org / 2005 Mar 7]

Bagging fruit

I have been meaning to write up my experience with bagging apples. I would say my results with this technique were a success, similar to Stefan's.

I would recommend that anyone interested in this technique should visit Stefan's website using the link he provided: http://www.css.taylor.edu/~sbrandle/apples.

Some people kept detailed statistics of their bagging experiments. I was keeping detailed records also, but stopped doing this when the results were clear... bag on apple = perfect fruit, no bag on apple = worm holes and funny shapes. Last summer was an unusual weather year in Seattle, and scab was not such a problem. It seemed like the only scab I had was on unbagged fruit, but scab really wasn't an issue like it usually is.

My technique was the following. I used cheap clear plastic sandwich bags and twist ties. I put them on when the apples were 12-25 mm in diameter. I could put them on at a rate of about 3 bags per minute. Due to parenting demands, my bagging routine involved daily visits to my trees in during which I applied up to 10 bags in a session.

I continued doing this daily routine over a 2 week period. When placing the bags on the fruit, I tried to put them on with maximum room to grow. The plastic bag material can stretch without tearing, especially when heated by the sun. I had some huge Mutsu apples that probably stretched the bag by 50% more than its starting volume. I had a tree of shrink-wrapped apples by harvest time. I was worried about the apples cooking inside the bags, but I left them on the tree to see what would happen.

At harvest time, I found the texture to be excellent and the colour was also good. The only problem I had were bags that filled with rainwater. Those apples split their skin, but never rotted. I would recommend cutting a drainage hole when a bag starts to accumulate rainwater. Most bags were fine without any ventilation or drainage holes. Things were working without punching holes in the plastic bags, so I left them that way.

I have been surprised at how well these bagged apples keep. I ended up leaving them in their bags at harvest time. I still have a few in the fridge. The quality continues to be good. By this time of year, my unbagged fridge-stored apples are always shrivelled up and mushy. The bagged apples continue to have crunch, but I must admit they are not as snappy as they were last October. It is interesting to note I haven't lost one bagged apple to rot in all these months of storage.

I will definitely bag again this year — a simple organic way to produce high quality apples that store well.

— ***Mark Lee, Seattle*** (USDA cold zone 8a, AHS heat zone 3) <markl@nytec.com>.

"He that plants trees loves others besides himself"
(old English proverb)

The New Crop Industries Handbook CD

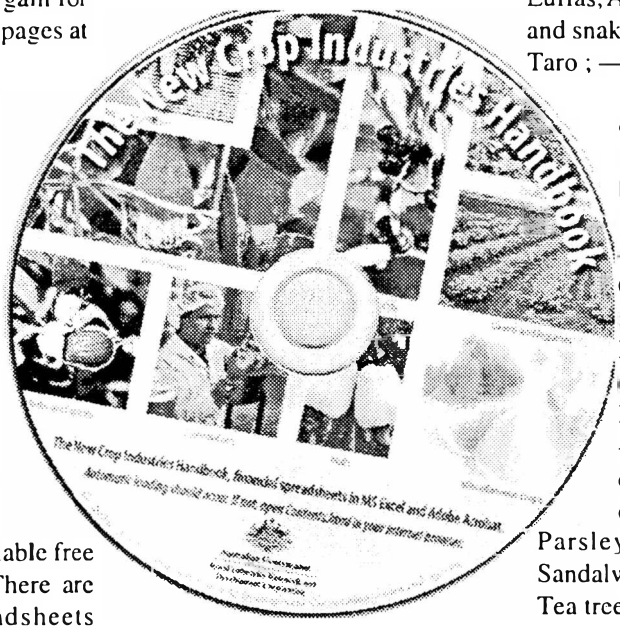
— bargain of a lifetime!

RIRDC, The Australian Government's Rural Industries Research and Development Corporation, were active at the ACOTANC-94 Conference last September.

They had information on their publications, including an upcoming CD version of their *The New Crop Industries Handbook*, and I ordered a copy.

The printed version of this book had been available for some years, and was an excellent source of information on up-and-coming and less usual crops, a bargain for about 600 full-colour pages at around $60.

Now the CD version has arrived, with updated versions of all the articles, and it costs just $15, including postage in Australia! That's the best bargain around.



The extensive collection of crops is covered by individual articles in PDF format — you read and/or print them with Acrobat Reader (available free for any computer). There are also some spreadsheets included in Excel format, and some explanatory files in HTML, read by any browser.

The collection is easiest opened with a Windows operating system computer, though a Macintosh can also read all the PDF files.

Here is what the CD contains:

Contents of the book's sections:

Introductory section

Asian vegetables ; —Asian brassicas ; —Bitter melon ; —Burdock ; —Chinese waterchestnut ; —Culinary bamboo shoots ; —Daikon ; —Edamame ; —Japanese ginger ; —Japanese taro ; —Kabocha ; —Lotus ; — Luffas, Asian melons and snake beans ; — Taro ; —Wasabi

Essential oils ; — Blackcurrant bud oil ; — Boronia oil ; — Chamomile ; — Eucalyptus oil ; — Fennel oil ; —Lavender oil ; —Mint oils ; — Parsley oil ; — Sandalwood oil ; — Tea tree oil

Native foods ; —Overview ; —Bush tomato ; —Introduction ; —Lemon myrtle ; —Native citrus ; —Native pepper ; — Quandong ; —The Davidson plum

Nuts ; —Cashews ; —Hazelnuts

Fruits and berries ; —Durian ; — Lychee and longan ; —Minor tropical fruits ; —Rambutan ; —

Grains and legumes ; —Azuki and kintoki beans ; —Guar ; —Lima beans ; — Sesame

Herbs and spices ; —Capers ; —Coriander and fenugreek ; —Culinary herbs ; —Ginseng ; —Jojoba ; —Medicinal herbs ; —Paprika

Wildflowers ; —Banksia and other proteaceae ; —Blandfordia ; —Boronia ; —Eucalypts for cut bud, flower and foliage production ; —Flannel flower ; —Kangaroo paw ; —NSW Christmas bush ; —Smokebush ; —Thryptomene ; —Tropical rainforest foliages ; —Waxflower

Financial models ; —Active spreadsheets.

As an example, I looked up the article on Davidson Plum, which ran to 8 pages. Following is the text of the first page, and two other articles on Davidson Plum from other sources.

The CD can be ordered under item number C04/002 from RIRDC by phone 02-6272 4819, fax 02-6272 5877, or online (useful for those overseas) at www.rirdc.gov.au/eshop, or email: publications@rirdc.gov.au. Don't miss this one!

— David Noel

The Davidson plum

Introduction

The Davidson plum *(Davidsonia* spp.) is an "undomesticated" Australian native rainforest fruit well suited to commercial production.

It offers new ingredient value to the global food industry and its versatility of use gives it opportunities in many food market niches. The fruit, whilst versatile, is constrained by market unfamiliarity and thus greater market risk. Present production outweighs demand.

There is a need for improved production efficiencies and technologies, as well as improved postharvest processing techniques.

Overall, the greatest challenge is better marketing and greater adoption of the fruit in the food manufacturing sector. Being very sharply acid, *Davidsonia* does not have access to a fresh food market.

The fruit is a processing fruit and must compete on price with processing-grade fruits of other species. These other fruits can be cross-subsidised by fresh produce sales to an extent and hence come onto the processing market at or below the cost of production.

Australian production of the *Davidsonia* is very limited but, as long as the market identity of the fruit continues to be "Australian native", production will benefit. At present overseas production seems entirely limited to enthusiasts and researchers.

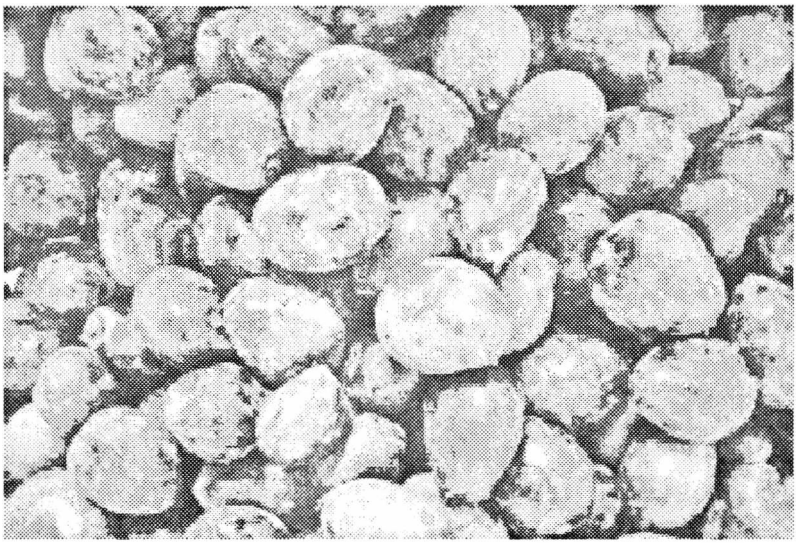
Market demand is perhaps the most significant limitation at present, with many growers over the past four years having difficulty selling their crops. The Davidson plum is a sour, plum-like fruit used in jams, sauces and preserves, cordials, dairy products, confectionery, wines and liqueurs.

Its tart flavour and intense burgundy colour lend the plum to many uses in food manufacturing industries, particularly those seeking to portray images of Australiana, Indigenous Australia, wilderness, nature or rainforest.

Current market demand is around 5,000 kg/yr and buyers estimate growth at 5–20 % a year, although most are relatively young businesses and trends are difficult to assess.

Current production is predominantly in the sub-tropical coastal regions of New South Wales and tropical north-east Queensland.

As with any new crop, a broad range of



Davidson plums (D. jerseyana)

skills is required to be a successful *Davidsonia* grower. In many cases, due to poor market demand, value adding and marketing skill and commitment are necessary. A strong entrepreneurial ability is advisable.

Sound horticultural knowledge and practical abilities are needed. There is a need for technological innovation in the industry and keen improvisational and observational skills. Growers can also need to be in a position to weather financial loss due to market volatility.

— Anthony Hotson

[Australian Bushfoods magazine / Issue 11, Jun-Jul 1999 — Adapted from the 'Bushfood Starter Kit']

Davidson Plum

Davidsonia pruriens var. jerseyana (NSW Davidson Plum) & *Davidsonia pruriens var. pruriens* (Queensland Davidson Plum). Family: Davidsoniaceae.

General notes: Botanically, *Davidsonia* spp. are not related to the true European plums but the fruit has some similarities in size, form, colour and flavour. There are two popular species, native to rainforests of subtropical and tropical Eastern Australia, *Davidsonia pruriens* and *D. jerseyana*. The smaller northern NSW *D. jerseyana* is probably the most frequently planted in commercial orchards. The fruit is more flavourful but is smaller than *D. pruriens*. *D. pruriens* has larger fruit than *D. jerseyana*. Perhaps not as 'flavourful' as *D. jerseyana*, it makes excellent jams, jellies, sauces, etc. Both have a sharp, rather refreshing taste.

Fruit Harvest period: March - July. Also given by Les Hiddens as Aug - Jan. In Lismore (N. NSW): Dec-Jan. In N. Qld: Feb-May.

Atherton (N. Qld): Apr-Sept.

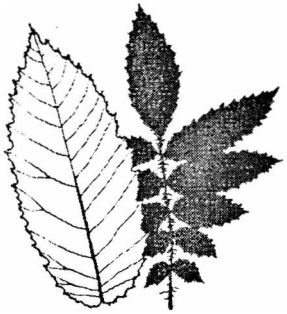
Years to maturity: 3-5. Small to medium tree, growing 6-8 m

Natural Distribution/Growing conditions: D. pruriens occurs naturally in lowland and upland rainforest in NE Queensland. D. jerseyana occurs naturally only in the Tweed and Brunswick valleys, on the far north coast of NSW. It usually grows as an understorey in lowland subtropical rainforest and wet schlerophyll forests, in soils of basaltic and sedimentary origin.

Climatic/microclimatic conditions: Production is ideally suited to regions with a rainfall exceeding 800 mm per annum, preferably distributed throughout the year. They prefer shelter from dry, hot and cold winds and require adequate windbreaks and shelter as young trees. *D. jerseyana* can survive temperatures down to -5°C. but extended periods below -3°C can cause leaf burn in young trees. Young trees tolerate no frost. Small *Acacia* spp. have been used to provide protection to young trees in frosty sites.

Management reference: Davidsonia spp are adaptable to a range of soil types, but prefer a friable soil high in organic matter. Regular applications of rich compost are suggested. Preplanting soil treatments include: gypsum. ag-lime, rock phosphate and rock dusts, usually accompanied by deep ripping and legume cover cropping. Comparisons between existing plantings and various fertilising schedules is required to identify the preferred soil nutrition program.

Good soil moisture levels are required to establish orchards, also in mature trees to initiate flowering and during fruit set and fruiting. Adequate soil moisture levels appear to be a major trigger for flowering — reasonably sized fruit and high juice content



indicate that water requirements may be substantial.

It is claimed that hand nipping *D. jerseyana* and *D. pruriens* will give greater yields. The greatest problems for young plants are: wind-burn. sunburn and moisture stress. Trees are usually planted close, from 1 to 2.5 m within rows, often with taller growing trees being included.

Between-row spacing usually varies from 2.2 to 5 m, suitable for small farm machinery access, and usually in block plantings. *D. pruriens* can be used as a shelter tree for the more sun-sensitive *D. jerseyana*. Although *D. jerseyana* can be subject to a number of pests these are thought not to be beyond the capacity of "organic" standard control methods. There is disagreement on this.

Good control of the fruit fly, *Dacus* spp, has been achieved with harvesting the green unripe fruit and allowing drying to occur off the tree. As a young seedling *D. pruriens* is more tolerant of full sun conditions than *D. jerseyana*. Because of its autumn/winter fruiting period, *D. pruriens* has a lower rate of fruit pests than *D. jerseyana*.

Traditional Aboriginal Use: Fruit eaten.

Yield at maturity: Yields are reasonably consistent between *D. jerseyana* seedling trees but vary yearly. A six-year old tree growing in

reasonable conditions and with a single trunk had 300 fruit weighing 4 kg.

Ideal conditions, in a no wind risk situation, would include multi-trunk, single row system with canopy tree protection and netting harvest method. Greatest yield would be achieved through inter-row spacing of 3.5 m and a planting density of approx. 1,350 trees per ha (5,400 trunks at average. of 4 trunks per tree).

Fruit yields between *D. pruriens* is highly variable varying from approx 40 kg at year 9 (70 kg at year 12 also claimed) while other seedling trees hardly bear at all. Therefore cashflow projections need to be based on an average of these.

Harvesting: By hand. It is necessary to avoid contact with irritant hairs (when trunk shaking to drop fruit) by wearing gloves, long sleeved shirts and broad-rimmed hats. Irritant hairs found on fruit and leaves of *D. pruriens* and leaves only of *D. jerseyana*.

Fruit ripens over a 2 to 4 week period and should be harvested during the cooler parts of the day, preferably early in the morning, every two or three days. It is easier to pick the green fruit. A fruit bin and shelf storage system in cold rooms would be most suitable for bulk quantities.

Supplied as: Fresh, frozen. Fresh, frozen . *Typical value adding*: Best known for the tangy deep crimson jam they are also used in sauces (savoury & sweet), wine, salad dressing, desserts, fruit leather, preserves, conserves, confectionery, juices and cordials.

Fruit pulp could be frozen or processed on-farm. Fruit is used to produce jam, make wine, stewed with sugar, and colouring and flavouring in sauces, ice-creams and drinks. *Current purchasing price*: $11-$1 5/kg for *D. pruriens*, washed and split. $6-$1 5/kg for *D. jerseyana* depending on season. *Perceived demand*: High.

— Susan McGeever

[Australian Food Plants Study Group: Newsletter / 2005 Jan]

Davidson's Plum (Davidsonia pruriens)

Named for J.E.Davidson, a pioneer sugar-grower of Rockingham Bay, where the first specimen was collected. Pruriens from the Latin prurire to itch, referring to the minute soft hairs on the leaves and branchlets, which were thought to cause irritation.

The Davidson's Plum is a rainforest tree of North Queensland and northern New South Wales. It grows to a height of about 15 m, usually in lighter sunny areas. The pinnate leaves are very large, to about 70 cm, and each shiny dark green leaflet grows to about 25 cm.

The tree would make an attractive garden specimen, growing straight with one single stem and few branches. The trees bear flowers and fruit from a very young age. The main attraction, however, is the beautiful large plum-like fruit.

The fruit is round to about 6 cm in diameter, very dark reddish black, with a bloom like a fresh grape. They are very sour but with a rich plum flavour. They were much prized by the Aborigines as the trees often have very large crops.

The fruit can be cooked with plenty of sugar and eaten with icecream, or made into jams or jellies. Each fruit has two attractive feathery seed capsules, which, when dried, make excellent additions to potpourri.

Davidson's Plum Jam

2 kg fresh Davidson's Plums, 750 ml water, 2 kg sugar.

The easiest way to handle the fruit is to cut it in half around the seed, which can then be removed. Be careful with the juices, as the stain is very difficult to remove. Chop the fruit roughly into a stainless steel pan and add water. Bring to the boil and simmer steadily for about 30 to 40 minutes, or until the fruit is tender, stirring occasionally to prevent sticking.

Add the sugar, which has been heated in the oven. The amount of sugar will vary with your own taste, but it will be at least cup for cup. Stir till all the sugar has been dissolved and quickly bring back to the boil. Boil for 20 to 40 minutes, or until a small quantity of the jam jells on a cold plate.

Bottle while hot in sterilised jars and cover with a clean cloth till cool. To keep for a long period, cover the top of the jam with paraffin wax or greaseproof paper dipped in vinegar. Tightly capped, it should store well.

Jelly

To make a jelly, chop the fruit roughly and boil for about 45 minutes with rather more water than is needed for jam. Allow to drain overnight in a jelly bag, or a large strainer lined with fine muslin or old stocking. Bring the liquid back to the boil and add the heated sugar as before. It is sometimes necessary to add some pectin to the jelly to make it set. Bottle as before.

Seeds

To use the seed capsules, wash them well in several lots of water and allow to dry thoroughly. They may then be used for craft projects and potpourri.

— Ann McHugh

Australian Food Plants Study Group: A2894.

"Bring-and-Buy" news

WANATCA's next "Bring-and-Buy" meeting is on September 11.

Everybody raising nut, fruit, and other useful tree crop plants is encouraged to come along and offer some to members and others, even if they only have one or two rareties, and particularly if the plants are seldom available from commercial nurseries.

A nominal charge is made to sellers and buyers attend free. If you have only a very few plants, arrange to combine with others on a single stand. We do want to see those special plants of yours spread around as much as possible! Plants can be sold out of the back of a car or ute or from a trailer.

Get ready for the Bring & Buy

WANATCA will again be holding a Bring & Buy meeting in September (provisionally, at the Captain Stirling Hotel carpark, Stirling Highway, Nedlands).

The date is Sunday, September 11, 9 am - 12 noon. There will be more details in the next issue of Quandong, but:

Make a start NOW

on potting up or producing your extra nut, fruit, or other tree crop plants which you can make available.

This is the opportunity to make some money and at the same time raise the number of crop trees planted locally. Commercial sales are welcome too.

Queries to Stanley Parkinson, 08-9386 2518.

Marula to make its mark in WA?

The Zone map for tree crops which WANATCA has used as part of its membership for close to 30 years has always listed the Marula as one of the potential crops. But it is almost unknown to the general public.

In the event, the Marula may be the first native Southern African tree to gain acceptance as a food source outside its home area.

A substantial tree, able to thrive in areas with hot, dry seasons, the Marula produces both a fruit and a nut.

Rob Harington, who has agreed to talk about the Marula with WANATCA at our May 17 meeting, was brought up in the Eastern Transvaal area of South Africa and is an enthusiast for development and use of this versatile crop tree, which he remembers fondly from his youth.

"Some of the kernels of the Marula Nuts are really delicious", Rob said. "This is a tree with a future. I have a Marula which is growing at my place in Oakford, in the southern Perth suburbs, which has already reached 4 metres in height. But the real potential for Marula as a crop tree is farther north, in the Kimberly and the Pilbara".

The Marula, botanically *Sclerocarya caffra*, is in the Anacardiaceae family which also includes the Mango. And like the mango, it has a fruit which has been enjoyed by humans and animals back into geological history. The ripe fruits in the wild tend to drop and ferment, and reeling, drunken elephants who have gorged on the fruit are a natural hazard in some areas in the season.

While not especially easy to germinate, Rob has worked out a method to do this. "It gives close to 100% germination", he says. "I will be describing this method, and all the background to the Marula, at the WANATCA meeting".

— David Noel

[A detailed article on the Marula appeared in one of the early WANATCA Yearbooks — Vol. 2, 1976].

From "Food from the Veld" (Fox & Norwood Young)

[West Australian / 2003 Dec 10]

Dramatic growth uncorked

Viticulture has grown dramatically in the South-West in recent years, with more than 6260 ha now under vine and 152 wineries established.

The region has flourished since 1996, when there were about 100 wineries.

Although Margaret River has been the dominant grape-growing area since vineyards started springing up in the 1970s, recent years have seen significant plantings in the Warren-Blackwood and smaller plantings in Ferguson Valley, Karridale, Harvey and Donnybrook.

Of WA's 242 wineries, the 152 in the South-West produce an estimated 33,200 tonnes — 64 per cent of the State's 52,000 tonnes of grapes.

Wine Industry Association WA chief executive Sarah Dent said the South-West had supported most of WA's phenomenal 300 per cent increase in export volumes over the past five years.

The area planted with vines in WA increased 165 per cent in the four years to June 2002, compared with 60 per cent for Australia.

Ms Dent said the growth had been phenomenal and it was a great boost for the WA economy and declining regional communities.

"The timber industry collapse in the 1970s had a severe effect on many regional towns in WA and, as a consequence, people began to look to other investments, including planting vines," she said. "As a result, the wine industry has since established itself in the former logging areas of Manjimup, Pemberton and Margaret River, giving the region a new lease of life."

The industry had expanded and matured to a point where the region's communities were earning more and were attracting skilled workers and investment. Local university and TAFE courses were starting up to cater for demand from the wine industry.

Wine country: One of the many vineyards in the South-West

"We are now seeing many young people flocking back to the region because of increased job opportunities created by the confidence and investment that has been directed at the area through the wine industry," Ms Dent said. "What's more is they bring skills in marketing, logistics, labelling and so on that are lifting the existing businesses to international standards."

Ms Dent said wine production was shifting towards regionalism and specialising in local characteristics, which would benefit smaller areas of the South-West.

"The larger companies are growing grape varieties in those regions best suited to that type in terms of geography and climate — for example, cabernets and chardonnays in Margaret River, sauvignon and pinot in Pemberton," she said.

"We will see this trend continuing, particularly as consumers become more educated about wine varieties and where they are best produced."

Although Margaret River is still the biggest wine district in WA, producing about 22,170 tonnes of grapes from 101 wineries, growers in other areas are discovering soil-specific grape varieties — and proving themselves against national competition.

Pemberton has 22 wineries, Geographe 16, Manjimup eight and the Blackwood Valley five.

The region's growth will only continue and estimates show output will nearly double to 40,900 tonnes in 2008, led by Margaret River, which will expand production 14 per cent to provide 40 per cent of the State crush.

[WA Agri-Food Industry Outlook / April 2005]

The Olives in WA 2005 Report

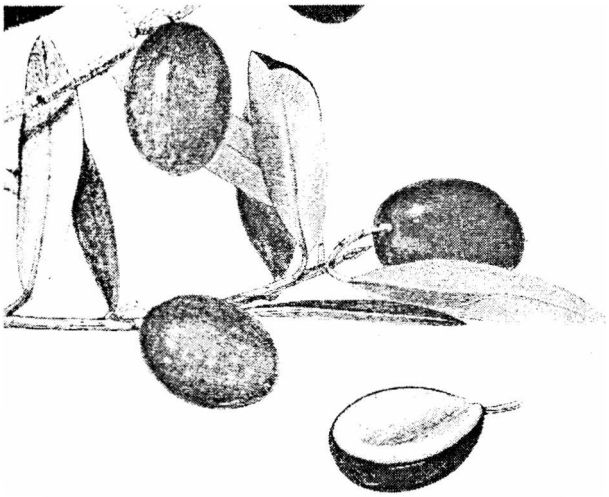
Production of olive oil in Western Australia is expected to increase significantly in 2005 when the olive harvest commences in northern regions in late March. Yields are expected to be well up on the previous year given the increased tree age and the increase in the number of trees coming into production.

Heavy frosts in spring 2004 did cause some flower damage in some areas but generally fruit set was favourable and should result in higher yields. Last season's harvest of approximately 2,500 tonnes of olives was the first major harvest of olives in Western Australia but a large quantity was left unharvested due to unavailability of mechanical harvesters and poor harvesting efficiency of some machines.

Industry estimates are that this years harvest could be in the range of 8–10,000 tonnes of olives with about 80 per cent of this produced in the Gingin region. A number of the large groves have organised to have access to new and more efficient harvesters and with the experience of the 2004 harvest, hope to produce a better result in 2005.

With higher volumes of fruit available

Australia-wide in 2005, processors will have access to a wider range of fruit which will put pressure on prices paid to growers. The Australian Olive Association (AOA) forecasts that olive oil production Australia-wide in 2005 could reach 6,000 tonnes, which is well up on the frost and drought affected level of 2,500 tonnes in 2004.



Olives. From "Fruits of the Earth" (Bianchini)

At full production, the AOA expects that production will be over 30,000 tonnes per annum. Current prices for bulk olive oil are in the A$4-7/litre rang,e which is down slightly on last year, and there is a premium of around 5 per cent for organic olive oil.

Prices for olives for oil production are expected to range from A$600 to A$1000 per tonne of fruit, depending on extraction rate, variety and quality.

Prices for table olives are expected to be around A$2.00/kg for good quality fruit delivered to a processor. Given that the number of processing plants has increased, growers now have greater options for processing their fruit into oil this season but producers will need to arrange processing well in advance of harvest due to the higher crop level this year.

Table olive production is expected to remain steady at around 60 to 80 tonnes. A number of the major olive oil producers have a diversified a small component of their production into table olives, which has increased demand for good quality table olives and lifted the profile of this new industry.

Australia imported 27,906 tonnes of olive oil in 2003/04, valued at A$124 million. While volume was down 11 per cent on the previous year it still represents an 18 per cent average annual growth over the past ten years. Tighter world supplies contributed to a slight rise in

import value with total olive oil imports valued at A$4.43/litre and virgin oil A$5.19/litre.

Of significance to Australian olive producers is that imports of the higher quality virgin olive oils have remained around 30 per cent of total olive oil imports.

The ten-year growth rate for total olive oil imports is 8 per cent per annum while the equivalent growth for virgin olive oil imports is 18 per cent, which may indicate that consumers are becoming more aware of the health benefits of this product.

In the longer term, larger quantities of Australian olive oil will be available to the Australian market which will impact on the many small high cost producers and result in some structural adjustment in the industry. However, the larger volumes of high quality varietal oils are expected to create opportunities for marketers and traders to source oil for new export opportunities.

[Agroforestry News / 2005 Feb]

Carob tree production in China

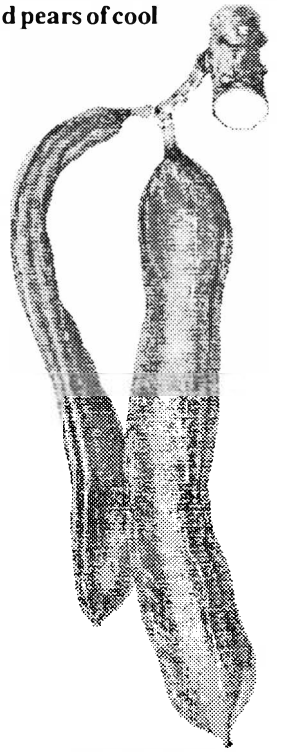
China is the world's largest producer of rice, wheat, cotton, peanuts and rapeseed. It ranks second in corn and fourth in soybean production. Subtropical fruits such as citrus, litchi and loquat grow together with apples, peaches, apricots and pears of cool temperate climates.

There has been recent interest in carob trees as an agroforestry species and for the restoration of degraded dryland areas, mainly, of three Southern Chinese provinces with warm or subtropical climates: Sichuan (Yibasan and TongAn), Yunnan (Lufeng and Yuan Jiang) and Guangxi (Shangsi and PingGu)

The project "Introducing nursery and cultivation techniques for *Ceratonia siliqua* in China" is funded by the Chinese government. One of the aims of this project is to find a tree species suitable to dry areas of southwest of China that will contribute to the ecological rehabilitation.

The project was started in 2001 and will be completed by 2005. During 2002 the Chinese Academy of Forestry (CAF) contacted IRTA Mas Bové (Catalonia, Spain) to start a possible collaboration on this species between both institutions. During two years 2002 and 2004, IRTA sent to CAF more than 100,000 seeds, from important carob cultivars: five from Spain ('Negra', 'DuraiR, 'Rojal', 'Banya de Cabra' and 'Matalafera') and two from Portugal ('Mulata' and 'Galhosa'), with the purpose of introducing them in the nursery and, later be planted in the field.

In the new plantations two methods of planting were used: direct sowing in the field, and small plants from containers. The last method was



Carobs. From "Fruits of the Earth" (Bianchini)

the most suitable and will be used in the future.

Ecology

The climatic conditions of the Chinese areas where the carob has been introduced, Sichuan, Yunnan and Guangxi provinces placed in the south, are different from those of the Mediterranean Basin to which carob is well adapted. It has great climatic variability, with altitudes of 800-1000 m above sea level, minimum temperatures of 0 or -1°C and maximum of 40°C, although there is a big range of temperature between day and night (about 10 °C). Rainfall is 700-800 mm in the county of Xichang (Sichuan) and, higher in the other two provinces (Yunnan and Guangxi), about 1000 mm, distributed between June and September.

The carob was planted on hilly lands and the soils in general are not very deep, clay-loam, grey-brown colours, with neutral or slightly acid pH (6-7) and low levels of phosphorus and calcium.

In the Mediterranean countries (Spain, Italy, Portugal, Greece, Morocco, Tunisia, etc.), the carob grows well in warm temperate and subtropical areas, with altitudes below 600 m above sea level, low rainfall in summer (300-500 mm/year), and tolerates hot and humid coastal zones. It can only withstand light frost; temperatures below -4°C can damage young trees and flowers of mature trees.

Carobs can adapt to a wide range of soil types from poor sandy soils and rocky hillsides to deep soils, but they cannot withstand waterlogging. In the Mediterranean Basin carob generally grows in marginal, calcareous and basic soils.

Crop development restrictions

In Sichuan province, the areas where the carob seeds have been planted are hilly, far from the coast, with high altitudes above sea level, high rainfall (800-1000 mm and concentrated in the three summer months, with very poor soils, neutral or slightly acid pH, and these conditions are different from the Mediterranean countries. Temperatures of the Yibasan and TongAn areas are warm and more similar to the original carob areas of the Mediterranean Basin.

Pests: Severe damage is caused in young trees by rabbits and some native ants that gnaw trunks and new shoots.

Diseases: High rainfall, concentrated on summer months, can cause waterlogging problems in young carobs and later promote fungus attacks of *Phytophthora*, in the neck of the tree, and scab in the leaves of the most sensitive carob seed trees.

Pollination: the carob is a trioecious species with male, female, and hermaphrodite flowers borne on different trees. It blooms in summer-autumn and it seems to be mainly pollinated by insects, but also by wind. High rainfall and relative humidity in the rainy summer season, could lead to poor fruit set during the pollination time (mainly the period that overlaps with blooming time).

Mechanical harvesting: currently this factor is not very important because there is large manpower and its cost is low.

The Future

Future work will assess the performance of the seedlings planted in the three Chinese provinces (about 100,000 seedlings) to find those that adapt better to the new environmental conditions, and will select seedlings from more vigorous cultivars, female and hermaphrodite sexes, tolerant to diseases (*Oidium*), early bearing and yielding fruits of good quality.

Later it will be necessary to bud the best trees on seedlings and to introduce them in collections and comparative trials to complete their agronomic and commercial evaluation. This work should be carried out within the new agroforestry systems framework, in which the carob could solve reforestation problems in degraded areas and its bean production used both for human and animal feeding (sheep, goats, pigs, cows, horses, etc).

****

[This article was adapted from: J. Tous & J. Chunqian: Carob Tree Development in China. Nucis-Newsletter Number 12, September 2004].

Agroforestry News: A2768.

Importing tree crop seeds into WA

Letter on introducing Derris crops to WA

We farm and mill in Mt Barker, WA, and would really like to include Derris indica in our tree planting programme for timber, to produce derris and to maybe produce biodiesel. The species' salt tolerance is impressive too,

The problem is in getting seed into Australia. I can't find an Australian seed source. I have located a seed source in India, but although it is not a prohibited import into Australia, it is into WA. Such a pity as it is such a useful species.

Do you have any experience in surmounting this kind of obstacle? Know anyone who could help? Any suggestions ?

— George Hartley

<pfcmail@bigpond.com>.

David Noel response:

There are various ways to tackle the problem. A direct way is to contact whoever is responsible for the 'Prohibited List' in the Ag Dept and ask them to remove the plant you want from the list, giving your case for this. They will consider this approach.

Other ways involve circumventing the bureaucratic barriers. In my opinion, the whole 'Prohibited List' apparatus is without legal backing, is an illegal act by government, and nothing more than a gigantic bluff.

There is a huge accumulation of background material to support my view, but I won't go on at length here on this, just mention a few of the main factors. The apparatus works by 'requiring' someone

importing plant material into WA to sign a declaration that the item being imported is on the Agriculture WA 'Permitted List'.

If you don't sign such a declaration, or what you are bringing in isn't on the list, then Agriculture WA may confiscate it. I don't believe they have the legal right to do this, but it is hard to battle the bureaucratic machine. Note that nothing on the declaration form says what they can or will do with anything, they just may do it anyway.

The form quotes the 'Plant Diseases Act', which certainly does give them the right to inspect material, but as far as I can see has no relevance to clean seed which is not a carrier of diseases. Their effective blocking of bringing in seed of any sort from elsewhere in Australia is a clear breach of the right to unrestricted interstate trade as guaranteed by the Australian Constitution. It also contravenes the federal government's Competition Policy legislation.

When seed is imported into Australia, the inspection agents responsible are, in my opinion, in breach of their employment if they act on behalf of another government (WA or federal) in so doing.

Finally, the Prohibited List is itself a bit of a joke, compiled by people without any specialized knowledge, but with an inclination to block anything which anyone might claim is undesirable, without any independent legal avenue of appeal, and without any thought of the damage being done to WA by restricting its research and development on promising species.

The List includes many species which the WA Government itself sells though its agencies such as the Forests Products Commission, and it includes species which are endemic to WA, so it is excluding the import of species which in nature are found only within the State!

The Federal legislation is more restricted, more reasonable, and can be appealed against. For species which are not prohibited by the Commonwealth, but are 'prohibited' by WA, you can of course get someone in another State to import it and then mail it to you. As I understand it, the WA government does not have any authority to inspect mail from elsewhere in Australia, unless believed to contain dangerous substances.

There is no connection between items on the WA "Prohibited List" and WA government authority to stop species being grown here, and many items on their list have already been grown here for many years, so if you can find a plant being growing here, you can use that as a source to grow it yourself. The exception is for plants which are specifically listed as a Declared Weed (such as blackberry), though even here the prohibition does not apply to horticultural varieties.

I have asked a high-up person in the Australian Quarantine Service what he thought the outcome would be if a person made a court action against the WA Government regarding their restrictive practices in seed importation. He thought that the importer would win the case, if he had sufficient funds and determination, but that few would risk the stakes involved.

Another approach is to look at species already native to Australia. In the case of *Derris*, there are 5 native species, in the Northern Territory, Queensland, and New South Wales, some of which could have the properties you are looking for. Also, a species from, say, NSW, might be better suited to your growing conditions than one from India.

— David Noel ¥

[Sunday Times / 2005 Mar 6]

Sapodilla — terrific commercial potential

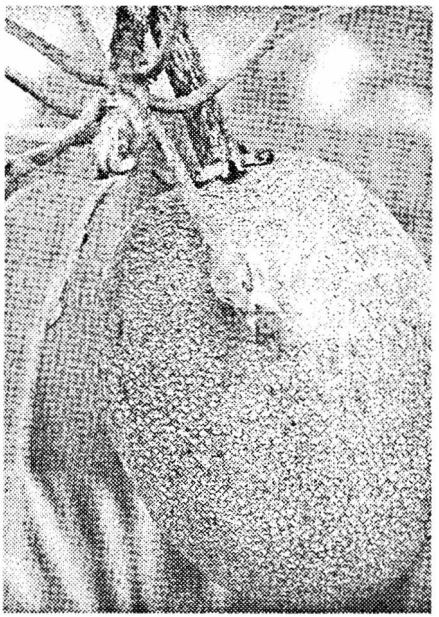
Sapodilla, or chico, as it's better known through the tropics, is a major commercial fruit in North-West Australia.

Westbrook Haynes, the marketing guru behind New Zealand's kiwi fruit export success, says that sapodilla will become the "kiwi fruit" of tropical Australia. The super sweet fruits are much admired in Asia and ready markets await our exports.

A tropical tree, sapodilla has its origins in Central America — from Mexico to Venezuela.

It has a growing range extending from 30 degrees north of the equator to 30 degrees south. Perth, at almost 32 degrees south, is close enough to achieve success if early extra care is lavished on the tree.

Botanically known as *Manilkara zapota*,



Sapodilla or Chico fruit. Photos: Doug Sherring

chico has been commercially propagated and spread because the chicle, or latex, exuded from the stem is a major ingredient of chewing gum. For this reason, this South American sweetie is grown throughout the tropical world.

Growing chico in Perth is an achievable challenge as demonstrated by John Burt, of the Department of Agriculture, at his Trigg home. His tree produces about 30 to 40 fruits each year. Protection from frost in winter is necessary for the first 12-18 months to establish the tree.

Frost can kill young trees, while mature specimens can survive in minus 4C or 5C.

Fruits may not look instantly appealing, being a russet brown or reddish brown colour. The flesh varies from reddish to yellow brown and is extremely sweet. In many tropical areas where lollies are virtually unknown, fruits like chico are natural sweets.

Shape varies among the many varieties — from spherical like a cricket ball to pointed at both ends like a tamarillo. Usually about the size of an apple, there are up to 12 shiny black seeds in each fruit. Juicy and tasty, these fruits are eaten fresh or can be used to flavour ice cream, cakes or sherbets.

Sapodilla has terrific commercial potential because of its high productivity. A three-year-old grafted tree can bear 4 kg of fruit and, when mature, crops of up to 3000 fruits have been recorded. Bearing starts in two to four years for grafted and five to eight years in seedling trees.

Normally self-fertile, some seedlings are partially or completely self-sterile. So as usual,

it is worth investing in a grafted tree. These can be picked up from specialist fruit nurseries around Perth.

Flowers are sweetly perfumed and usually open at night. The resulting fruits take up to nine months to mature and ripen. Subtle skin colour changes indicate ripeness. Picked fruits should be de-stemmed and washed to remove latex, then left at room temperature to soften. Fallen fruit can stain concrete paths.

A handsome evergreen with burgundy-coloured new foliage, chico will make an attractive show in the garden. It's tough and able to withstand strong winds, drought and occasional flooding. Best growth is achieved when these extremes are avoided. While adaptable to light sand or heavy clay soils, good deep loams are ideal.

Chico is slow to grow, reaching 20 m in the tropics. I believe it will be considerably smaller around Perth. Light mulching and regular deep summer watering are important ingredients of success.

— Neville Passmore

Sapodilla tree in fruit

[The Nutshell [NNGA] / 2004 Dec]

Nevada Pine Nut Harvest Breaks Record

Commercial harvesters of America's wild pine nuts set new records in bidding for the right to pick pine nuts from BLM lands in central Nevada.

These pine nut picker collectively purchased rights to harvest 209 tonnes of pine nuts at the Ely auction The numbers came as a surprise as most of the west has seen massive mortality of pinyon pine nut trees.

Nevada's pine nuts have long been noted for their large size and sweet taste. Single leaf pinyon nuts are commonly called a soft shelled pine nut because they can easily be cracked with a snap of the finger. These come from a Single Leaf Pinyon Pine found primarily in Nevada's Great Basin.

Another species of American pine nuts is found in Arizona, New Mexico and Colorado. These are generally called pinon. The pinon nuts come from a pinyon tree which has two leaves and are known for their butter flavour.

While the New Mexico nuts are harder to

crack, they have historically been the most highly sought after pine nuts in the United States. At one time the New Mexico harvest was more than 3600 tonnes, somewhat dwarfing Nevada's record.

As a result of many environmental factors the New Mexico trees stopped large scale reproduction many years ago. The large Nevada pine nut became popular in New Mexico over the last few years. Pinon Penny, the owner of Pinenut.com believes the harvest records are due in part to New Mexican's fondness for the Nevada Nuts. Penny began working with pine nuts as a method for creating sustained land use management use on public lands in the mid-1990s.

When asked about the Nevada record yield she commented, "Everyone knows the prices have risen dramatically in the last few seasons and now there is much more competition for what pine nuts are out there. Most people are beginning to understand that the majority of the pine nuts in the store come here from China and they prefer the American wild species."

Nevada's BLM state forester, Skip Ritter, stated that it was good to have a moderate pine nut crop again. During the last several years Nevada's pinyon have produced very small crops, mainly due to drought conditions and insects. The initial bid numbers are also only an indication of the crop, as many of the contractors bid on lower quantities than what they hope to get out of an area.

The contractors will increase their sale quantities as the season progresses if all goes well. This is a fairly common process as most of the contractors have suffered crop losses in the past, due to a variety of factors including weather, insects and work force.

The complete numbers for Nevada are not in yet, as the Forest Service lands have not yet been auctioned. That auction will take place in the near future. If a person is interested in picking pine nuts commercially, they must attend the auction and bid against others for the right to harvest a particular area in Nevada. More information on the process may be obtained from Skip Ritter, BLM Nevada state forester, (775) 861-6484.

— ***Penny Frazier***, Goods From The Woods. Dateline: Ely, Nevada.

NNGA: A1386. ¥

[West Australian / 2005 Mar 31]

World has a taste for our grapes

There are table grapes and there are table grapes —but there is only one WA variety of the Crimson Seedless and it is fast becoming the most sought after in the world.

Today, the Department of Agriculture is running public taste tests of the newest and biggest strain of this wonder grape at its South Perth headquarters.

For Agriculture Department industry development officer Ian Cameron, the taste test is "the icing on the cake of 40 years working with WA's table grape industry" — an industry forecast to be worth as much as $18 million this financial year.

He knows he has the hottest property in the grape industry.

"We took our Crimson Seedless to a major industry event in the Arab Emirates two years ago. The 1200 participants tried the product and 1199 wanted to place immediate orders," Mr Cameron said.

"Right now it is impossible to meet the export demand for this grape because every one we grow is soaked up in the domestic market."

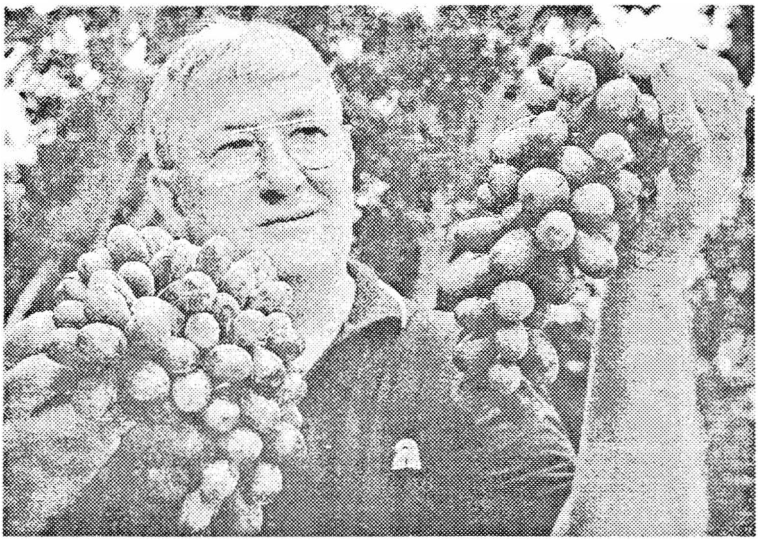
He says that 25 years ago the Red Emperor in the Swan Valley was the number one table grape. The turning point came six years ago with the arrival from California of the Crimson Seedless variety.

Until then no one was able to produce a berry bigger than 6 g at harvest but the department has created a Crimson Seedless with a 10 g berry, without impacting on shape, colour or sugar content. The key proved to be a benign and mild strain of grape virus complex.

Mr Cameron said his team found that if it grafted rootstock on to these super vines they inherited the benefit of what was now identified as the clone 3A virus complex and started producing bigger and better berries.

"To say the first harvest was spectacular would be an understatement," Mr Cameron said. "The transformation of the variety has been phenomenal."

—Andrew Mole



World beaters: Ian Cameron, from the Agriculture Department, with WA Crimson Seedless grapes. Picture: John Mokrzycki

[West Australian / 2005 Apr 26]

Big year ahead for agriculture schemes

Prospects of a bumper year for promoters of tax-effective agricultural investment schemes have firmed with one of the big players, Timbercorp, selling out of a new $34 million almond orchard project within six weeks of it being put on the market.

Newly listed Perth company Tropical Forestry Services, which has one of the world's biggest Indian sandalwood plantations at Kununurra, has also confirmed that its sales this year are likely to exceed its prospectus forecast of 100 hectares.

TFS chief executive Tom Cullity said it had already sold 72.5 ha, giving it a good chance of achieving 150 ha by June 30.

That would lift its return on equity to 21.5 per cent compared with the forecast of 19.8 per cent it made in its prospectus on "high-case" sales of 125 hectares. "The MIS [Managed Investment Scheme] industry is pretty buoyant at the moment," Mr Cullity said.

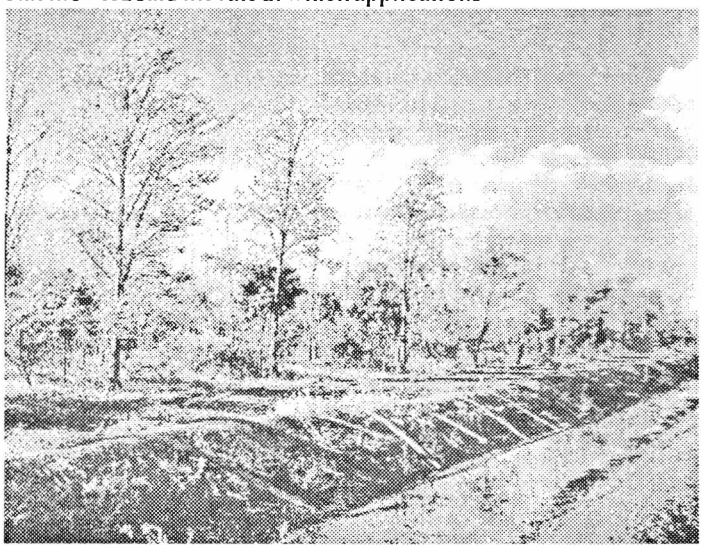
Timbercorp executive director Sol Rabinowicz said the rate at which applications had come in for the 1300 ha almond project in Victoria had been "staggering".

It had sold out two months earlier than expected and it was also getting better than expected support for its $45 million bluegum offering.

Research houses specialising in the tax-effective managed investment scheme market have predicted sales could recover further to $900 million or more this financial year, after jumping 80 per cent to $665 million last year.

That would take it back close to the peak of about $1 billion in sales posted in 2000 before a tax office crackdown on dodgy tax-driven investment schemes spooked the entire market. The lift in demand is being attributed to: more awareness of agribusiness as an investment; the lure of immediate tax deductions amid a buoyant economy; low unemployment; and many investors having capital gains tax to offset from cashing in property and shares.

The sector's biggest player, Great Southern Plantations, also confirmed it was looking at sales of $400 million of bluegum, vineyard and olive projects, nearly twice last year's $240 million.



Sandalwood: Sales this year likely to exceed forecast

"People are earning good incomes, there's lots of capital gains tax being crystallised this year and there's growing acceptance of these sorts of assets so the year is looking strong," said Great Southern executive director Cameron Rhodes. He said the 30 per cent drop in the share price since early February probably reflected the general softness in the sharemarket.

— Cathy Bolt

[BioOrganics Inc: Newsletter / 2005 Feb]

What Fungi Do for Soil

In trying to think of a good way to illustrate the good effects that mycorrhizal fungi have on soil, my own experience in a garden should work.

We had just moved to a new home in Camarillo, California, and the back yard that sloped downward had a relatively level area that could be transformed into a terrace about 15 feet wide by putting up a retaining wall of railroad ties. After the wall was built, I excavated the upper part of the terrace and moved that soil toward the wall, ending up with a level area.

Eventually, I would build several raised beds on that terrace and amend the black clay soil with sand and compost, but as it was already getting past planting season I did a rush job of starting various vegetables. (Side Note: Ignore anyone who tries to tell you that sand and clay make concrete. They don't. If you blend in enough clean sand and add some compost, you'll get beautiful loose garden soil to work with for years to come.)

At one end of my garden terrace, I pried open a few holes in the hard clay and planted potato seeds with a dusting of mycorrhizal inoculant - no fertilizer at all. A few weeks later, I was surprised to see that the potato plants were looking very healthy, but didn't really pay too much attention to them.

When they finished flowering, I went to "rob" a few new potatoes for dinner one night and was very surprised to discover that I didn't need a shovel. I could just poke my hand down into the soil near the plants and feel around in the loose soil for the potatoes. I also noted that this nice loose soil extended out in roughly an 18 inch circle from each plant. Beyond that area, the clay was as hard as a board.

I was seeing the effects of the mycorrhizal fungi. After colonizing the potato roots, the fungi sent their thousands of microscopic root-threads (hyphae) out into the surrounding soil to forage for nutrients and moisture, penetrating between the tightly-stacked clay platelets as they extended outward.

As the clay platelets were pried apart, oxygen was able to flow down into the soil and water drained away easily. Other beneficial aerobic organisms were then able to multiply and produce nitrogen and solubilize phosphorus, which the mycorrhizal fungi transported back to the potato host plant. I had a huge crop of potatoes that season as the plants grew in the equivalent of great potting soil - always staying moist, but not soggy.

Interestingly, within a week or so after harvesting, the soil where the potato plants had been growing was nearly as hard-packed as the surrounding soil. The "friendly fungi" are obligate life forms and cannot remain active without a host plant. Their survival strategy is generally the same as plants that leave behind seeds for next spring, but these fungi leave tiny dormant spores in the soil. The spores will not become active until they

receive a chemical signal from a new growing root nearby.

Other grow tests have shown that the fungi can also perform their magic on poor sandy soil - with the hyphae clumping the sand particles together to form the same sort of potting-type soil as from clay - only working from the opposite direction! This is simply the role of mycorrhizal fungi in nature - to improve soil for their host plants and, working with other microbial agents, to supply their plants with nutrients as needed. Clay gets loosened, sand gets clumped, plants thrive. So very simple.

But all it takes to mess up this elegant soil system is to add "fast-acting plant food" and systemic fungicides to your garden. Think about that the next time you are scraping sticky clay off your shovel.

— ***Don Chapman***, President, BioOrganics, Inc. <dchapman@bio-organics.com>.

News from Dennis Ting

I am still interested in growing various crops and seem to be having mixed results this year.

The Jujube "Li" has very large fruit while the others did not set fruit due to the cooler weather.

The Walnut "Chandler" is self pollinating and had a very good crop until most were taken by Sulphur Crested Cockatoos!!

The Macadamia "Nutty Glen" has nuts but "Beaumont", "A4" and "A16" are growing well but yet to flower.

The White Sapote "Vista" was pollinated by "Ortego" and has one large fruit coming on. "Ortego" has set fruit in previous year but odd shaped due to partial self pollination.

The Quandong on a Myoporum host has been growing two seasons and is over two metres tall now.

My latest project is to establish a collection of Chinese Pears to trial which I obtained through the Permaculture group and grafted over two winters.

These are all pear shaped and include "Tsu Li", "Ya Li", "Shen Li", "Bong Ri" (Korean) and "Hwa Hong" (Korean).

— ***Dennis Ting***

<dennis_c_ting@hotmail.com>

[nafex@lists.ibiblio.org / 2005 Apr 5]

Eliminating squirrels

[Ed: should work for rats]

Here is one home remedy I found very effective. Buy a cheap jar of peanut butter and some Plaster of Paris. Mix the Plaster of Paris into some peanut butter until it has firmed up and is the consistency of a baked chocolate cookie.

Simply make some "peanuts" for the critters and press them into the tree bark of their favourite trees on the squirrel runs. They love these tasty little snacks and in a few days you will have no more squirrels.

— ***FuwaFuwaUsagi***

<fuwafuwausagi@muchomail.com>.

[West Australian / 2005 Feb 15]

GSP, Kailis plan organic olive grove venture

Buoyed by renewed investor enthusiasm for tax-effective agribusiness products, Great Southern Plantations is about to link up with a branch of the Kailis family empire and become part of one of the biggest organic olive grove projects in the world.

Great Southern executive director Cameron Rhodes confirmed yesterday it was in the final stages of negotiations with Mark Kailis's Kailis Organic Olive Groves Ltd to buy its 60-hectare organic olive grove near Donnybrook and dramatically expand it.

If the deal is completed, Great Southern is planning to sell about 240 ha of olive groves to investors this financial year, including the existing plantation and 180 ha of new plantings.

At $80,000/ha, that would raise around $19 million, helping the company to achieve its forecast of topping last year's record $243 million in sales of tax-effective bluegum and vineyard projects. The deal would included an oil offtake agreement with KOOG, whose product retails locally for around $30 for 500 ml or £17 in the upmarket British store Harvey Nicholls.

The move into olive groves would expand Great Southern's offering beyond its founding bluegum plantations and its first venture last year into vineyards, via a $16 million, 160 ha project in the Frankland region in the Great Southern.

John Young: Has accumulated $1.36 million in retirement benefits

Sales of organic food are growing at a phenomenal rate around the world, Mr Rhodes said. He said GSP was hoping to expand its vineyard project sales this year to 400 ha or $40 million and said it was in the process of buying vineyards or land in the Margaret River, Mt Barker and Frankland areas. He confirmed they included the 44 ha Jindawarra vineyard at Margaret River which the Xanadu Wines group announced it had sold last week for $2.75 million.

Mr Rhodes said Great Southern's results for the six months to December, released yesterday, were further evidence of the promising outlook for the MIS market.

In its typically very weak first half — last year it made a loss of $2 million before doubling full-year profit to $93.2 million — it reduced its loss to $817,000 after more than doubling sales of eucalypt products to $11.4 million.

The interim results also revealed Great Southern's managing director of 17 years, John Young, has already accumulated $1.36 million in retirement benefits under a new contract negotiated last year which gives him extra entitlements for every year of service over 10.

— Cathy Bolt

West Australian Nut & Tree Crop Association (Inc)

PO Box 565 Subiaco WA 6008 Australia

EXECUTIVE COMMITTEE 2005

Stanley Parkinson (President)	9386 2518		Bob Cook (Events)		9574 7103/h
John Foote (Vice-President)	9682 1060		Wayne Geddes	0412-075 043	9382 2437
Trevor Best (Treasurer)	9397 5920		Bill Napier	0417-176 458	9397 6799
George Ainsley	9390 5338		David Noël (Publications)		9381 7341
Simon Barnett	93301199w	93841213h	Charles Peaty	0439-996 662	9433 4442

ACTION GROUP LEADERS

CHERRY: Neville Shorter, 9450 5606 (2/9 Clydesdale St Como 6152)
FIG: Alex Hart, 9490 1324 (71 Terence St Gosnells 6110)
JUJUBE: Jim Dawson, 9574 6371 (PO Gidgegannup 6083)
MACADAMIA: John Cory, 9574 6163 (Toodyay Rd Gidgegannup 6083)
PECAN: Bernie Rochester, 9734 1309 (90 Bucktin St Collie 6225)
PISTACHIO: Bert Hayes, 9622 9513 (PO Box 429 Northam 6401)
PITAYA: Bob Nederpelt, 9375 9435 (PO Box 56 Morley 6943)
POMEGRANATE: Julie Firth, 99381628 (Lot 12 David Rd Waggrakine 6530)
WALNUT: Graham Fellows, 97731346 (PO Box 217 Manjimup WA 6258)

CALENDAR OF FORTHCOMING EVENTS

Deadline for next issue: Jul 26, 2005

2005

May 17	Tue	* Wanatca General Meeting (Rob Harington — All About Marulas
Jun 14	Tue	Wanatca Executive Committee Meeting
Aug 23	Tue	* Wanatca General Meeting
Aug 30 - Sep 1		• Dowerin Show
Sep 11	Sun	* Wanatca Bring & Buy Event
Nov 15	Tue	* Wanatca General Meeting (?Peter Beatty — Advances with Sandalwood and Other Tree Crops)

*General Meetings are held starting at 7.30pm. *Venue: As noted in each case.*
These meetings usually include a display of current world tree-crop magazines offered free.
• Event with WANATCA participation; § Refer to news item in this issue of *Quandong*.

Current Subscription Rate: $60.00 per year
(includes all publications for four consecutive quarters). Student Rate: $30.00

Quandong is produced by the Tree Crops Centre, PO Box 27, Subiaco, WA 6008.Phone: 08-9381 7341. This issue edited by David Noel. WANATCA contacts: Phone 08-9250 1888, Fax: 08-9250 2735. E-mail: <office@aoi.com.au>. Websites: <www.aoi.com.au>.
Quandong Advertising Rates: Whole page, $100; Half page, $60; Quarter page, $35; Eighth page, $20. 20% discount for 4 insertions.