

NEWSLETTER

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323 Philp Ave.,
Frenchville.
Qld. 4701.
8/5/2006

Dear Members and subscribers,

Well, here we are in 2006 and the weather is still as contrary as ever! Rockhampton has missed most of the rain, but the little we've had has greened the country up a bit. Unfortunately it's done nothing to replenish the water catchments, and the creeks haven't run for years. Hardy, waterwise plants are much in demand for home gardens.

In pre-European times, the local Aboriginal tribes stayed close to the river and large lagoons in dry periods, not only for the water, but for the food plants and animals which were more easily hunted as the water withdrew from the edges. Today the Woolwash, which has never dried in living memory, is empty. A rescue mission was arranged to save the large breeding barramundi, but the day before the date arranged, just enough rain fell to make the area impassible for the trucks carrying the tanks. By the time the vehicles could get in, it was too late, and most of the fish were dead. And up at the Botanic Gardens, hungry marauding tortoises from the Murray Lagoon aggressively hassle people who venture down the bank, and what were the beautiful wide swathes of pink lotus and blue water lilies are either brown and dry or a slimy mess.

Unfortunately, all the rain has fallen in other places and caused real problems, particularly in north Queensland. As a result of cyclonic activity, it will take years to re-establish some of the devastated forests and farmland, and in the meantime, soil erosion takes its toll.

Our home garden has become more of a holding operation. Sadly, I lost a couple of cherished plants over the hot, dry summer. We were having a lovely time touring Spain, Portugal and Morocco, and spending Christmas and New Year with family in Barcelona, and worrying about dressing warmly enough. Meanwhile, the automatic sprinklers at home just weren't coping, and when we eventually got back I found my rare yellow-arrilled *Diploglottis campbellii* dry and crisp, the raspberries barely there, and other small bedding plants gone to that great compost heap in the sky. Fortunately the raspberries are responding to increased water and the cooler weather (finally!), more *Viola*

betonicifolia has come up, and some of the other plants have been replaced. The only real gap is from the tamarind.

Rocky SGAP has been busy planning various projects, including a propagation list for us to work on, posters, and a display at the Municipal Library. I've already got a pot full of *Eugenia reinwardtiana* seedlings on the go. This is a beautiful evergreen shrub with delicious fruit, but it's very slow growing.

There have only been a couple of Bush Tucker tours at the Kershaw Gardens so far this year, but the demand always increases in the cooler months. Ann reports that on the last tour, the participants snacked their way all along the route.

I've received a request from Harbourside APS Group in Sydney, asking if any of our members would be prepared to speak at one of their meetings. The group meets on the fourth Friday of the month at the Lane Cove Tennis Club rooms. If there is anyone willing to do so, could you either let me know, or contact Louise Hayes direct at L.Hayes@fhs.usyd.edu.au. We often receive enquiries from groups looking for speakers, so it would be really good if any member who feel they could help out would let me know, and then I could build up a pool and match such enquiries to any potential candidates.

On our visit to "Glencoe" I had the chance to sample ripe *Sophonodon* fruit for the first time when we found a tree bearing a good crop of ripe yellowish fruit. It has quite a pleasant fruity taste and a rather hard granular texture. We also found a Burney Vine, *Trophis scandens*, twining round a tree, with the heaviest crop of fruit I've ever seen. The large curly pink/red arils were just right for eating.

Regards,

Lenore Lindsay and Rockhampton SGAP.

E-mail: lenorelindsay@hotmail.com

EDIBLE SPECIMENS TABLED AT MEETINGS:

23/9/05: *Hibiscus splendens* (buds, flowers, shoots, roots), *Leptospermum polygalifolium* (leaves for tea; flowers the source of medicinal jellybush honey), *Pittosporum angustifolium* (the much-prized medicinal Gumby-Gumby, with a variety of uses, especially for colds) and assorted *Grevilleas* (nectar).

28/10/05: *Acacia bidwillii*, *Erythrina vespertilio* (roots), *Alpinia caerulea* (rhizome and fruit), *Acmena smithii*, *Attractocarpus fitzalanii*, *Eugenia reinwardtiana*, *Diospyros humulis*, *Pipturis argenteus*, *Syzygium australe*, *S.luehmannii*, *Terminalia porphyrocarpa* (fruit), *Brachychiton bidwillii* (seeds and root), *Sterculia quadrifida* (seeds), *Castanospermum australe* (medical research), *Crinum pedunculatum* (medicinal).

25/11/05: *Alectryon tomentosus* (fruit), *Cassia brewsteri* var *tomentella* (edible gum from seeds), *Cordia dichotoma*, *Cyclophyllum attenuatum*, *C.oleifolium*, *Dendrothoe glabrescens*, *Diospyros geminata*, *D.humilis* (fruit), *Euroschinus falcata* (fruit), *Melaleuca trichostachya* (nectar, medicinal leaves, bark to wrap food), *Pogonolobus reticulatus*, *Pouteria pohlmaniana*, *P.sericea*, *Psychotria daphnoides*, *Terminalia porphyrocarpa* (fruit).

27/1/06: *Acronychia laevis* (fruit), *Bridelia leichhardtii*, *Cyclophyllum oleifolium* (fruit).

24/2/06: *Acronychia laevis*, *Alectryon connatus*, *A.subdentatus*, *A.tomentosus*, *Arytera divaricata*, *Bridelia leichhardtii*, (fruit), *Cassia brewsteri* var *tomentella* (edible gum from seeds), *Cupaniopsis anacardioides*, *Cyclophyllum odoratum*, *Dianella* sp., *Diospyros geminata*, *Drypetes deplanchii*, *Euroschinus falcata* (fruit), *Lysiphyllum hookeri* (nectar), *Psychotria daphnoides* (fruit).

24/3/06: *Acronychia laevis*, *Aidia racemosa*, *Bridelia leichhardtii*, *Dendrothoe glabrescens* (fruit), *Eucalyptus ptychocarpa*, *E.shirleyii* (nectar), *Eugenia reinwardtiana* (fruit), *Grevillea* sp. (nectar), *Hibiscus divaricatus* (buds, flowers, shoots, roots),, *Melaleuca quinquenervia* (nectar, medicinal leaves, bark to wrap food), *Myoporum montanum*, *Pouteria sericea* (fruit).

28/4/06: *Aidia racemosa*, *Alectryon connatus*, *A.diversifolius*, *A.tomentosus*, *Acronychia laevis*, *Bridelia leichhardtii*, *Dendrothoe glabrescens*, *Diospyros humilis*, *Eugenia reinwardtiana*, *Myoporum montanum*, *Pouteria sericea*, *Psydrax odoratum* (fruit), *Hibiscus divaricatus* (buds, flowers, shoots, roots), *Melaleuca quinquenervia* (nectar, medicinal leaves, bark to wrap food).

EXCURSIONS:

4/9/05: McKeague's property on Waterpark Creek at Byfield: In the semi-mown meadowlike area near the house the Onion Orchids (*Microtis parviflora*) were just coming into bloom, in company with other small forbs such as *Dianella rara*, *Lomandra multiflora*, and a host of pretty non-edibles. In and round the waterholes were aquatic plants, including *Nymphaea* sp. (tubers, stems, seeds) and *Cyperus* sp. (tubers). Then along the creek was a rainforest fringe, including *Pouteria queenslandica*, *Psychotria loniceroides* and *Rapanea porosa* in flower and green, edible when ripe, fruit.

2/10/05: Plantings round the Transport Department complex in North Rockhampton: These were suffering badly from lack of moisture and maintenance, and naturally contained few edible plants apart from nectar producers such as *Lysiphyllum hookeri* and various *Grevilleas* and *Melaleucas*, and medicinal *Pittosporum angustifolium*.

6/11/05: Kershaw Gardens, North Rockhampton: As it was extremely hot, we stayed in the shade of the southern rainforest area for the afternoon. Unfortunately, lots of plants seem to have lost their labels, and as many aren't local, we had a hard job trying to identify some. Nevertheless, we snacked happily on the abundant ripe *Eugenia reinwardtiana* fruit as we wandered, checking out *Morinda citrifolia*

(fruit) in flower, and sharing the last of the ripe *Diploglottis campbellii* fruit. Also noted were *Mallotis discolour* and a large number of different *Syzygium* and *Ficus* species (fruit).

4/12/05: Christmas outing: Lunch on Mt Archer:

5/2/06: Lammermoor Beach, Capricorn Coast: *Avinennia marina* (seeds), *Ficus opposita*, *F. rubiginosa* (fruit, shoots, medicinal sap), *Clerodendrum floribundum* (root), *Carissa ovata*, *Clerodendrum inerme*, *Bridelia leichhardtii*, *Cyclophyllum coprosmoides*, *Drypetes deplanchei*, *Dyospyros geminata*, *Eugenia reinwardtiana* (fruit).

5/3/06: Three North Rockhampton Gardens: (1) Atcheson's rainforest garden: *Pipturis argenteus* in flower and many species of *Syzygium*, including *S. boonje* in fruit. (2) Canoe Club grounds: Many *Lomandras* used for bank stabilisation, *Grevilleas* and *Callistemons* (nectar) attracting many birds. (3) Vandermeer's riverside garden featuring an elevated timber walkway winding down through the riverine forest to the water: *Lomandras*, palms, ferns, *Syzygiums*, *Ficus*. In each of these gardens the edibility of any plants was merely incidental; this was not the primary reason for their inclusion.

2/4/06: "Glencoe" at Yaamba on the serpentinite ridges: *Drypetes deplanchei*, *Melodorum leichhardtii*, *Siphonodon australis*, *Terminalia porphyrocarpa* (fruit), *Trophis scandens* (aril - a really heavy ripe crop) *Bursaria spinosa* (medicinal).

We have received a request from 2 contacts in northern NSW who are trying to source Illawarra Plum, Lemon Aspen and other native fruits to purchase. The contacts are growers and/or exporters, and due to the high demand for product, they have been unable to fill orders from their clients.

Please contact either:

Rebecca Barnes
Playing with Fire
02 6687 9254
ozberries@hotmail.com

Sheryl Rennie
Friday Hut Road Possum Creek
Via Bangalow NSW 2479
02 6687 1975
info@wildfingerlime.com

Tom Ling is looking for seeds or plants of Australian native citrus, namely, Desert Lime (*Citrus glauca*), Kakadu Lime (*C. gracilis*), Maiden's Australian Wild Lime (*C. maideniana*), New Guinea Wild Lime (*C. warburgiana*), and *C. australasica* var *sanguinea* to complete his collection. Email h.ling@qut.edu.au or work phone 07 3864 2162 if you can help.

Notes on the A.J.Swabby Address from the 23rd Biennial Conference and Seminar of the Association of Societies for Growing Australian Plants.

NEW DIRECTIONS IN RESEARCH ON WA BUSHFOOD PLANTS

Geoff S Woodall, Centre of Excellence in Resource Management,
University of Western Australia.

Most of the current commercial "bushfoods" are used as flavourings, spices or additives rather than staples. There are no Australian native species commercially grown for their edible below ground fleshy storage organs (though development work has started on Boab roots).

The flora of southern Western Australia contains a large number of tuberous species, many of which were routinely eaten by indigenous people prior to European settlement. Research aimed at developing new vegetable crops began by selecting a small target group of promising species:

Criteria for selection included:

- an unambiguous history of consumption
- no known inedible, unpalatable, toxic or anti-nutritional factors
- vegetative vigour
- reproductive vigour
- likely ease of propagation
- size, colour, flavour, texture and abundance of the potential product.

This approach suggested a target group of 3 species were worthy of further study, and possibly a particular selection of *Dioscorea hastifolia* may also be included following further field assessments and preliminary product appraisal.

The following summarises progress to date:

Platysace deflexa

- Appears to have considerable horticultural potential.
- It is known that each plant produces numerous relatively large yellow tubers, approximately 1kg per plant after 18 months, and mother plants appear to rapidly recover and sucker following tuber harvest.
- The tuber product appeals to the market.
- Tubers are nutritionally similar to carrots.
- Most people surveyed enjoy the taste and texture of the product when consumed raw or cooked.
- Mass field propagation is the main obstacle.
- Few pests and diseases.

Ipomoea calobra

- Easily propagated via seed or layering.
- Plant and product are similar in many respects to *Ipomoea batatas* (Sweet potato), and the white root tuber is pleasant to eat when cooked.
- Carrot sized product produced in 4 months.

- Currently growing this species under hot house conditions, the aim being to produce enough product for more detailed product appraisal.
- The nutritional benefit of the tubers is currently being investigated.

Haemodorum spicatum

- Easily propagated from seed under field conditions.
- Indigenous people used the bulb as a vegetable however, market assessment suggests that it is more likely to be used as a hot spice (cf black pepper).
- No data on yield available but the crop rotation is likely to be at least 2 years.
- Potential market (spice) identified.
- Nutritional analysis is underway.
- Possible food safety issues related to the accumulation of organic acids are being investigated.

The findings outlined are encouraging and it is hoped to make significant progress over the next 2 years towards delivering new horticultural crops that produce quality food in a sustainable manner.

LETTERS TO THE EDITOR

Edmonton.
Qld. 4869.
10.4.06

Dear Lenore,

It is a long time since I wrote but I thought I would let you know about the *Citrus garrowayi* plants that you sent me in 1998.

One has grown quite well and is now about 12-13 feet while the other was very spindly at about 6 feet. The recent cyclone toppled the small one but the bigger one stood up well.

It has flowered the last couple of years but this year fruited quite well. I made some marmalade which had a good taste but the skin was very tough and "chewy". They were very hard to cut up and had no seeds.

We were on the edge of the cyclone and did not have any material damage. A mile or so south and about the same north lost roofs so you can imagine the wind strength. Besides the small *Citrus*, *Antidesma bunius* were lost while *A. erostre* survived. *Myristica insipida*, *Syzygium luehmannii*, *Sterculia quadrifida* and an old *Macadamia* went over. Old mango trees all over the district were badly knocked about, and many old figs in parks etc were toppled.

It is hard to say some species survived better than others, as some were probably more protected for some reason or other.

Best wishes for now,
Jim (Hill).

Make your Own Mycorrhizal Inoculum.

This method of inoculating your plants with beneficial fungi is the result of research carried out by Sunset Desert Technology <http://www.sunseed.org.uk> Their mission statement is:"to develop, demonstrate and communicate accessible, low-tech methods of living sustainably in a semi-arid environment".

The following is based on an article in "Quandong", the magazine of the West Australian Nut and Tree Crop Association (Inc) Vol 32 No 1 (author not stated).

It is possible to make your own 'inoculum' from your own local soil. It takes about an hour or less to set up and is very simple to maintain.

Mycorrhizal fungi infect the roots of most plants, and supply the plant with nutrients like phosphorus, copper and zinc, as well as increasing water availability. The plant supports the fungus with carbon in the form of sugars. They are found in most environments, though their importance is greater in more extreme environments, where nutrients and water may be limited. There are very few plants (eg pines, firs, spruce and oaks) that do not form mycorrhizal associations at all, although most can grow without it. These include the majority of domestic and wild plants.

The most notable improvement should be an improvement in survival rate, and probably an increase in growth. Under the soil, a network of fungal hyphae will start to spread from your plant, gradually colonizing other plants and, in effect, starting to rebuild a healthy ecosystem.

You can use either pots or a 'trap trough'. The method is virtually the same for both.

You will need: An area to set up pots or dig a trench
Large plastic pots (5L or more) or waterproof plastic sheeting or similar
Spade or other digging implement
Seeds
Water
Sacks and/or wheelbarrow

You can be pretty sure of getting a good starter soil from any undisturbed area containing native vegetation including most grown trees, woody shrubs and perennial grasses. Collect from under local native vegetation in an area that has not recently been cultivated, (remembering all the pertinent regulations regarding such collecting). It is good if you can get some of the soil from under the same species as that on which you plan to use the inoculum.

Clear away about 0.5m² of the vegetation underneath your target plant. Dig down to a depth of about 25cm collecting the soil and as many fine roots as possible. It is better, but not essential, to collect from under several different trees and shrubs. With stony soils, it is better to seive it to get rid of large stones.

To multiply the mycorrhiza from your starter soil use either 'trap pots' or a 'trap trough', to grow mycorrhizal dependent annuals in the collected soil. These 'bait plants' will become infected and cause the fungal population to multiply. Using 2 different species (a Graminae or allium and a legume) will maximise multiplication (see table).

Select Species 1	Select Species 2	
Maize	Alfalfa	
Leeks	Beans	
Millet	Onions	Clover
Sorghum	Peas	
Wheat	Lentils	
Oats		

The best place is in a site that will not be needed for at least 3 months and where you can keep an eye on it. It will need regular watering, adequate light and protection from herbivores.

Either dig a trench about 100x50cm and 50cm deep and line with plastic, making sure it covers the whole trench with an overlap, and weigh the overlap down with stones and fill the trench or your pots with the soil. Soak the seeds of your 2 chosen species overnight. Plant them closer than normal, alternating the species. The soil you dig out of the trench can be used to fill the holes where you extracted the starter soil.

Water regularly and protect from frost if necessary.

Three months later, cut the bait plants at the base of their stems and stop watering. This kills the plant and tricks the fungus into producing reproductive spores. About 10 days later, pull up the roots of the bait plants which should be chopped into roughly 1cm pieces and then mixed back into the soil from the pot or trough. This mixture is the inoculum.

To use the inoculum, fill 2/3 of a pot or growing tube with normal soil, with a little compost mixed in if available. Then add a layer of inoculum a couple of centimetres deep and a layer of normal soil into which the seed is sown. When the roots grow down they will come into contact with the fungus, and from here on the plants are treated as usual.

To plant out a pre-grown plant, throw a spadeful of inoculum into the planting hole, then plant, sprinkling a little more round the edges as you fill it in. If transplanting, soak the root ball in water and then dip in the inoculum. The root ball will have a coating of inoculum. Plant as normal.

When you have used as much as you want, you can top up the pots or trough with more starter soil and replant with bait plants to start the cycle again.

Be careful. It is possible to accidentally cultivate pathogens rather than beneficial organisms. Be observant and choose soil carefully!

MORE ON AUSTRALIAN LIMES.

For many years, Australian limes (finger, round and desert), have been popular with native plant and bush food enthusiasts, but relatively unknown to other gardeners. Now they are finally beginning to join the Macadamia as an Australian native in mainstream gardens and commercial plantings.

Native limes occur in the warm regions of Queensland, New South Wales and South Australia and, until recently, were included in the genera of *Microcitrus* and *Eremocitrus*. All have now been included in the larger genus of *Citrus*.

The finger lime (*Citrus australasica*) is a particularly outstanding evergreen fruiting plant which grows four to eight metres tall by two to five metres wide with small, glossy, dark green leaves on thorny branches.

Small, fragrant white to pinkish flowers are produced mainly in autumn, followed by citrus fruits which usually have a yellowish-green to purplish skin and are about 10cm long by 1.5cm wide. They mature in winter and spring. The fleshy pulp is in small globular segments with an appearance similar to caviar, full of juice with a sharp lime flavour.

The segments can be squeezed from the fruit and eaten fresh, used in drinks, marmalades, cakes, desserts or other recipes, or used as a tasty and decorative garnish to cooking.

This finger lime occurs in the subtropical rainforest regions of NE NSW and SE Qld, but will grow and fruit as far south as Melbourne.

They can tolerate light frosts but appreciate watering during extended dry periods. Plants respond well to light pruning, which will encourage bushy growth.

New cultivars of this finger lime have been developed by the CSIRO and are available for the home gardener.

The Australian Red Centre Lime, also known as the Australian Blood Lime, to which Plant Breeders' Rights (PBR) apply, is a cross between a finger lime and a mandarin. The white flowers are flushed with purple on the outside. Foliage is also purple tipped. The oval fruit, usually mature in June-August, has dark red flesh and pink-red juice.

In the Australian Sunrise Lime (PBR), the finger lime has been hybridised with a calamondin (a cross between a mandarin and a cumquat). The fruit matures from July to September and is somewhat pear shaped with orange flesh and juice. The new foliage tips are reddish and white flowers are produced mainly in spring.

Citrus australasica var *sanguinea* 'Rainforest Pearl' is a pink-fruited cultivar of the finger lime with PBR classification applied for by Byron Bay Native Produce, Bangalow, NSW.

Besides the finger limes, there is the Australian Desert Lime, *Citrus glauca*. This occurs naturally in more arid regions of inland

Qld, NSW and SA, and in cultivation. Plants are relatively erect and can grow 2 to 7m tall with small dark green leaves and reddish new tips on spiny stems. Small, rounded, juicy green fruits up to 2cm across are produced later in the year than the finger lime varieties; about Christmas to late summer.

These lime plants are well-suited to container cultivation or as decorative evergreen garden trees. While it is important that our native plant species be appreciated and retained for their genetic integrity and as part of our natural heritage, it is also exciting to see them being developed in conjunction with other closely related species to produce new cultivars.

The Blood, Sunrise and Desert Limes are available as grafted standards from the Australian Lime Collection, Floriana, 385 Greens Road, Keysborough, Victoria 3173.

Australian Citrus species are grown by specialist Australian plant nurseries, rainforest nurseries and fruit tree growers.

Further information is available from a number of computer references, including the CSIRO website and by searching under "Australian Limes".

(Article compiled from information in "Australian Horticulture" November 2005 and "Quandong" Vol 32 No 2).

INFORMATION ON EMERGING INDUSTRIES

www.rirdc.gov.au

SECRETS OF BUSH TOMATO

Researchers are lifting the lid on the secret reproductive life of one of the bush foods industry's greatest hopes, the bush tomato or desert raisin (*Solanum centrale*).

"Many people think that bush tomatoes reproduce only from seed. Our detailed study of the plant's biology shows that it's much more common for the plants to use their very extensive underground root system," says Dr Maarten Ryder, who leads the bush produce project of the Desert Knowledge Cooperative Research Centre.

Dr Ryder says the underground stem throws out suckers, similar to couch grass: "Our researchers have dug out a two metre long part of an underground stem in one bush tomato patch near Alice Springs that had about 10 different plant shoots coming off it," he said.

The research, in cooperation with Angie Dennett and Professor Lester Burgess of Sydney University, will help the native foods horticultural industry to design production systems that take into account how the plants reproduce.

"The simplest and most successful way to propagate clones of good bush tomatoes may be to let them do their own thing through forming the underground stems, rather than take cuttings," he said.

The discovery will also help to develop more efficient irrigation systems and might prompt producers to change their weed control techniques.

"The weed mats that are used around bush tomato plantings could be discouraging the plant's suckering habit and may have to make way for better technology," he said.

Professor Zora Singh and Dr Maria Jose de Sousa-Majer, researchers from Perth's Curtin University, have also developed a low-tech solution for one of the biggest barriers facing the development of the bush tomato within the native foods industry - the insect pests which currently destroy 20 to 40 percent of stored bush tomatoes, depending on the harvest region.

"Heat treatment followed by hygienic storage at room temperature controls insect pests such as the Indian meal moth effectively and is cheaper than freezing bush tomatoes," says Prof Singh.

Dr Ryder says both discoveries have strong potential to increase profits of bush food growers and wholesalers. Bush tomatoes and wattle seeds, two desert species, are the biggest value creators in the growing bush foods market.

"Farmed bush tomatoes might one day help to overcome supply problems experienced by bush foods wholesalers who now rely almost entirely on wild bush tomatoes hand-gathered by Aboriginal people in remote desert communities," he said.

Over the next three months, Dr Ryder and his team are collecting the harvest results of new horticultural trials of bush tomatoes in various Central Australian desert locations.

GROWING NATIVE YAMS

By Zig Madycki, Jabiru, NT.

The word 'yam' derives from an African word meaning 'eat'. Often in the local pidgin up north here, and sometimes in English, it's used to denote edible underground tubers. However, strictly speaking, it refers to the tubers produced by *Dioscorea* species vines, a predominantly tropical group of plants originating in rainforest environments.

The scientific name derives from the name of a Greek physician (or botanist), Pedanius Dioscorides, who authored the oldest surviving book on medicines, *Materia Medica*. Nonetheless, the use of yams in cultivation predates our noteworthy Greek by thousands of years, and in many areas these still remain an important food source, particularly in the tropics. My use of the word yam will be specific to *Dioscorea* species.

Yams comprise several hundred known species worldwide and many of those in cultivation for so long have now developed into numerous varieties. There are two native species growing in this area: *Dioscorea bulbifera* is known variously as cheeky, round, or water yam,

and 'manyawok' in the local Aboriginal language. *Dioscorea transversa* is called long yam, or, in the local language 'karrbarda'. These grow along the margins of watercourses or rainforests, usually in organically rich soils, with long yams keeping more to better drained sites, although occasional monsoonal flooding doesn't appear to have adverse effects. Cheeky yam occurs mainly across the monsoonal top of Australia, whereas long yam covers this same area but also extends considerably southwards, as far as SE Qld and the northern half of coastal NSW.

These yams were an important part of Aboriginal diet and were significant in the mythology. Long yam was sometimes eaten raw or else roasted in hot coals. Mothers would also grind it into a paste and feed it to babies. It is believed that long yams contains compounds which helped prevent diabetes, a disease which has become common since the advent of supermarket food. Cheeky yam ('cheeky' in the local pidgin means bitter, or even poisonous in reference to plants) required special treatment to make it palatable. Usually it was roasted in hot coals, sliced thinly with a knife, called 'djaberleno', made from the shoulderblade of a kangaroo, placed in a dillybag and then left in running water overnight. This leached out the bitter substances and it was eaten cold.

Although the bulbils of the African and Asian varieties of this yam are eaten in those areas, this wasn't the case here. The bulbils are called 'mimno' locally, a generic word for plant seeds. Overseas though, I understand that the bulbils of African varieties are considered more palatable than the Asian ones.

Both yam species have similar growth habits and have superficially similar above-ground parts. There are separate male and female plants of similar appearance, the flowers being the main difference.

Long yam has a generally more wiry stem that twines anticlockwise around anything nearby. Leaves are heart shaped with the lobes usually well spaced and the midrib from 10-12cm long. Sometimes in young plants the lobes also overlap. The female plants are minute, along clusters of small pendant stems, whereas male flowers look similar but without the ovaries, and the flower stems are upright, or at least curve upright. It produces bulbils in the leaf axils which, like the tubers, are carrot shaped, even if a little curved.

Cheeky yam varies from looking very similar to long yam, to having thick stems and much larger rounded leaves, up to 30cm in diameter, with the lobes more commonly overlapping. However, it always twines clockwise, its male flowering stems are pendant, as are the female ones, and the bulbils are potato shaped.

The tubers of the long yam provide its name. They are elongated, varying in size up to 30cm or more. Cheeky yam has a rounded tuber with a hairy mass of roots. Alongside the yam tuber are usually the shrivelled remains of the previous year's tuber, called 'djalkoyno' locally, the current year's being 'darrkidno'. Traditionally, when the yams were dug up the top of the tuber, called 'ngalbaydjanno' (mother-part), along with part of the attached stem, was replanted. If replanted properly, the mother-part would provide food for you next year.

Female flowers develop seed, called 'lirrilirrinno', meaning specifically, yam seeds. Pods have three lobes at 120 degrees to one another and contain about six flat, winged seeds which are wind sidpersed. Cheeky yam seeds have an oval profile, while those of long yam are more circular.

Cheeky yam seems to grow more easily and vigorously than long yam, but generally their requirements are much the same. If grown from seed they germinate relatively rapidly if conditions are right. As they don't seem to develop a large size in their first year, I plant them in containers in sandy loam with a lot of well-rotted organic matter. The seeds are placed on the surface of the soil and then covered very lightly. This is watered well and kept moist. Single heart-shaped leaves should begin to emerge from about two weeks. These plants remain small but develop a tuber during their first year and should be kept reasonably moist.

Best time for planting is when the weather begins to warm up at the end of the dry season, around September. This will give the plants a better chance to develop over a long period if they are kept moist and growing right back into the following dry season. As leaves begin to yellow the watering should be reduced. I have found that generally yams don't respond to fertilisers but do to the addition of organic matter, so I wouldn't be tempted to use chemical fertiliser. When the leaves die down the containers can be left unwatered for the remaining dry season.

With the return of the warmer weather the individual small tubers can be removed from the containers and planted out. The second year of growth should provide larger tubers. These plants should also provide more seed and bulbils for further plantings. An alternative to using containers is to just scatter the seed, preferably in an out-of-the-way place which doesn't get watered during the dry season. Where I've scattered seed and bulbils around my ordinary gardens I've found that over time it's mostly the cheeky yam that keeps growing back.

Planting bulbils can be done in much the same way as the 'baby' tubers.

I've never cut up large tubers for planting, but damaged whole ones seem to rot rather than germinate. Again, the cheeky yam seems to be a better survivor. It is also a far more attractive plant with its larger 'netted' leaves.

Another method of propagation is from cuttings. This is best done at the start of the season while growth is still new. Fifteen to twenty centimetre lengths of stem are cut. I dip them in a rooting powder to prevent rotting. There isn't much growth in the first season, but when the plants die back they leave small tubers in the soil which can be treated as above.

The plants can grow very high, up to 4-5 metres easily, and so need some reasonable support, although it doesn't have to be high. In the garden they can be interplanted with vegetables which usually appreciate some shade in the tropics. Grasshoppers tend to attack the new young leaves, but otherwise I haven't found any real problems. A no-dig garden is ideal as a growth medium, but ensure there is a lot

of ash mixed in as most tuber crops have high requirements of potassium. If planted in ridged, well-composted soil tubers can easily be lifted as required rather than harvesting for storage, thereby avoiding damage.

As far as cooking yams goes, I use the Aboriginal methods. However, they should be able to be used the same as potatoes, the cheeky yam being leached at some stage to remove the bitterness. This would generally mean using the cheeky yam mashed, or at least finely sliced. Some people say they have a bland taste, but then taste is always a matter of opinion. Spicing them up during cooking is an option.

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SNIPPETS:

Welcome to new member Brenton Kortman of Bridgewater, South Australia.

There was a very interesting article in the September 2005 "Australian Plants" on research into Australian grasses looking for a perennial grain crop. *Microlaena stipoides* (Weeping Rice Grass), has been identified as worthy of further study. Most of you will have seen this already, but if you missed it, it's well worth reading. I can forward a copy to anyone who hasn't got it.

The DPI is currently checking to see if there are any cases known of fruit fly attacking Cocky Apple (*Planchonia careya*). If you notice (or have noticed) fruit fly larvae in Cocky Apples, please contact either the DPI, or me, and I will pass the information on to Neil Hoy.

The Shire of Dalwallinu in West Australia has been awarded \$10000 in funding through the Wheatbelt Development Commission's Wheatbelt Regional Development Scheme to contribute to a feasibility study into a wattle seed industry in the shire. More funding will be sought through other means in the coming months for the study, and it is understood the study will go out to tender within the year.
