

**Australian Food Plants Study Group**  
**ANPSA - Australian Native Plants Society (Australia)**  
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**Membership is open to all financial ANPSA members & complimentary  
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**This issue....long overdue I might add....will start off featuring several growers of Finger  
Limes around Australia. Cheers Sheryl.**



**Jude Mayall has recently opened up a new venture - Wild Food Farm, 30 Rhyll-Newhaven Road, Rhyll, Phillip Island, Vic. 3923. The gates are now open. It's a really exciting time for OutbackChef; they have a wonderful new home where they can showcase their produce and grow a lot of the native plants that feature in their products. The Wild Food Cafe is also open for business.(M) 0409 170 647 [jude@outbackchef.com.au](mailto:jude@outbackchef.com.au) <https://www.outbackchef.com.au/> .**

**Grant Applications being accepted** Healthy Land and Water is encouraging community organisations to submit an Expression of Interest for small grants between \$1000 and \$5,000 to assist with natural resource management within South East Queensland. To apply, please discuss your project idea with your local Healthy Land and Water contact and provide a completed EOI form to them or to [info@hlw.org.au](mailto:info@hlw.org.au) by **11:30pm Friday 19 June 2020**.

[https://hlw.org.au/make-a-difference/grants/community-nrm-activity-support-grants-2020/?utm\\_source=HLW+Email+Subscribers&utm\\_campaign=566840b6b1-EMAIL\\_CAMPAIGN\\_2020\\_02\\_14\\_06\\_03\\_COPY\\_01&utm\\_medium=email&utm\\_term=0\\_2fcf9c074f-566840b6b1-343016157](https://hlw.org.au/make-a-difference/grants/community-nrm-activity-support-grants-2020/?utm_source=HLW+Email+Subscribers&utm_campaign=566840b6b1-EMAIL_CAMPAIGN_2020_02_14_06_03_COPY_01&utm_medium=email&utm_term=0_2fcf9c074f-566840b6b1-343016157)

**Green Valley Finger Limes, 114 Stirling Rd, Beerwah, Qld.**

**Jade King 0405 125 791** [GVAgriculture@gmail.com](mailto:GVAgriculture@gmail.com) <https://greenvalleyFingerLimes.com/>



Jade grows Red Champagne, Chartreuse and Emerald Finger Limes and has a passion for soil chemistry, plant physiology, entomology and all things agricultural. She has over 15 years' experience in Soil Science and Agronomy, with experience ranging from laboratory soil analytical testing to in-field soil remediation and agronomic services and was awarded Under-Graduate Award for Excellence in Soil Science whilst studying and have since founded an Agricultural Science department for the Glasshouse Christian College. As part of this role she teaches OP/ATAR level Agriculture, runs the Agricultural Plot and aims to inspire the next generation to consider careers in the fastest growing industry in Australia; Agriculture! She also runs the Agronomic Services department for the local cooperative and has now finally established an independent professional Agronomy Consultancy business. In addition to the usual agronomic services of soil and leaf interpretations for annual nutrition programs, she runs workshops that encompass ION, IPDM, introduced technologies such as LiDAR, NDVI and EM, and worked on soil health and composting and also run trials with DAF Nambour, including with polymer coated nitrogen and assessing the accuracy of EM technology within orchards. She also conducts Pest Scouting in tree crops. Jade's farm also raises cattle and chemical free produce. She has received a grant from the Department of Agriculture to buy equipment that will allow the fruit to be snap-frozen. This will extend the shelf life of the Finger Limes. Prior to Covid-19 fruit was being exported to Italy and Singapore. In their orchard, Champagne Red is a

consistently cropping commercial cultivar. Champagne Red has year round flushes of flowering, as well as heavy spring flowering, allowing supply through all seasons. Its superior shelf, also makes it a preferred variety for use as a fresh fruit export.

**Greg and Amanda Childe-Freeman, Boutique Citrus Finger Limes**

**170 Bellthorpe West Road, Bellthorpe Qld 4514 07 5496 5175**

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2020 has arrived along with an early start to our finger lime season. It's been a difficult start to the year for many people across Australia experiencing extreme drought and devastating fires across rural and regional areas along the east coast of our country. We have also been experiencing drought but nothing to the level that has been seen in other areas. For the first time in over 30 years, we have seen our area of Bellthorpe become brown and dry and bush fires and smoke a regular feature of what is normally extremely lush vegetation. We are glad we had the capacity to build large dams on our property many years ago which has allowed us to maintain our watering regime on the finger limes and other crops over the years. That said, pumping out over 1 million litres of water ever week is a big deal and certainly making a difference to the water levels in our main irrigation dam. Finger limes are thirsty and some of our trees are 20ft high which means they need plenty of water! Rain is also much needed here but we'll wait our turn behind our fellow farmers down south and out west. Grateful are we for the particularly big crop we have on and are excited to see just how much we yield during the 2020 fresh finger lime season. We began picking just before Christmas and our first major export shipment is due to leave very soon. The family-owned 150 acre property is located in the stunning Sunshine Coast hinterland of Queensland. It has over 5000 citrus trees that not only grow finger limes, but also Tahitian limes, seedless lemons, and kaffir limes.

Greg has been farming at Bellthorpe, between Maleny and Woodford, for 24 years, firstly as a deer farmer and then as an avocado grower. "About 10 years ago I was looking for a diversification option and finger limes fit the bill," he said. "They sounded interesting and native, and I liked that you could freeze them – they just piqued my interest." He once had 4000 avocado plants and 1000 finger limes, but the success of the venture into citrus – they also grow Tahitian and kaffir limes, and seedless Eureka lemons – has seen that ratio reverse to just 1000 avocado trees among the 7000 fruit trees now growing on the 64-hectare (160-acre) property. There are more than 40 different varieties of finger lime in the wild, which is native to the rainforests of southeast Queensland's border ranges and northern NSW, but Greg and Amanda's Boutique Citrus business concentrates on six varieties. Every tree is watered by an under-tree mini-sprinkler system, an absolute necessity during flowering and fruitsetting times.

"They look like a desert plant – they've got a small leaf and they're very thorny – but they're very thirsty," Greg said. Their thorns mean that Greg dresses like he is going into a jousting match, with elbow-length leather gloves and other protective gear, at harvest time. "It's very time-consuming. Picking is all done by hand to protect the fruit. "You nestle them in your hand and draw them out to protect them from the thorns and extend their shelf life." Finger limes have a thin skin and the delicate fruit can swell and burst in extensive wet weather. The crop is subject to the same diseases as most citrus plants, primarily scale and borers. A 'death prune' – cutting out all the dead or dying wood and burning it – is conducted on a regular basis. As well as the ongoing husbandry work, Greg is busy breeding and propagating, in order to ensure the best quality and variety are available. The finger-lime industry is still relatively new, and Boutique Citrus is working with other industry members to develop new commercially viable varieties. Greg believes processing will be the key to the industry's future, to enable more plantings, higher production and a year-round supply. At the moment, the harvesting season is from February

through to May. Freezing the fruit extends the availability and means that it can be exported to countries that won't allow fresh fruit into their country.

As a niche-market product sought after in the world's best restaurants – they supply many Michelin and hatted restaurants – Greg and Amanda are open to specific requests, such as the one from a Japanese customer who wanted nothing longer than 6cm. “Their average size is 8 to 12 centimetres so we had to do a lot of sorting,” Greg said. “But we got a premium price.” Boutique Citrus is all about ensuring a supply of premium quality fruit, according to Amanda. “Our total commitment to this is the reason our customers return to us each season,” she said. They have global GAP certification and are busy building worldwide awareness of their incredible fruit. “The world knows finger limes better than Australia does,” Greg said. “I think it's a market that is still expanding. I got into deer farming at the tail end, so it's been nice to get into this at the start and help steer it.”



Ref: <https://www.queenslandcountrylife.com.au/story/3899401/sweet-and-sour/> & Qld Smart Farmer.

### **OZ Finger Limes in Victoria**

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Branding helps build consumer awareness for unique product grown in even more unique location.

Why here? It's the question at the forefront of your mind as Vladimir Zivkovic greets you from the gate of his finger lime orchard. The small plantation springs out like a tropical oasis as you travel down a gated gravel road on a barren cattle farm in the north east corner of the Australian state of Victoria. It's just gone 9am and the mercury at the Boorhaman property is touching a barmy 32°C, a pleasant relief according

to Zivkovi after a run of consecutive days above 40°C. “Don't worry,” he quips. “We get our cold days here too; in winter it can get down to -7°C.” A quick survey of the landscape and you realise the extreme weather conditions ensure not much survives out here; some Eucalypts are

dotted across the swamp flats that skirt the orchard's western perimeter, while a herd of Herefords watches on from beyond the fence line as Zivkovic, or Vlad as he goes by, leads a tour through the orchard rows. As he cuts into a piece of fruit to expose a bursting array of lime-scented vesicles, Zivkovic explains there are a few factors in his favour. A bore on the property provides a reliable water supply, which is meticulously delivered to the trees. "What I've found is finger limes can easily be overwatered, they thrive in semi-dry conditions," Zivkovic says. "I don't pay anyone to look after the crop, I want to oversee it all myself, so I travel from Melbourne twice a week to water the trees."

The isolation of the property at Wangatta means Zivkovic doesn't have to contend with the same pest management issues faced by growers in northern New South Wales and southern Queensland, where the majority of Australia's finger lime crop is produced. "The only insect I've seen out here is a grasshopper," he explains. Furthermore, the low humidity levels in Victoria are not conducive to the build-up of fungicides; a problem growers in other production areas commonly face. Consequently, Zivkovic can produce a crop according to organic guidelines, with the fruit capable of being marketed as certified organic. Still, the question lingers, why here? "If you don't take a risk you go nowhere," explains Zivkovic, a Serbian-born horticulturist who was a leading authority on wine grapes in New Zealand before setting up the OZ Finger Limes operation eight years ago.



"If I don't do this out here, I won't know where the limits are for finger lime production." In essence, the orchard serves as a laboratory; a proofing ground for the varieties and techniques required to grow this unique crop in the harshest of conditions. To date, a key focus for the OZ Finger Limes business has been the sale of plant material that has been tried and tested by Zivkovic. This programme is managed from a nursery in Melbourne. This season will mark the first commercial-scale harvest of fruit from the

Boorhaman orchard, which has over 4,000 trees planted across 25 varieties. The harvest period of mid-January to late May is around five weeks later than Queensland and New South Wales. With Zivkovic planning to expand his production base to over 15,000 trees over the coming years, he has engaged Adrian Parsons of 160 Acres Group to market the fruit. "There were many sceptics who said finger limes couldn't be grown in southern Australia due to the colder temperatures," says Parsons. "However, we have dispelled this myth thanks to Vlad's specialised planting and fertilising methods, which are unparalleled in this sector." High in Vitamin C, folate, potassium and Vitamin E content, finger limes are often referred to as citrus or lime caviar. In Australia they are predominantly sold through the wholesale sector to customers in the foodservice industry, where they are commonly used as a garnish. In a bid to lift consumer awareness, 160 Acres Group has developed the Zings brand for retail distribution, where the fruit currently has a relatively low profile. The brand has been designed to encapsulate the flavour profile of finger limes. retail outlets," says Parsons.

Fruit is ripe when it easily comes off the tree without the need to pull it off hard. They will also come off by shaking. Fruit colour of most varieties will become maroon red or dark brown (Alstonville, Byron Sunrise, Collette/Emerald) the skin on green varieties will turn yellow.

We will pick most fruit when it is fully ripe just like olives; two people will collect 500kg a day.  
<http://www.fruitnet.com/asiafruit/article/178574/oz-finger-limes-add-some-zing>



Vlad has been researching finger limes for the last 10 years; his background is in horticultural science. Many varieties are created by Vlad and he also has an extensive program producing hybrids between finger limes and other native Australian citrus. Most successful so far is a cross between the Russell River Lime and Finger Lime where hybrid plants will fruit in the second year from the seeds with finger lime fruit. You can find more about it on his Facebook page Ozifingerlime. By having a block in extreme climate conditions for growing finger limes (from -8 to +50 degree) Vlad has generated unique knowledge. Knowing how finger lime (per variety 34) behaves in a cool climate especially, has opened the door to export markets.

To have predictable and consistent finger lime yield it will involve several key factors. One of them is the choice of rootstock. I have tried to follow all possibilities when it comes to planting, Cutting, seedlings, rootstock types, grafting methods....

Cutting grown will not have resistance to soil pathogens, so after a few years, plants will experience dieback which will require intensive pruning causing all sorts of new problems (small trees, sudden citrus decline disease, pruning, increased cost etc) At the end of the day it's the reason why we graft all citrus trees in commercial orchards; to extend their healthy productive life.

Seedlings as you probably already know will take ages to fruit. I have found that the most commonly used rootstock for grafting citrus trees, Trifoliata, does not work well with finger lime in climates where we have cold winters. Trifoliata is a deciduous plant and it will go dormant during winter, in areas with even slight frost, plants will show signs of drought (leaf drop) which mean that water uptake is stopped. If we have several frosts, plants will drop too much of the leaves and damage will occur. By using evergreen rootstock which will continue to uptake water even with frosty temperature, plants will have less damage. Several other factors are involved to help finger lime survive minus temperature without damage (fertilizing program...) I have had feedback from many customers and finger lime growers from around the world - this is my conclusion:

Trifoliata is good for hot climates with high rainfall like tropical countries or subtropical with lots of rain, (Vietnam, Hong Kong, Hawaii, Florida, New Zealand north). Finger limes grafted to this rootstock will also have a slow start, about a year behind other two rootstocks. Grafting is harder with more losses. Choice of variety will be crucial for growing in tropics (many varieties will produce super small fruit or no fruit)

Troyer is great for dry irrigated land (California, parts of Australia, Arab countries, South Africa, Israel), cooler climate also. It can be used for high rainfall areas but plants need to be planted in a raised bed for better drainage. This is a vigorous rootstock but we are still able to pick fruit from the ground even when trees are fully mature (6th year around 2m high on average).

Swingle, improved Troyer by characteristics and I have been advising customers in all climates to try this rootstock with great confidence. I believe it is the best of all.

Flying Dragon will shorten growing season in cooler areas and is not recommended, subtropical and tropical climate.

Rough Lemon I will use it only for pot plants (garden centres) because of fast growth.

Plants are sold as tube stock (one to two years old plants) and plants in 4L planter bags (2-3 years old flowering/fruited plants) (see picture) I also have several varieties in 15-20L pots (5 years old fruited plants) this plants are too big for shipping and they can be only pick up from Glenroy 3046 Melbourne, Victoria.

Ref: <https://www.freshplaza.com/article/9053137/zings-finger-limes-launch-in-australia/>

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**email: [info@rosebankgrowers.com.au](mailto:info@rosebankgrowers.com.au) <https://www.FingerLimesfresh.com.au/>**

Finger Limes Fresh provides professional nursery, processing and export facilities to finger lime growers. In addition, Finger Limes Fresh offers a management advisory service for new and current growers covering all aspects of finger lime farming with the goal of creating sustainable growth for this emerging agri-food market. The nursery is a large facility that has capacity for the propagation of 100,000 plants annually. The plants are either propagated by cutting (majority) or grafting (wedge grafts on a variety of scion stock). Plants are supplied to wholesale nurseries and commercial growers. We do not supply small retail sales. In 2019 we established a tissue culture facility for supply of plantlets to wholesale nurseries and to allow propagation of finger lime varieties year round. Addition of large heat beds also facilitates propagation through the cooler months of June to September. These facilities are also providing Lemon Myrtle (*Backhousia citriodora*) cuttings and plantlets for commercial growers and wholesale nurseries.

If you are considering venturing into this as a business, here are some thoughts you should take into consideration:

### **Processing facilities**

Processing facilities include large cool rooms, washing, waxing and drying processors, grading, sorting and packing machines. The processing facilities are licensed by the NSW Food Authority to process fruit and fruit products.

### **Grower Suitability**

Many enquiries focus on the need to 'grow something' to replace slashing grass or weeds in a hectare or more in a small rural block. There is also a desire to provide an income from a sustainable crop. There are several important considerations before you consider finger limes as an income producer.

1. What is your previous horticultural experience?
2. What is your market – Farmer's Markets, Regional Market agents, Direct to restaurants or finally exporting.
3. What is the suitability of available land\* the local conditions for growing finger limes.
4. What infrastructure do you have – irrigation, orchard equipment (sprayers / tractors / mowers etc)
5. What resources are available in your area – transport, pickers, Ag suppliers etc and how much time do you have.
6. What is the current / future NFG return of finger limes.

Firstly, the following comments are ours, and may not be in agreement with other growers. This is an emerging industry and has remained in the background for a number of reasons that are addressed in the above questions. It is our opinion that the industry will never achieve market acceptance and recognition until large producers become active. Growers to date have been dominated by small 'hobby farmers' of 300 to 1000 trees of varying varieties. There is a small group of 1000 – 4000 trees and even smaller group of growers with large number trees. Many of the smaller growers have been coordinated/aggregated for volume supply by brokers or agents. There are some issues for growers here. Mainly you become a price taker and will find competition from larger growers increasing. The returns these small growers receive will decline as large producers with capital intensive operations will become the predominant supply chain. There is an increasing requirement for accreditation and food safety especially to Market agents and for export. Freshcare and Global Gap are now mandatory for these markets.

Farmers markets and direct to Restaurants are probably the only market available to small growers. However, these are very small markets with supply demand already met by many small growers. You should also be aware that finger limes are now grown in many areas of the world and include California, Morocco, South Africa, Spain, Italy, Malaysia and Thailand. Some of these countries / areas have an advantage in that they are fruit fly free. Australia is NOT and is prohibited from exports to markets such as Japan. The story is similar to Macadamia nut. Now for some good news! The market/demand has grown at a very fast rate in the past 2 years. However so has the requirement for quality, variety and accreditation.

## **Growing Finger Limes ...so after all that information you still want to grow finger limes!**

### **Basics**

You need a soil that is well drained and a pH of 5 – 6.5 OR use a citrus root stock that will be optimal in higher pH.

You should plant in a north south alignment.

You will require drip irrigation (more efficient than sprinkler). Water requirements vary as to season conditions and age of plant. You may need up 20L per tree per week. for 1000 trees this is 20,000L.

You can fertilise with a band spreader (prill) or fertigate using the dripper system.

You need to prune the tree each year to remove dead branches and to open up the tree to prevent fungal problems and to keep the tree at a manageable height and width for picking.

Finger limes are NOT orange or lime trees in size and do NOT need to be planted as a traditional citrus orchard.

You can plant in higher density. For example 1.5m between trees and 4m centres on rows.

The rows are normally mounded (500mm) to minimize to reduce wet feet and optimize contouring and run off.

4m between row allows for access of trucks/tractors etc. It is also optimal for mowers 60-70" or more.

The trees need fertilizer 3 times a year – 300gm per plant (established)

The trees need addition foliar sprays of Zn, Mg, Cu and S.

You will need to spray Copper (Cu) and Sulphur (S) sprays for mites and fungal control

You will need to spray / bait for fruit fly

You will need to introduce a program for control of citrus bugs

You will need to keep weeds and grass in check with regular understory spraying (quad bike).

### **Yields**

Some growers have boasted of 15 – 20kg per tree. It is a bit like asking what colour is a rainbow. Growing a tree to 6m may produce 20kg but it is very difficult to pick and is mainly vegetation. The mantra for orchard growers in the Apple/Pear industry and more modern plantings of

common fruit crops is: “Are you growing fruit or trees”. The net result of a large tree is most of the energy (fertilizer) goes into the tree not the fruit, which generally results in smaller lower quality fruit. The exercise is about optimal planting density vs yield and ROI per Ha. In our experience the best yielding varieties produce approx 1- 2 kg in year 2 with an increase of 1 – 2 kg per year to year 6. The tree height will be maintained at 1.8M However, selecting A grade for sale results in a high wastage (as high as 50%). Different varieties produce a wide range of foliage and structure. Some are woody, upright and open, others weepy, low and dense. The dense foliage is prone to fungal issues unless well (savagely) pruned.

### **Harvesting**

The fruit flowers in July/August (for the latitude of this farm) and fruit is ready in early December to June. Most varieties peak in January / February. Some varieties will fruit all year with flushes in December/January and again in April / May. The fruit is picked direct into buckets with a harness support that allows both gloved hands to pick. The gloves are long heavy duty gardening (rose) gloves. Long sleeve shirts are desirable as well as eyewear to protect the eyes. The fruit should not be picked wet; it is more susceptible to splitting and oleosis. It should be stored dry before packing or distribution.

### **Post Harvest Processing**

Finger Limes Fresh have a post-harvest process that includes a wash in hyochlorite or peracetate (to sanitise and reduce bacterial load), scrubbing to remove grass and other rubbish, drying and waxing. The wax reduces dehydration and extends shelf life. The waxing process also involves a quality grading line before boxing. The processed limes are then stored at 8C in cool rooms before distribution. They will last up to a month at 8C if processed as described. Seconds or fruit older than 1 week is processed in the food grade kitchen and the beads (caviar) extracted by specially designed equipment for packaging into sachet or zip lock bags. There is also a market for seconds and the rind waste from extracting the pulp. The cosmetics and food processing industry is exploring finger limes as additives in products. Fruit is also packed into punnets on a punnet machine.

### **Tree types**

These are examples of different tree types – open, weepy, dense.

### **Pollination**

The flowers are pollinated by native bees and honey bees and the thorny trees provide a natural habitat for small birds – many wren nests are hidden in the foliage. Small tree frogs can also be found on the leaves, especially during the wetter months.

### **Questions?**

#### **What can I use Finger Limes for?**

Finger limes are great in salads, desserts, ice cream, panacotta and as a garnish for seafood such as oysters and fish.

#### **What about drinks?**

Although there have been many recommendations for using them in Gin and Tonic, Rum Punches Cocktails and many more, they are not a substitute for normal lime (Tahitian) juice. The fresh citrus flavour of finger limes is released only when the juice bubbles burst upon biting or crunching. However, both the flavour and texture of finger limes works perfectly with lime juice. Pink beads have the same taste as green.

### **How long will they stay fresh?**

It depends! Finger limes are best picked in the morning and should not be picked in after heavy rain or wet periods. They should not have blemishes such as insect damage (citrus bugs and fruit fly) or ruptured skin or be soft on the ends. If the fruit has not been sprayed (with Copper) for moulds, then be assured it will not last long and start showing blue green moulds within a week. Finger Limes Fresh washes the fruit direct from picking in Hypochlorite solution, which is then dried and waxed with canoubia wax. The waxing reduces up to 30% the loss of water content. The fruit is then packed into box 1 kg cartons and stored in cool rooms at 5C before shipping. Our finger limes have been shown to last a minimum of 2 weeks at 25C or 1 month in fridge at 5C under these conditions. If frozen they will last many months. However, thawed frozen finger limes are no substitute for fresh!

### **How do I know if I have a fresh finger lime?**

OK – So you know how a bean snaps when fresh? When it is immature or old it bends but does not snap easily? Well same applies to finger limes. In addition, if you cut a finger lime in half it should ooze the beads out without forcing them. This does not happen with frozen or old limes. The Brix value (8 – 11) of a ripe optimal ripe finger lime is also a good indicator. High is rotten, low is green. Green (immature) finger limes also have a bitter astringent taste. However, some varieties are naturally like this.

### **What about Blemishes on the skin of the finger lime?**

Finger limes grow on a very thorny shrub. In windy conditions these thorns rub the skin causing lesions. Light damage is not an issue although Finger Limes Fresh class these as ‘second grade’. Other more serious blemishes are ‘stings’ from fruit fly and citrus bugs’. This is caused by these insects injecting eggs into the fruit. The fruit shows a small (but increasing in size with age) discolouration caused by rind breakdown from natural as well as bacterial effect. It may totally rupture the fruit causing beads to burst out causing more rot. There are some other problems such as end collar rot which can be prevented with copper spraying. Lastly the effects of citrus bud mite which causes large areas of the fruit to be irritated (opposite the sun) and produce a sandpaper look. Not to be confused with sunburn?? Controlled by sulphur sprays.

### **What varieties of finger limes do you sell?**

There is a lot of confusion, duplication and misinformation regarding finger lime varieties. Almost all finger limes currently being grown are direct from native sources. **They have not been bred.** Confusingly, many varieties of finger limes are known by several names. To provide clarity, Finger Limes Fresh has developed a classification system that identifies (reasonably well) the over 40 varieties of finger limes that we grow on our plantation.

For example:

**GPM** – Green skin pink Flesh Medium size

**GPL** – Green skin Pink Flesh Large fruit (> 20g)

**GEM** – Green skin Emerald green flesh Medium Size

### **Do you sell finger lime trees?**

Yes, we have a large nursery primarily for our own use. We currently have 10,000 trees planted. We provide cuttings and grafted stock. The plants take from 1 – 2 years before suitable for planting and another 2 years to yield from 5 to 10kg of fruit per tree. We do not sell individual trees. Propagation is to order only and a 20% deposit is required.

### **What is the advantage / disadvantage of cuttings vs grafts?**

Grafts have traditionally been used in the Citrus industry (Trifoliata and Citrange root stock) mainly to facilitate planting in a wide range of soil conditions. In our experience cuttings, in our location, are just as vigorous and yields as high or greater than grafted trees. There are many reasons – local soil conditions that are native to finger limes and that Trifoliata and Citrange may not necessarily be the best root stock. There is also research that shows that some root stock varieties do not always give the correct nutrition uptake as others for specific grafted species. Meyer lemon is a good example. The deep root system of a traditional citrus root stock is not providing the same nutrition as a shallow (top 30cm) rain forest derived naturally occurring plant would have acclimatised to. Why? Because Finger Limes grow well from cuttings and you can produce 50 cuttings in the same time as a graft takes. There is another more obvious reason. Grafting does not require the capital intensive structure that misting tunnels and long strike periods (3 months) require. Grafted trees can be held in the nursery for longer periods before sale. The higher cost of grafts reflects the many steps and high labour cost.

### **What causes the colours in Finger Limes?**

The colour of the rind (skin) has no relationship to the flesh. Green skin can have pink flesh and pink skin maybe pink flesh. You may have come across Blood Red Oranges and Grapefruit. Same applies, orange skin – red flesh! If you read all the related comments there is some fact and a lot of myth. Pink in Finger Limes (and the purple) is from anthocyanins. The Emerald greens are Xanthocyanins. The cyanins develop as the fruit sugar content increase. The ambient temperature, number of heat days and low chill days, pH of soil etc etc all impact. If you have owned a blood red navel orange, you may understand. Some areas of Italy promote as the only true (consistent) place of 'Blood Red' due to unique combinations of the above however it seems to be just marketing. In some varieties (cloned cuttings) of finger limes at the same time of the year and maturity of fruit their will have different expressions of cyanin intensity. Some are more uniform – but not many.

**Sheryl:** The Research Station at Bundaberg have never done any rootstock work with fingerlimes. The only rootstock trial that Malcolm Smith can think of with fingerlimes is being done by Manjul Dutt in Florida; this trial is only young and under HLB disease pressure.

### **Finger Limes in Pemberton, Western Australia**

**Jill Baker 0439 094 099 Jacquie Baker (Sales & Marketing) 0418 359 428**

**sales@pembertonFinger Limes.com.au** <https://www.pembertonFinger Limes.com.au/>

All their finger lime trees were grafted from the same certified 'Rainforest Pearl' parent stock. Never did they imagine that so much colour variation would occur within the one variety! This phenomena has been widely reported. It is thought that each tree responds differently to slight variations in soil, water and microclimates within a paddock. It is all part of the mystery of '*Citrus australasica*'. They have also noticed that there is slight variation of flavour within the colour range. The limey colours are tart and refreshing and great for dishes requiring high acid levels, like ceviches (fresh raw fish cured in fresh citrus juices, most commonly lemon or lime) and curries. The pinker, redder ones are more fragrant with a higher sugar level. They are lovely as a garnish for seafood and in desserts.

**Rhyne Horticulture Wholesale cutting grown Finger Lime nursery in Bundaberg Qld**  
Simon 0458 950 250 Minimum orders apply. We do not supply NSW.  
[info@gourmetlimes.com.au](mailto:info@gourmetlimes.com.au) <http://www.gourmetlimes.com.au/>

Further to the previous post on the hybrid ancestry of the finger lime (*Microcitrus australascia* or *Citrus australasica* if you think its paternal heritage is more important. Although its mitochondria and chloroplasts are from its maternal ancestry giving a slightly higher proportion of pure microcitrus physiology), it has now been postulated that all the other members of the Australian citrus gang are from one common ancestor which branched out from Citrus many moons ago. Also in this group, extra to *Microcitrus* (Mt White lime, Gympie lime etc.) and *Eremocitrus* (Australian desert lime) is the extremely rare and amazing *Clymenia polyandra*. This one off relic of citrus passed, only remains on a few small islands in a distant tropical archipelago. Its fruit, green / yellow, shaped like a large orange, and its flesh ... wait for it, has segments like a mandarin but caviar like vesicles just like a finger lime! Sweet and lacking the sour tartness which finger lime does, it makes for a tantalizing refreshingly tropical experience. But only for the tribes people of New Irelands Namatanai, the only humans lucky enough to consume it as a part of their natural dietary intake.. *Clymenia polyandra*. A recent study published in the Agricultural Sciences in China journal has shed some light on the “Long controversial taxonomic history” of citrus and its relatives. Until recent times taxonomy of Citrus (including *Microcitrus*) has been based on physical morphology, giving rise to much subjective debate. Now, this new study has made use of cpDNA, found in the chloroplasts and passed down from the maternal parent to help identify direct lineage of many citrus species. It suggests the finger lime might actually be a hybrid of a true *Microcitrus* (such as *Microcitrus australis*) or a common ancestor, and an ancestor of the Kaffir lime (*Citrus hystrix*).

**The Lime Caviar Company, 542 Philp Mountain Road, Running Creek QLD 4287**  
**Ian Douglas 0417 373 073 Margie Douglas 0419 542 082**  
[info@limecaviar.net](mailto:info@limecaviar.net) <https://www.limecaviar.net/> **Quick frozen & already extracted**

The pearls are normally produced from 4 variants of selectively picked fresh Finger Limes, each having naturally coloured pearls – shades of red, pink, green and yellow. We extract the pearls from their skins and quick freeze them in food grade containers in 22.5g lots (or 45g lots if requested during our January to June processing season). The product is packed and dispatched in insulated cartons of 3 sizes. We can also pack in 500g lots and dispatch in volume to meet special needs. Lime caviar is user-convenient. It is spoonable and can be served frozen. The frozen shelf life is long and allows for menu planning. When thawed, the pearls are fresh-like in taste, appearance and structure. Lime caviar has no additives, no preservatives, the colouring is natural and it is gluten free and vegan. Subject to availability, the variant colour is for you to choose.



## Other Websites on Finger Limes

<https://www.sgaonline.org.au/finger-limes/>

<https://www.anbg.gov.au/gnp/interns-2013/citrus-australasica.html>

<http://anpsa.org.au/c-aust.html>

[http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0016/320272/growing-australian-native-finger-limes.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0016/320272/growing-australian-native-finger-limes.pdf)

<https://www.abc.net.au/gardening/factsheets/native-citrus/9437906>

<https://www.abc.net.au/gardening/factsheets/citrus-success/9437008>

<https://www.daleysfruit.com.au/bushfood/Finger Lime.htm>

<https://www.agrifutures.com.au/wp-content/uploads/publications/14-114.pdf>

<https://www.witjutigrub.com.au/index.php/info-sheets/14-finger-lime-citrus-australasica>

## Bush Citrus Stamp Issue

Released in 2019, it featured three species from the citrus (*Rutaceae*) family: two from the genus *Citrus* and one from the genus *Acronychia*. Each native species is growing in mainstream popularity, thanks to commercial enterprises and the use of these ingredients by high-profile chefs (and even on the most recent series of *Masterchef*).



Desert Lime (*Citrus glauca*) produces a small fruit with a very tart flavour. It can be used in the same way as regular lemons and limes, though is often used to make cordials, sauces, garnishes marmalades, pickles and chutneys.

Lemon Aspen (*Acronychia acidula*) is a small to medium-sized rainforest tree. Its very small pale-yellow fruit is also known as “rainforest lemon”. It has an extremely strong citrus aroma and is tart, much like grapefruit. Lemon Aspen puree can be used in dressings, marinades, cordials and desserts.

The cylindrical fruit of the Australian Finger Lime (*Citrus australasica*) contains pulp that includes little caviar-shaped pearls, which pop with citrus flavour. The fruit pulp is often used as a garnish, but Finger Lime can also be used in dressings, jams and sauces, cordials and even cocktails. The stamp illustrations are by Anita Xhafer, whose work also featured on the Garden Fruits of Cocos stamp issue, released in 2017.

Ref: <https://australiapostcollectables.com.au/articles/stamp-designs-bear-fruit>

**Sheryl:** I spoke to Judy Viola from Possum Creek in northern NSW and she uses *Trifoliata* or Troyer rootstock; Swingle being too vigorous. She and Garry Isles in Sydney have all their plant material Index Virus Tested.

Jenny Iriundo from Cedar Creek Nursery at the Sunshine Coast said that they have used Troyer and Swingle but there didn't seem to be any reason as to why some plants die on either rootstock. She has the same opinion as Jill Baker from WA that each tree responds differently to slight variations in soil, water and microclimates within a paddock.

Peter Young, ex Birdwood Nursery, suggests *Trifoliata* though it is salt sensitive.

## Unique Australian seaweed factory opens on NSW South Coast manufacturing food, beauty and medicinal products by Ainslie Drewitt Smith

Australia's first factory manufacturing food-grade seaweed products from a unique domestic species of the marine plant has opened on the New South Wales South Coast. It is the first of its kind in the country to use a unique species of green seaweed only found along the Australian



coastline. The global seaweed industry is worth \$13 billion and a blueprint is now being developed to help expand the domestic industry. Green seaweed found only along the Australian coastline will be broken down and dried at the Huskisson facility, to create food, beauty and medicinal products. Owner of the factory, marine biologist and honorary fellow at the University of Wollongong, Pia Winberg, said it is a milestone for the local industry that will create 20 jobs by next year. "Only four years ago we were still in beakers and test

tubes," Dr Winberg said. "In this factory we're able to put the seaweed in its whole form into foods like pastas, or we can put the concentrated protein into plant-based protein foods like muesli. "We can also extract very special molecules that mimic human connective tissue and we're researching on 3D printed structures to heal wounds."

The green seaweed is dried at the factory before being used in a variety of products. Carbon dioxide and wasted nutrients from a local wheat refinery are captured to farm the seaweed at a separate site in Bomaderry. "We're really the only food-grade seaweed farm processing system from the sun to the bottle at this stage," Dr Winberg said. "What we're doing here is showing how you can use seaweed, because Australians just think it's sushi or just smelly and, on the beach." "But seaweed is a really important component of the human diet and has been for tens of thousands of years." The global seaweed industry is worth \$13 billion but until recently it has been a largely untapped resource in Australia. Agrifutures is now working with researchers to develop a Blueprint for the domestic industry to grow it to \$100 million by 2025.



Jo Kelly from the Australian Seaweed Institute is working with Agrifutures to develop a blueprint for the industry domestically. "The idea is that we paint the picture of the industry opportunity that is available, and we will use that to engage state governments in conversation to drive the industry forward," CEO of the Australian Seaweed Industry, Jo Kelly, said. "Our projections are that by, 2025 we'll have 5,000 jobs created in regional coastal towns and by 2040, over 15,000 jobs. "So the potential for this industry to contribute to global health and nutrition while adding significant value to the Australian economy cannot be overstated."



Dr Winberg said it is important Australia finds a unique place in the international market. "Seaweeds have very different properties and we'll be looking at what seaweeds in Australia can fill in the gaps and not just the next nori, it's got to be different," she said.

Ref: <https://www.abc.net.au/news/2020-05-29/seaweed-factory-opens-on-nsw-south-coast/12295094>



**PHOTO: Samphire is a native succulent often referred to as sea asparagus. (ABC Great Southern: Olivia Garnett)**

**A Western Australian farmer believes a native succulent is the secret to creating economic return from salty land where very little else can survive.**

Samphire plant is a native succulent which grows in sandy soil by the coast and also salty soil inland. The fleshy samphire stems have a crisp, salty flavour good with seafood or salads.

Moojepin Foods wants to contract farmers with salinity problems in southern WA to grow samphire commercially. David Thompson of Katanning, 300 kilometres south east of Perth, said the tasty samphire plant also known as sea asparagus, thrives on otherwise non-arable country. "It's adapted to growing in a toxic environment," he said. According to the WA Department of Agriculture and Food, samphire plants have a high tolerance to both waterlogged and saline soils. Once established, along saline land, the samphire will spread rapidly if protected from grazing pressure. The samphire stems are best harvested in summer, when they are fleshy, green and aromatic. Why kill a valuable plant? "A lot of it grows along the coast but a lot of people don't realise it can grow inland. We've probably got half a million hectares suitable to samphire," Mr Thompson said. "I've had people ask me how to kill it to get rid of it and I think 'why would you want to kill this?' "It's the last plant on earth that'll grow in some of these areas. Let's grow it and make something out of it." Perth chef Stephen Watson has been cooking with samphire for several years. Before it was grown commercially, he used to forage for it along the coast himself. He says the fleshy samphire stems have a distinct crisp, salty flavour and make a good fit with seafood dishes. "It gives you a nice taste of the sea, it's a bit salty and it's got a nice crunch when you blanch it. "Customers are a bit sceptical at first but once they try it they realise it's pretty nice."

Ref: <https://www.abc.net.au/news/2019-10-31/samphire-bush-food/11653700>

## The seasonal 'calendars' of Indigenous Australia

On Wangkumarra land, in the corner-country near the borders of Queensland, New South Wales and South Australia, stands an ancient stone arrangement. It has been placed to the side of a huge complex, rivalling Stonehenge, featuring megaliths polished, carved and placed to balance precariously on each other.



Ancient stone arrangements on Wangkumarra land.  
Tyson Yunkaporta

They should fall, but they don't, as this is a place where time runs differently. In contrast to the Western "arrow of time", the small rock formation pictured shows the non-linear, infinitely interconnected cycle of time followed by the First People who built the site and used it over millennia. It is a stone calendar, aligned within a fraction of a millimetre to the points of the compass.



The stone calendar on Wangkumarra land. Tyson Yunkaporta

The key to understanding this temporal reality is the shape of the stone calendar. It is round, not a continuum. There is no beginning or end, and as such, there is no "New Year". Seasons do not serve as a basis for linear metaphors of new life in spring to death in winter.

Instead, both seasons and humans are viewed as components of cycles. Around Australia, Indigenous languages vary in both the number of season words in their lexicon and their precise meaning. This is at least partly due to the very different kinds of weather experienced around the year in different parts of the country.

### A Tour of the Seasons

In the Tiwi islands just to the north of Darwin there are three major [seasons named in the Tiwi language](#): *Kumunupunari* (the dry season of fire and smoke); *Tiyari* (the season of hot, humid weather); and *Jamutakari* (the wet season of daily rain and full rivers). These three seasons subsume 13 overlapping, more precisely defined seasons.

For example, in the *Mumpikari* season (which overlaps with the start of the *Jamutakari* “wet season”) the first rains after the dry time make the ground soft and muddy enough to retain the footprints left by possums returning to their trees, which makes the possums easier to track when hunting.

Understanding the meaning of a word like *Mumpikari* “season of muddy possum tracks” entails knowledge of the type of weather experienced at that time (first rains following a long dry spell), consequent changes in the local ecology (muddy ground), as well as changes in human behaviour and potential sources of food (it’s a good time to hunt and eat possums).



In the Tiwi Islands *Mumpikari* is ‘season of muddy possum tracks’

The changes in weather, ecology and potential food sources over the course of the year are dramatic, but vary significantly across a continent as large as Australia. The season experienced in tropical Cape York in January is very different to January in Tasmania. Likewise, the middle of the year brings radically different weather patterns to the tropical north, temperate south and central desert regions respectively. The definitions of seasonal terms tell us a lot about the ecology that a language is spoken within and how speakers interact with it. In the [Warlpiri](#)

[language](#) of the Tanami Desert, for example, several seasonal terms (such as *karapurda*) make reference to the prominent westerly winds that blow at the onset of the hot season. Common food sources also feature prominently in the definitions of season terms, such as *mangkajingi*, “season of year when goannas are easily found in shallow burrows”. In the [Bardi language](#) of the Dampier Peninsula (WA), the build up to the wet season is named *Lalin* and colloquially referred to as “married turtle season”, because the mating turtles are a prized food source at this time.

In Gulumoerrgin (Larrakia) language group, spoken around Darwin, the year is divided into [seven named seasons](#). Each of these seasons is associated with distinctive patterns of weather, but also changes in flora, fauna, and human activity. The *Gurrulwa* season, or “big wind time”, is heralded by the flowering of wattles, which in turn indicates that the local stingrays are plentiful and good to eat. The flowering of the Yellow Kapok at this time in turn indicates that it is the time for important traditional ceremonies to be held.

### Connections

These connections between species are often cemented in language by using a single word. In the [Dalabon language](#) of Arnhem land, the word *yawok* has [two meanings](#): (1) a species of yam (*Dioscorea bulbifera*); and (2) a species of grasshopper (*Caedicia spp.*). To the untrained observer, the yam and grasshopper might appear to have little in common.



In Arnhem Land, when the *yawok* (grasshopper) calls, the *yawok* (yams) are ready for harvesting. [Wikimedia/JJ Harrison, CC BY-SA](#) But for Dalabon speakers, this naming practice is a useful mnemonic that helps them remember that the yam is ripe for harvest precisely at that time of year when the grasshopper’s mating call can be heard. [Similar principles](#) have been found to underpin the naming of plant and animal species in languages such as Bininj Gun-Wok & Ndjébbana.

The words of any language tell us a lot about the history of its speakers; who they’ve been in contact with, where and how they have lived. This is certainly true of the English calendar months. It is also seen in the number and nature of the seasons named by different Indigenous communities, from the tropical north of Australia to the chillier climates down south.

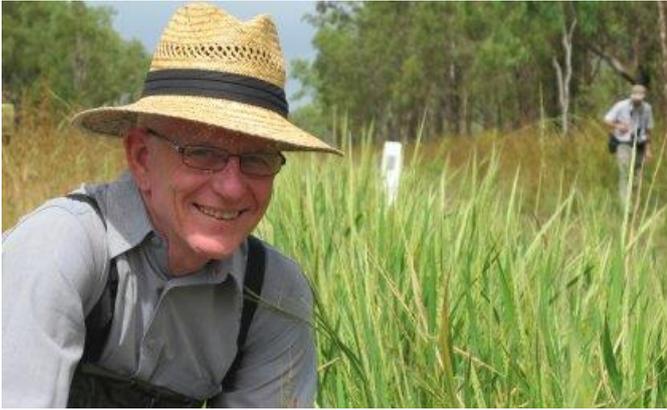
With around 370 languages and many hundreds more dialects originally spoken in Australia, it is impossible to do justice to the wealth and variety of traditional systems of tracking time and seasons. But a recurrent theme is the interconnectedness of human activities and the cycle of changes in flora and fauna that attend the tilting of the earth’s axis. Ref:

<https://theconversation.com/explainer-the-seasonal-calendars-of-indigenous-australia-88471>

<b>Native Tamarind Chutney</b> <i>Diploglottis campbellii</i> by Christine McMaster
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The large-fruited native tamarind has beautiful orange fruit in twos or threes within the one fruit casing. Boil together in usual chutney method, remove kaffir lime leaves, bottle into warm sterilized jars. 200g tamarind flesh, cut from the stones, 300g diced green apples, 1 capsicum diced, 225g diced onions, 225g sultanas and raisins, good-sized piece of ginger peeled and crushed through a garlic crusher, 10 kaffir lime leaves, nutmeg, cinnamon, mixed spice, 1 cup sugar (½ white, ½ brown), 2/3 cup white vinegar

## From northern billabongs – a new future for rice



Professor Robert Henry

Australian wild rice "tastes good and we believe it may have more beneficial health qualities than other rice species".

Wild rice growing in northern Australia's crocodile-infested waters could help boost global food security, say University of Queensland researchers who have mapped its genetic family tree. Valuable traits from the wild rice – such as drought tolerance and pest and disease resistance – can be bred into commercial rice strains, said [Professor Robert Henry](#) from the [Queensland Alliance of Agriculture and Food Innovation](#). "Northern Australia's wild rices contain a wealth of untapped genetic diversity and at least two species are very closely related to domesticated rice, so they can be cross-bred with this species," he said. "Wild Australian rice genes could make commercial rice production better suited to northern Australian conditions. "The wild rices could contribute resistance to diseases such as rice blast, brown spot and bacterial leaf spots." Professor Henry said the research showed that in the era when [the ancient human ancestor known as Lucy](#) lived in Africa, a genetic divergence occurred in the rice variety that is now found only in northern Australia. This divergence led to the Asian and African rice species commonly used in commercial rice production today.



Professor Henry said that in addition to boosting global rice production, Australian wild rice offered the opportunity to be cultivated as a tasty and nutritious product in its own right. "It tastes good and we believe it may have more beneficial health qualities than other rice species," he said.

A UQ doctoral thesis study on the grain quality of Australian wild rice showed the species had the lowest "hardness" of cooked rices, and a higher amylose starch content. "The higher the amylose content, the longer the rice takes to digest," Professor Henry said. "This potentially offers more

nutrition to our gut microbes, in the same way high-fibre foods do." He noted that human trials were needed to confirm the health benefits but the chemistry suggested this was the case. Rice is the most widely consumed staple food for much of the world's population and the third-largest worldwide agricultural crop. Professor Henry said the study provided a comprehensive insight into the rice family tree, and confirmed that wild Australian rice was the most directly related species to the ancient ancestor of all rices. "Through this research, we've developed a calibrated DNA-based molecular clock that maps when divergences in the rice genome have occurred," Professor Henry said. "Few biological systems are as well described as rice now is."

The paper **detailing outcomes of the research into the genomes of domesticated and wild rice species is published in [Nature Genetics](#). DOI: 10.1038/s41588-017-0040-0**

**Images:** <https://www.dropbox.com/home/Wild-Rice-Jan-2018>.

**Video at** <https://youtu.be/jMoAOZDsHMo>.

**Media:** QAAFI Communications, Margaret Puls, [m.puls@uq.edu.au](mailto:m.puls@uq.edu.au), +61 7 3346 0553; Professor Robert Henry, [robert.henry@uq.edu.au](mailto:robert.henry@uq.edu.au), +61 7 3443 0552.

## Plum award for Australian native food industry collaboration



### Kakadu plums

A powder extracted from the Kakadu plum to extend the shelf life of frozen ready-made foods has earned a University of Queensland researcher and her team a national award for community engagement.

[Associate Professor Yasmina Sultanbawa](#) from UQ's [Queensland Alliance for Agriculture and Food Innovation](#) was recognised for her work with Aboriginal communities and industry in northern Australia to develop the powder. Her team won the

Outstanding Collaboration in Community Engagement award at the annual [Business and Higher Education Round Table \(BHERT\)](#) awards held on 21 November 2017.

“Australia’s Indigenous population has long known the health benefits of native bush food, but the mainstream food industry has only been able to harness some of these benefits recently,” Dr Sultanbawa said. “The Kakadu plum is only the size of an olive but is packed with Vitamin C, antioxidant and antimicrobial properties.”



Dr Sultanbawa has worked with government, researchers, industry and Aboriginal communities across the Top End of Australia since 2010, investigating the nutritional and functional value of the plum.

“We developed a puree and a powder that can be added to foods including frozen ready-made meals to extend shelf life up to 18 months, which is very significant advantage,” Dr Sultanbawa said. She said indigenous communities, government,

philanthropists and research partners worked collaboratively to develop an innovative business model to harvest, market and distribute the in-demand Kakadu plum fruit puree and powder. Twenty tonnes of Kakadu plums are harvested across Northern Australia each year, with plans to increase this wild harvest to more than 100 tonnes to meet commercial demand.



The annual BHERT awards aim to reinforce the importance of business-university partnerships in innovation, research and development and teaching. BHERT Chief Executive Officer Dr Peter Binks praised the Plum Pickings team.

“This an outstanding collaboration, built on good science and interdisciplinary relationships with the objective of creating new business and employment opportunities,” Dr Binks said.

“Our judging panel was impressed by the impact this project has already had, and the long-term prospects for the food preservative industry in Queensland and the Northern Territory.”

The Kakadu plum consortium includes:

**Funding partners:** Australian Government Department of Industry, Innovation and Science and The Australian Industry Group, AgriFutures Australia

**Industry partners:** Kindred Spirits Foundation, Karen Sheldon Catering, Australian Native Foods and Botanicals

**Research partners:** University of Queensland, Department of Agriculture and Fisheries, Charles Darwin University

**Aboriginal community partners:** Palngun Wurnangat Aboriginal Corporation, Gundjeihmi Aboriginal Corporation, Mamabulanjin Aboriginal Corporation, Milingimbi Crocodile Rangers, Thamarrurr Rangers

*Captions: top left - Associate Professor Yasmina Sultanbawa (centre); bottom right - wild harvesting of Kakadu plums.*

**Media:** QAAFI Communications, Margaret Puls, [m.puls@uq.edu.au](mailto:m.puls@uq.edu.au), +61 7 3346 0553; Associate Professor Yasmina Sultanbawa, [y.sultanbawa@uq.edu.au](mailto:y.sultanbawa@uq.edu.au), +61 7 3443 2471.

### **Native Tamarind Butter** by Christine McMaster

Flesh of finely chopped *Diploglottis campbellii*, softened butter.

Mix the fruit into the butter, roll into 'sausages'.

Serve with crusty bread to accompany a main meal.

### **Kangaroo and Aussi Greens Sushi** by John King

Sushi Nori sheets

Sushi Rice

Kangaroo Fillet

50 ml of your favourite vinegar

10 ml sweet soy sauce

100 ml of red wine or dark beer

and any of the following greens:

Scrambling Lilly new stems (*Geitonoplesium cymosum*)

blanched Warrigal greens (*Tetragonia tetragonoides*)

Native Violet leaves and flowers (*Viola betonicifolia*, *V. hederacea*)

Purslane leaves (*Portulaca oleracea*)



Prepare your sushi rice as per the instructions on the rice packet.

Place Kangaroo in vinegar, soy, and alcohol and marinate over night.

Place Kangaroo and marinade in saucepan and simmer until tender and then chill in refrigerator.

When cold, slice into thin slices.

Blanch Warrigal greens and wash other greens and pat dry on paper towel.

Prepare Sushi as per instructions on Nori sheet packet using the kangaroo and Aussi greens as the fillings.

### **YouTube clips featuring bushfood**

<https://www.youtube.com/watch?v=HmuksqZE8Qc>

<https://www.youtube.com/watch?v=PS9I-S6ORU8>

[https://www.youtube.com/watch?v=4NK79C\\_hAK0](https://www.youtube.com/watch?v=4NK79C_hAK0)

[https://www.youtube.com/watch?v=aqAWYWTs\\_JQ](https://www.youtube.com/watch?v=aqAWYWTs_JQ)

<https://www.youtube.com/watch?v=3EShkimqrVE>

**New book by Attila Kapitany on Edible Australian Succulents. Review in the next newsletter.**

<https://australiansucculents.com/edible-succulents>



## Cooloon Jelly Blue Quandong

by John King

200 ml Cooloon juice  
100 g sugar  
1 tbs agar agar

To make Cooloon juice boil equal amounts of Cooloon and water for ½ hour. Mashup the pulp and strain well through cloth.

Place the jelly ingredients in saucepan and bring to the boil and stir to dissolve sugar. When the jelly is boiling take it off of the heat and pour into a mould.



### Cooloon Curd

Combine 100 g Cooloon pulp left over in the cloth after straining, 50 g butter, 2 eggs, 200 g sugar, 100 mL lemon juice in a saucepan and cook over low heat until thick while gently stirring. I added 2 extra lightly-beaten eggs and 1 teaspoon of corn flour to make it even thicker for a dessert.

### Coconut Sour Cream

Stir 40 g of desiccated coconut in a dry saucepan over heat to toast. Cool and combine with sour cream. Spoon your chilled curd onto Quandong Jelly and spoon on sour cream to decorate.

## Wild Raspberry Dumplings

by John King

2 kilo native raspberries  
900 grams raw sugar  
3 cups water

Mix all ingredients in a saucepan and bring them to the boil, simmer 5 minutes and allow to cool. Strain cooled raspberries through a fine strainer into another saucepan, reserving the pulp.

100 grams reserved raspberry pulp  
1 cup self-rising flour  
4 teaspoons macadamia nut oil  
8 teaspoons water



Mix all together in a mixing bowl and kneed to a smooth dough (like scone dough). Roll out to 5 mm thick and cut into rounds with a small scone cutter and place aside.

Bring the saucepan of reserved sweet raspberry juice to the boil. Float dumplings on simmering juice and place a tight-fitting lid on saucepan and simmer for 20 minutes, do not remove lid during 20 min cooking time. Remove cooked dumplings with a slotted spoon and place aside. Put any remaining dumpling mixture into the saucepan of boiling juice and simmer them for 20 min, covered.

Extra water can be added to the boiling juice if it seems too thick for the second batch. Put 2 dumplings in each desert plate and pour over some juice, and top with a teaspoon of sour or sweet cream. The dumplings can be eaten as a hot or a cold dessert.

**Sheryl: John & Mary King live at Conondale Qld and sell bushfood liqueurs. 07 5435 0074**  
[rainforest272@bytesite.com.au](mailto:rainforest272@bytesite.com.au) <http://www.rainforestliqueurs.com.au>

**Native Lemon Grass** *Cymbopogon ambiguus* by Carmaine Kane

Indigenous migraine remedy works 'as well as aspirin'. Scientists on Queensland's Gold Coast say a traditional Indigenous treatment is as effective as aspirin for migraine relief. The remedial qualities of a type of native lemongrass found in parts of the Northern Territory have been researched by scientists at the Glycomics Institute at Griffith University. Institute spokesman Dr Darren Grice says it is one of a number of traditional treatments listed in Indigenous records passed on to early settlers. "We have validated really their use by identifying ... this one particular chemical ... does work," he said. "Headache and migraine are very complex conditions but certainly it has the ability to work as well as aspirin does. "They'd been used for a sore head or something we believed would be connected in some way to migraine or headache so out of those, this particular plant - it's called *Cymbopogon ambiguus* - which is a particular type of native lemongrass - showed [a] particular type of activity that we investigated further."

**Mountain Pepper** *Tasmania lanceolata* by Phil Allen - SA

I've been growing male and female plants in pots under eucalypts at our property in Meadows. This is native pepper with pepper corns and leaves being used to add spice to cooking. I lost a few planted in the ground last summer. They certainly don't like the heat or hot winds. The remaining 8 are thriving - shooting and flowering. Not sure how big they will grow in pots, but can reach up to 4m in the wild. Surprisingly the strongest plants came from Bunnings Mile End who source them from Humphris Nursery in the Dandenong Ranges. We're moving to Mannum soon and also travelling around Australia so will be a challenge to keep them happy.

Ref: Aust Plants for Containers No 25

**Hibiscus - Tam Kendall**

Recently I went Hibiscus mad, having previously ignored the Malvaceae family thinking they would not grow well in Melbourne's climate. And of course, I was wrong - there are quite a few Victorian Malvaceae family members. Aside from the beautiful assortment of exotic hybrids, I have a collection of "Australian Rosellas" Hibiscus 'Apricot Myst' (a *divaricatus/heferophyllus* cross, I think; 'Pink Haze' *H. heterophyllus* (prominent pink veins over white); 'Gold Haze' - *H. divaricatus* (yellow flower) and 'Ice Haze' - *H. heterophyllus*. All have edible petals that can be used in salads or as a preserve for sauces or marinade and they can also be used as a cold or hot tea. I am extremely happy with the way they have settled in and they are taking the cold winter weather in their stride. The majority of the plants are in pots on the balcony with a hastily constructed shelter of polyvinyl over a wire frame to protect them from the wind and the worst of the cold. They seem to be fast-growing, hardy and healthy specimens that can be grown in pots or in the-ground as long as some protection is provided.

Ref: Aust Plants for Containers No 28 They came from Keena & Hibiscus World in Queensland.

Ref: <http://www.hibiscus.org/index.php>

**Cranberry Heath** *Astroloma humifusum*

The green fruits are edible and were used by Aborigines and early European settlers.

Ref: <http://anpsa.org.au/epacris3.html>

