

**Australian Food Plants Study Group  
Australian Native Plants Society (Australia)**

**<http://anpsa.org.au/foodplantsSG/AFPSG-news.html>**

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**Seeds from Atherton Almond, Quandong, Bunya & Macadamia**

Welcome to my first edition as your newly appointed Editor of the Australian Food Plants Study Group. I know you've all been waiting for some time as the last issue was dated June 2011 in fact! But here we are and here's to a new chapter in the life of this Study Group!

I took the above photo when I was asked to participate at the Royal National Show (otherwise known as the EKKA) here in Brisbane in August 2016. Veronica Coogan from Witjuti Grub Nursery had a display of bushfood there and the Qld Bushfood Association assisted on the stand. Veronica garnered 1<sup>st</sup> prize for her display!

I've been a tad busy. When I offered to take on the role as the Leader of this group, I had a look at what other Study Groups did and saw the wonderful work that the amazing Brian Walters, the webmaster, created for ANPSA. <http://anpsa.org.au/foodplantsSG/AFPSG-news.html>

Some of the groups allowed Brian to put their older newsletters onto the website and I thought what a great idea that was. What's the good of members' hard research and efforts being put into newsletters over many many years when we know that old newsletters get lost in all our paperwork or worse still, biffed out by the next generation and with the Search function on the website, it is so easy to find information on a plant you are researching so do a test. Type in the name of the plant you are researching within the Food Plant Study section then click on Search and it will find all the particulars in the previous 60 newsletters! I noticed that only a few Study Groups had copies of their newsletters up on the website so I made the offer that if they sent me their hard copies, I would scan them free of charge and send them to Brian as a lot of the newsletters predate the digital era. So far, I have completed two groups and I am about to start another. So the offer still stands, if you would like to have your newsletters on the ANPSA website, post them to me – address is on the front cover of the newsletter.

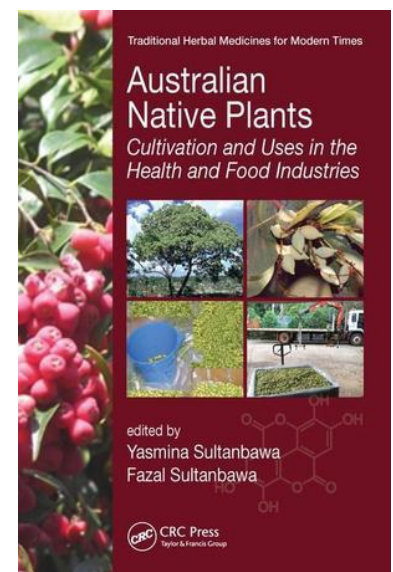
Because you've been waiting so long, I thought I'd offer free membership for 2017 to get the group up and going. Being a Study Group, perhaps some of you might have a project in mind that we could get up and running. Editors are always looking for contributions so would love to hear from you. Would you consider submitting a profile of yourself? Let me know what is happening in Australian food plants around your area.

## **Australian Native Plants: Cultivation and Uses in the Health and Food Industries** edited by Yasmina Sultanbawa, Fazal Sultanbawa

This book provides a comprehensive overview of native food crops commercially grown in Australia that possess nutritional and health properties largely unknown on a global basis. These native foods have been consumed traditionally, have a unique flavor diversity, offer significant health promoting effects, and contain useful functional properties. Australian native plant foods have also been identified for their promising antioxidant and antimicrobial properties that have considerable commercial potential.

This book is divided into three parts: The first part reviews the cultivation and production of many Australian native plants (ANP), including Anise Myrtle, Bush Tomato, Desert Raisin, Davidson's Plum, Desert Limes, Australian Finger Lime, Kakadu Plum, Lemon Aspen, Lemon Myrtle, Muntries, Native Pepper, Quandong, Riberry, and Wattle Seed. It then examines the food and health applications of ANP and discusses alternative medicines based on aboriginal traditional knowledge and culture, nutritional characteristics, and bioactive compounds in ANP. In addition, it reviews the anti-obesity and anti-inflammatory properties of ANP and discusses food preservation, antimicrobial activity of ANP, and unique flavours from Australian native plants.

The third section covers the commercial applications of ANP. It focuses on native Australian plant extracts and cosmetic applications, processing of native plant foods and ingredients, quality changes during packaging, and storage of Australian native herbs. The final few chapters look into the importance of value chains that connect producers and consumers of native plant foods, new market opportunities for Australian indigenous food plants, and the safety of using native foods as ingredients in the health and food sectors.



## Endangered Macadamias find a permanent home



Left Jan De Nardi (vice-president of the Friends of The Lismore Rainforest Botanic Gardens), Jolyn Burnett (chief executive officer Australian Macadamia Society Ltd) and Ian McConachie (former chairman and founder of Macadamia Conservation Trust). Photo Jacklyn Wagner

Australia's favourite nut and one of the northern rivers' best exports – the macadamia – is so ubiquitous that who would have thought the original varieties could be an endangered species? But, strange as it seems, that proves to be the case.

Most of the Big Scrub that was once home to the macadamia has of course been cleared and, with it, most of the original varieties have vanished.

Enter the Macadamia Conservation Trust and Lismore City Council, who have hatched a plan to conserve and protect wild macadamias by planting the endangered species in perpetuity at the Lismore Rainforest Botanic Gardens.

Last weekend, the two well-known commercial species, *Macadamia integrifolia* and *Macadamia tetraphylla*, were planted alongside the rare *Macadamia ternifolia* and *Macadamia jansenii*, making it the first time all four species have been displayed together in the region.

Historian and representative of the Macadamia Conservation Trust, Ian McConachie AM, said the industry was thrilled to be working with Lismore City Council to rescue the Australian icon from extinction and educate the local community.

'There is a lack of public awareness of the wild macadamia species and an ever-increasing number of threats to their existence. They are highly vulnerable to risks such as fire, weeds, vandalism, urban sprawl and population growth,' Mr McConachie said.

'By planting all four species in Lismore Rainforest Botanic Gardens, we're highlighting the real risk of extinction in the future and conserving their genetics while allowing the public to view and appreciate our beautiful indigenous flora,' he said.

'The *Macadamia tetraphylla* tree, commonly known as the rough-shelled macadamia or the bush nut, originated from tiny remnants now left of the Big Scrub and symbolises what was Australia's largest single rainforest.'

The trees, taken from local rainforests, will have signage placed next to their new home to illustrate and educate the community about the Australian macadamia story. It will take approximately four to five years for the species to flower and about 10 years to become fully mature. They grow best in subtropical conditions of good soil, warmth and rain.

Lismore City Council assisted by planting and maintaining the trees in the Botanic Gardens, which have been established on waste land on the southern outskirts of Lismore by a dedicated group of local volunteers with the indispensable support of Lismore City Council.

It is estimated that more than 80 per cent of wild macadamia trees have been lost since European settlement with many of the remaining populations at risk of extinction today. The Macadamia Conservation Trust is a not-for-profit environmental organisation aimed at conserving wild macadamias in their native habitat as well as facilitating research and education.

Ref: <http://www.echo.net.au/2013/10/endangered-macadamias-find-a-permanent-home/>

## **Sea Scallops in Bushfood Liqueur Cream Sauce**

by John King    [rainforestliqueurs.com.au](http://rainforestliqueurs.com.au)    or google Facebook

Add 4 Tassie Pepper leaves (*Tasmannia lanceolata*) to Macadamia Oil and bring to smoking hot. Add 1kg of sea scallops to fine rice flour & sea salt in a plastic bag and shake to coat the scallops.

Add floured scallops to pan and fry for 1 minute each side to brown.

Remove scallops and set aside and add a tablespoon of leftover rice flour to the frying pan.

Throw in a good slurp of your favourite bushfood liqueur to the frypan and reduce down for a minute. (one suggestion is liqueur made from Cooktown Lemon Ironbark - *Eucalyptus staigeriana*)

Add 2 tsp smoked paprika, 2 tsp diced garlic chives, and 4 tbsp diced eschalots.

Cook for another minute.

Add 1 large container of cream and simmer for a couple of more minutes.

Place scallops on cooked rice and cover with sauce.

Serve and drink any leftover bushfood liqueur!

## **Macadamia Meringue Pie**

Preheat oven to 180°C. Lightly grease a 23cm (base) flan dish.

Place 22 Jatz biscuits into a food processor. Process to rough crumbs. Transfer to a bowl.

Stir through 1 cup roughly chopped pecans.

Using an electric mixer, beat 3 eggwhites with a pinch of salt to soft peaks.

Add 1 cup castor sugar, 1 tablespoon at a time, beating constantly until a thick, glossy meringue forms. Fold in vanilla and biscuit and pecan mixture.

Spoon mixture into pie plate. Bake for 20 to 25 minutes or until crisp. Set aside to cool completely. Top with cream and extra pecans. Ref: Adapted from a pecan recipe - taste.com.au

Pip Courtney, Presenter: Saltbush has long been a grazing godsend, powering through droughts and handling high salinity when other pastures disappear. In recent years, saltbush has also gained a reputation for improving meat quality and flavour. Now one innovative farming family in South Australia has harnessed the attributes of this hardy native plant by turning it into a pelletised livestock feed. Here's Kerry Staight:

**Kerry Staight, Reporter:** As wind turbines turn one natural resource into energy, a farming family which lives in the valley below is doing the same with another. After months of fine-tuning, the wheels are finally turning on Brian Wilson's pellet plant at Clements Gap, south of Port Pirie, transforming the resilient native shrub saltbush into a new kind of livestock feed.

**Brian Wilson, Wilson Pastoral:** If you look around Australia, I think there are not too many places where you won't find saltbush growing. To me, I really think it's a wasted resource that's been under-utilised and hopefully, over a period of time, yeah, it'll become something really good.

**Kerry Staight:** The Wilsons have been farming in the Mid North Region of South Australia for six generations and mainly grow wheat, barley and hay. In the last decade, they've also bought two grazing properties for their Wiltshire and Wiltipoll sheep and these have plenty of saltbush. With all these ingredients at his fingertips, Brian Wilson was inspired to take a traditional source of stockfeed in a new direction.

**Brian Wilson:** People always say about how Australia rode on the sheep's back. Well, pretty well Australia rode on the saltbush and bluebush that the sheep are eating. So, it's nothing new. Animals have been grazing saltbush for - forever. It just seemed an obvious thing to me that we can combine everything and make a really good stockfeed.

**Kerry Staight:** Step one turned out to be more straightforward than he expected. Even with a rudimentary forage harvester, the saltbush comes off relatively easily, with Brian's son Matt trimming just the top third of the plant.

**Brian Wilson:** What's been cut, the growth rate coming back on it's been phenomenal. I think it's a plant that actually responds to being trimmed.

**Kerry Staight:** There are dozens of varieties of saltbush, but the main ones the Wilsons are harvesting are river, bladder and old man, with some closely related pearl bluebush also in the mix. What they want is lots of lush leaves and stems. But this is a woody perennial, so it also comes with unwanted sticks.

**Brian Wilson:** Second cut's a lot better. First cut we were going through, we are getting a lot of stick with it and no doubt, once we've had our first pass, the next cut's gonna be all fresh growth and be beautiful.

**Kerry Staight:** At the moment, these paddocks are yielding on average between two and three tonnes of usable material per hectare. And unlike with other crops, very little has gone in to producing what they're picking up.

**Brian Wilson:** This is the great thing about it. It doesn't require any fertiliser or any chemicals. It just grows naturally. There's virtually no input. So the cost of production is really just the harvesting and transport cost.

**Kerry Staight:** What's relatively simple and cost efficient in the field gets more complicated back at the factory. The first challenge is to dry the saltbush because it has a high moisture content. The Wilsons initially relied on Mother Nature to do that, which works in summer, but not all year round. They then set up this temporary heating device and they're now in the process of replacing it with a new system that Brian Wilson says is faster and won't damage the sensitive vitamins in the plant.

**Brian Wilson:** We can keep the drying process down probably below 50 degrees. I don't think there's gonna be any issue with any vitamins. It's really a temperature that things would dry naturally at.

**Kerry Staight:** Turning the raw product into a more refined stockfeed was the next big hurdle. After making his first test batch in a kitchen blender, it was time to upscale. So with the help of a State Government grant, Brian Wilson invested in a second-hand pelleting plant. He then had to make it work. With limited engineering experience, the family called in experts like Steven Richter. And six months after the farmer planned to have the factory up and running, the pellets started falling.

**Brian Wilson:** There's troubles and there's trials and everything that goes with it, but, yeah, it's very satisfying to think that when we did the first batch of pellets and it came through, it was just fabulous.

**Kerry Staight:** Producing saltbush pellets may have started on Brian Wilson's bucket list, but his children and wife are helping carry the load

**Jill Wilson, Wilson Pastoral:** We have a lot of late nights, big days and we have worked very hard as a family, but it's been really good as our family because it's been Brian's idea, but it's been lovely to see it come to fruition.

**Kerry Staight:** One of Jill Wilson's jobs is to test what's coming off the production line. And something she's keeping a particularly close eye on are the crude protein levels. Some of the so-called protein in saltbush is actually nitrogen, but when it's paired with a source of energy like it is in these pellets, animals can convert it to protein.

**Mark Dearing, Elders Livestock Production Manager:** The industry's greatest challenge in feeding animals is accessing reliable and cheap protein. So to be able to harvest protein at what is really zero cost in the stage of growing the plant makes it a very affordable source of protein in itself.

**Kerry Staight:** Mark Dearing from Elders is almost as excited about these pellets as the farmers producing them. He and his colleagues jumped at the chance to sell this novel stockfeed when the Wilsons first floated the idea.

**Mark Dearing:** We sat around the table and listened to the idea and we all sat smiling at each other and I think he thought that we thought he was crazy and he said, "Well, what do you think? Are we mad?" And we said, "No, it's a really good idea." The first question to them was,

"Well, this sounds too simple. There must be somebody who's done it before." And they looked at us and said, "No, we don't think there is."

**Kerry Staight:** 18 months on from that original conversation, the team from Elders and the Wilsons are now gathered around another table counting down the days until the commercial release of the pellets. And it's not just the protein that's a potential selling point. Saltbush makes meat redder and juicier and has a reputation for improving flavour. And while tonight's roast may have been raised on plants at the family's Whyalla property, Mark Dearing says the pellets open the door for producers without the raw material.

**Mark Dearing:** I think it's huge. People have identified the flavour of saltbush in the meat and animals that have been grazing saltbush naturally, but to be able to put it into a product that can be virtually put out there for anybody's stock to eat and finish on makes it available to everybody, so it's very exciting.

**Kerry Staight:** Before the public can tuck in though, the team is making sure the pellets are actually palatable for livestock. They're running a series of trials on the Wilsons' farm and at other independent feedlots.

**Man:** So three weeks on the pellets?

**Man II:** Yeah, that's three weeks. Obviously starting off with pellets and hay initially, then moving on to straight pellets.

**Man:** Good. And no animal health issues? They're all looking alright.

**Man II:** No, no, they've been going really well.

**Kerry Staight:** The special ingredient in the pellets could make also it easier to look after stock during dry times. Sheep raised in remote pastoral regions, for example, sometimes struggle to acclimatise to supplementary feed because they're not used to eating grain, but they are familiar with saltbush. And that's something that catches the attention of goat producer Paul Blacket when the Wilsons take samples of their pellets to the Yorke Peninsula field days. He fattens goats from the bush for butchers and restaurants and says the animals are often slow to start eating the unfamiliar feed he supplies.

**Woman:** Smell it. You smell that. That's just beautiful.

**Paul Blacket, River Light Goats:** Yeah, right. That's quite a strong smell.

**Woman:** Yes.

**Paul Blacket:** 'Cause that's what you want. You want 'em to - you want 'em to go for it straightaway too rather than just ...

**Woman II:** You don't want 'em two days off feed.

**Paul Blacket:** No.

**Woman:** No! No, no, no.

**Kerry Staight:** So he's keen to try out the saltbush pellets, especially if they're cheaper than other protein-rich stockfeed.

**Paul Blacket:** And if it's quite competitive and it does what we want, that's great. We'll actually use that as the majority of our feed. Whereas if - you know, if it's an expensive product, we might only use it sparingly. But if it's price effective, we'll use it flat out, as much as we can.

**Kerry Staight:** The display also attracts pastoralist Bruce Nutt, whose family manages more than 800,000 hectares of saltbush country in the north of South Australia.

**Man III:** What's the percentage of saltbush?

**Bruce Nutt, Pandurra Pastoralist:** That's about 25 per cent.

**Man III:** Yeah? And what else is in it?

**Bruce Nutt:** About 50 per cent barley-rich hay.

**Kerry Staight:** His family has been in the livestock business for more than a century and he reckons the Wilsons are onto something.

**Bruce Nutt:** The sensible thing, I always think, is just look at what nature does and nature's designed animals to eat this feed, so work with it. You know, that's just - you look around here, all these plants and machinery and chemicals and everything at this field day here, they're actually working against nature. I tend to go the other way and this saltbush is part of nature for sure.

**Kerry Staight:** The Wilsons are initially blending three types of pellets to meet different needs and there's a growing list of domestic and international buyers lining up to sample their saltbush creations.

**Mark Dearing:** We think it's gonna take off very quickly. In fact even since the word got out, there's been a lot of interest shown. And we have greater concerns that they won't keep up with initial demand.

**Kerry Staight:** The farmers are in the process of trying to patent their idea, but if demand does boom, they're also keen to take the business beyond their own backyard.

**Brian Wilson:** As things grow, we'd need bigger pelleting plants and more property and everything else, so hopefully we can involve a lot of other people, farmers right round Australia. Worldwide, I mean, demand for red meat's increasing everywhere and we have to feed these animals. So if we've found a whole new feed source that can be put towards this, I think it's gonna be beneficial for everyone.

Ref: <http://www.abc.net.au/landline/content/2015/s4333691.htm>

**Sheryl:** Thanks to member Marilena Stanton for referring this article.

I grow Old Man Saltbush here in Brisbane. Below is one of my recipes that appeared in Jude Mayall's "The Outback Chef" which I can highly recommend. <https://www.outbackchef.com.au/>



## Saltbush Ice Cream

by Sheryl Backhouse

In a double boiler beat 8 egg yolks, 1 cup castor sugar and 3 tablespoons of very finely ground Saltbush over hot water until thick and creamy.

Remove from heat and when cold fold in 600mls of cream.

Pour into very small moulds or just serve a small scoop due to calorie content!!

**Note:** I developed this recipe as I love Green Tea Ice Cream and it tastes very similar!  
The following Riberry ice cream recipe uses up the 8 egg whites from this recipe.



## Riberry Ice Cream

by Sheryl Backhouse

Dissolve 1 tbsp cocoa in 2tbsp hot water

Mix: 375gm small size cooked riberry, 1 tsp cinnamon, 1 tsp nutmeg, 2 tsp mixed spice, 3tbs brandy. Add cocoa mix and stand overnight.

Beat: 8 egg whites until stiff and add 1/3 cup castor sugar

Beat: 600ml thickened cream with 1/3 cup castor sugar

Blend all ingredients together by hand.

Place in a bowl lined with foil. Freeze until solid.

To turn out, run water over the base of the bowl.

If you decide to substitute, don't use any large pieces of fruit as they remain in their frozen state. It can be made weeks in advance.

I also use a stainless steel platter which I keep in the freezer to keep it cold when serving.

I used a 230mm round silicone ware container – doesn't rust, easy to clean and exceptionally easy to turn out as food doesn't adhere.

Serve with a riberry coulis sauce.

## Salad with Ginger and soy Macadamias



Preheat oven to 180°C. Place ¾ cup macadamias in a bowl and stir through 1tbsp soy sauce and 2-3 tsps finely grated ginger to coat completely. Scatter over a baking tray and bake for 10 minutes. Remove from the oven and allow to cool before chopping coarsely. Set aside.

Cook 1 cup brown rice in plenty of salted boiling water until tender. Drain and set aside. Rinse 1 cup quinoa in cold water and drain. Place in a saucepan with 1½ cups cold water and bring to the boil. Reduce heat, cover and cook over a low heat for 15 minutes. Do not remove the lid. Turn off the heat and stand for 12 minutes. Remove the lid and use a fork to separate the grains. Set aside. Cut the bottom quarter off 1 bunch of asparagus. Fill a large shallow pan with water and bring to the boil. Add the asparagus, reduce heat to medium and cook for 1 minute. Remove the spears with tongs and rinse under cold water. Cut each spear into thirds and set aside. Using a mandolin, finely slice 3 small beetroot (golden & purple), 1 small green capsicum and 1 medium carrot. Combine the asparagus with the other vegetables, ½ cup chopped coriander leaves and 2tbsps of coriander stems and set aside. Make the dressing by putting all the ingredients in a jar and shaking vigorously. Pour a third of the dressing over the brown rice, a third over the quinoa and a third over the vegetables. Stir through to combine. Layer the brown rice, quinoa and vegetables on a platter, sprinkle with ginger and soy macadamias and ½ cup micro sprouts and serve immediately.

Ref: <http://www.australian-macadamias.org/consumer/our-nut-hub/recipes/layered-salad-with-ginger-and-soy-macadamias#sthash.t3fHa2A9.dpuf>

## Nonda Plum *Parinari nonda*

*Parinari nonda* is a shrub or small tree in the family Chrysobalanaceae. It occurs in northern Australia and New Guinea. The edible fruits are harvested in the wild. Common names include nonda plum, nonda tree, nunda plum and parinari.

This is a tough tree with weeping foliage whose fruit can be eaten when ripe. The fruit are also loved by the magnificent Palm Cockatoo, Cassowaries, Parrots, Fruit Doves and Spectacled Flying Foxes. Size: 5 to 10m Position: Full sun - good drainage. Flowers: Cream/yellow

Fruit: Orange/brown looking like small potatoes - edible when ripe. Distribution: Open forest and woodlands from the Torres Strait Islands to Undarra National Park NQ.

**Sheryl: Anyone growing this shrub or tasted it?**

**Photo: florafnq.wordpress.com**



Bush foods and bush tucker of the Aboriginal people of Central Australia usually fell into these groups:

1. Food from animals including kangaroo, emus, wild turkey, rock wallaby, possums, snakes and lizards and anteaters.
2. Food from plants including wild orange, wild passionfruit, wild fig, bush tomato, conkerberry, mistletoe, bush banana and bush coconut, quandongs, pencil yams, mulga apple, bush plums and sultanas.
3. Edible seeds including mulga seeds and wattle seeds.
4. Grubs and insects including witchetty grub, cicadas, caterpillars. Other grubs are found in various tree species such as river red gum, coolibah, ironwood and the prickly wattle.
5. Honey and nectars found in the honey ant, honey from the native bee, nectar from the flowers of the bloodwood and corkwood trees.
6. Water - the search for water in the dry desert conditions was essential for survival. Water could be found in soakages, tree roots and hollows and the very scarce permanent water holes.

### **Wild Orange (Merne Atwakeye) *Capparis mitchellii***

This fruit hangs down off its plant on long stalks turning a yellow green tint when ripe. Its creamy white flowers open during the night and wither before the end of the next day. Nicest when they are picked when orange inside and then eaten straight away.



### **Bush Yams (Anaty)**



The Desert Yam is another staple food of the Aboriginal people of Central Australia. The yam can be hard to locate as it can be growing up to 80 or 90cms underground. The yam is cooked by placing coals over it for about 20 minutes and then peeled before being eaten.



### **Desert Raisin Fruit**

When ripe the fruit of the desert raisin looks like a small green tomato. These fruit ripen from July to August each year. If left on the bush the desert raisin will dry and eventually resemble dried raisins.

### **Bush Banana (Alangkwe) *Marsdenia australis* previously known as *Leichhardtia australis***

Bush bananas are found on a winding vine that climbs up trees and shrubs. They have creamy flowers and green leaves. The flowers and young fruits are eaten raw. The older, mature fruit can be cooked lightly in hot earth. The bush banana is often featured on artwork and in Aboriginal mythology.



## Bush Coconut

Bush coconuts are found on the Bloodwood tree. The size of an apple with a rough exterior, a small grub can be found inside after breaking the fruit open and is usually eaten. The white flesh is also eaten.



## Quandong



The quandong grows on a small tree or shrub. The flowers are small and green but the quandong fruit is bright red and has a stone inside it.

## Conkleberry or Conkerberry (Anwekety)

The conkleberry comes from a tangly, spiny shrub with white flowers. The black (sometimes dark red) berry is very sweet and contains 2 small seeds. The berries are only available on the bush for a short period of a few weeks. However the berries can be picked from the ground and soaked in water before being eaten. The conkleberry features on many works of Aboriginal art that are featured in this website.



## Kangaroo, Goannas and Perenties

Still long time favourites of the Aboriginal people in Central Australia. Kangaroo is hunted in the modern way and cooked in the traditional way of tossing it in the fire first to singe off the hair and then put in a hole and covered with hot coals to cook. The tail and feet are usually cut off before cooking. 'Roo Tails' can be made into a nice stew or soup. If you would like to try it this recipe might be nice.

Goannas are caught on the ground and cooked in a similar fashion to the kangaroo. Toss in the fire to singe the skin and then lay the goanna on top of the hot coals until cooked.

Perenties are lizards and can be caught in trees or rabbit burrows or just walking around in creek beds. They are much bigger than goannas but cooked in the same way.

## Honey Ants

Aboriginal women will gather Honey Ants from nests found under Mulga Trees. The nest may extend as much as a metre or two deep into the ground and so it takes a lot of digging to get a handful of ants! The ants gather nectar from insects and then store the honey in their stomachs.



## Witchetty Grub

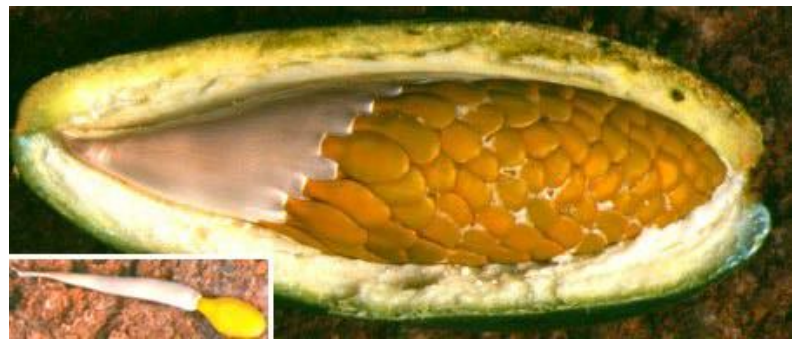
Probably the most 'famous' of the grub family, the witchetty grub is an important desert food. It is seen as a delicacy and can be taste tested by many locals and tourists as part of their visit to Central Australia. The grubs are found in the roots of the witchetty bush which is found around Alice Springs and Central Australia. Aboriginal women and children most commonly dig for them. They can be eaten as is or very quickly cooked in the coals of a fire. Some people say the witchetty grub has a taste like an almond.





<b>Family:</b>	Apocynaceae
<b>Distribution:</b>	Inland areas of South Australia, Western Australia, Northern Territory, Queensland, New South Wales and Victoria.
<b>Common Name:</b>	Bush pear; bush banana.
<b>Derivation of Name:</b>	<i>Marsdenia</i> ; named after William Marsden, 19th century plant collector and Secretary of the Admiralty. <i>australis</i> ; southern, referring to the global distribution of the species.
<b>Conservation Status:</b>	Not considered to be at risk in the wild

*Marsdenia* is a genus of about 60 species, 18 of which occur in Australia. They are generally climbers or small to medium shrubs.



Seed and fruit from Marsdenia Australia – Photo Horst Weber

*Marsdenia australis* is a climbing species with twining stems containing a milky sap. The linear shaped leaves are about 50 to 100 mm long by about 30 mm wide. The greenish-yellow flowers are about 75 mm long and occur in branched clusters from the leaf axils in spring to summer. The flowers are followed by a large, pear-shaped or elongated fruit containing numerous yellow-brown seeds attached to tightly packed feathery hairs. This species was formerly known as *Leichhardtia australis* and will still be found under that name in some references.

Few members of this genus are in cultivation but *M. australis* would be worth trying in a dry climate. It is not especially vigorous and will not overwhelm other plants growing nearby. It should be planted in a position receiving full sun or light, dappled shade and soils should be well drained. The seeds of *M. australis* are edible and are said to resemble garden peas in taste. The plant also produces an edible underground tuber. *M. australis* can be grown from fresh seed which requires no pre-treatment. Cuttings of firm, young growth should also be successful.

Ref: <http://anpsa.org.au/1-aus.html>

**Bush Banana** Common names: Silky pear, Native pear, Bush pear, Doubah, Cogola bush, Austral doubah Distribution: Bush banana is widespread in the arid to semi-tropical regions of South Australia, Western Australia, Northern Territory, Queensland, New South Wales and Victoria. Description: This vine has long twining stems to 4 metres high, which have a milky sap when broken. To the untrained eye, the Marsdenia fruit often seems to be part of the tree or

bush it is climbing on. The leaves vary from thin and spiky in the Flinders Ranges, to long and wide for most plants that grow around Alice Springs. The leaves broaden even more as you go northwards to the Gulf Country. The fruit is shaped a little like a large jalapeño chili. The fruit contains high levels of thiamine and its flavour is like crunchy snow peas and zucchini when small, but becomes very woody and fibrous when fully grown. Traditional uses/preparation: The young fruit is eaten raw straight from the bush, after the skin is removed. Older fruit is cooked whole in hot ashes, or the seeds are discarded and the thick outer rind is eaten raw. The flowers and fresh young leaves are eaten raw, and the older leaves are eaten after steaming. The edible roots and the tuber at the base of the vine (to 16 cm diameter) are reportedly only consumed during times of hardship. Commercial use: The fruit is available finely sliced and pickled in jars. [http://www.nintione.com.au/resource/DKCRC\\_Bush%20Food\\_IS-3\\_Bush%20Banana\\_July09.pdf](http://www.nintione.com.au/resource/DKCRC_Bush%20Food_IS-3_Bush%20Banana_July09.pdf)

### **Martini Cocktail using Kangaroo Island Spirits Samphire Vodka** by Jon Lark

This cocktail from Kangaroo Island Spirits uses samphire, a knobbly, salty native succulent that can be found growing in mudflats and estuaries in Australia.

- 1 dash Lillet Blanc
  - a few fresh Samphire sprigs
  - 2 green olives (optional)
  - 30 mls Kis Samphire Vodka
  - 30 mls Kis Wild Gin
1. Rinse the martini glass with the Lillet, then place glass in freezer for 3–5 minutes.
  2. In a cocktail shaker, add all ingredients. Shake till well-chilled.
  3. Remove martini glass from freezer. Strain contents of the shaker into the cocktail glass. Garnish with Samphire and/or olives.



Tip: If you like it spicy, try mixing together one teaspoon each of sweet paprika, cayenne pepper and salt, then rub the rim of the glass with a slice of lemon and dip in the seasoning to create a rim.

Ref: <https://munchies.vice.com/en/articles/australias-bush-is-coming-to-your-cocktail>

### **Seeds**

Edible seeds as bush tucker include the Pigweed Seed and more commonly and well known - the Wattle Seed. The pigweed seed is a staple food in the region and found on the ground in a plant that may spread up to a metre wide. The black seeds are produced in abundance and can be first roasted and ground into a paste or ground into a paste and then roasted. The wattle seed come from a shrub and the flowers are a bright, golden yellow. These also are roasted and ground into an edible paste or they can be eaten straight after roasting in the pod. Many recipes now call for wattle seeds such as this wattleseed damper.

Ref: <http://www.mbantua.com.au/bush-tucker/>

## **Book Review: The Biggest Estate on Earth - How Aborigines made Australia**

by Bill Gammage. 2012. Allen & Unwin, Crows Nest, New South Wales. 434 pp. ISBN 978 1 74331 1325. RRP Softcover approx \$40 Hardcover \$50.

Reviewed by Peter Haselgrove in The Queensland Naturalist 2016

In a detailed and extensively researched book Professor Bill Gammage explains the landscape vegetation encountered by early explorers and settlers when they arrived in Australia. They were amazed to find large areas of open grassland with few trees, with patches or ribbons of thick country separating them, resembling "gentlemen's parks" in England. The Aborigines used these areas as hunting grounds and areas for harvesting yams and native grains. In western Victoria systems of canals had been dug and elaborate fish trap constructed along the Murray-Darling system. In the arid interior, dams and wells had been constructed. These open areas were maintained by judicious burning by the Aborigines, implying an extremely careful and knowledgeable use of fire rather than the general idea of random burning to provide green pick to attract prey. This and the use of fish traps, dams and wells suggests that Australia was deliberately managed, principally with fire, to produce a landscape that was highly productive and sustainable. The consequences of the European invasion to the Aboriginal way of life and belief systems must have been catastrophic. Professor Gammage includes over 1500 books and articles in his bibliography and these are only a selection of those he read. He also travelled across much of the country looking at the evidence first hand. He refers to paintings and surveyors' maps made at the time of settlement, comparing them with the present landscape. Because most of his evidence is written rather than anecdotal and comes from the pens of people who were present at the time, he makes a very good argument for an Australia that was not "natural" in 1788 but a product of careful management by the people already here. The book is divided into four sections:

Australia in 1788

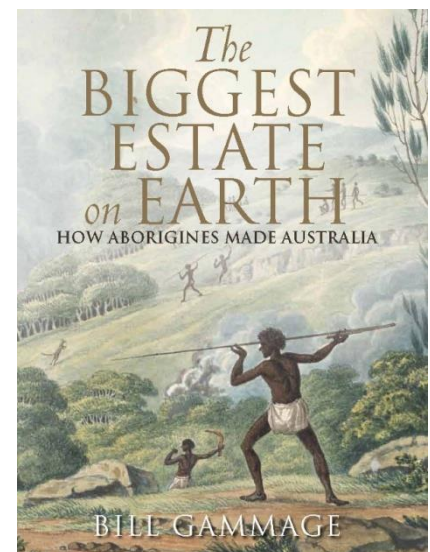
Why was Aboriginal land management possible?

How was the land managed

Invasion

Each section contains several chapters and there are two pages of definitions of words used in the book. Section I considers the landscape as it was at first settlement with an introduction stating three premises that the book proposes and then briefly enlarging on them. There are 58 illustrations of photographs, paintings and survey plans supporting the book's arguments.

Qd. Nat. 54 (4-6) 2016 54 Section II covers the nature of the country and changes that have occurred since European settlements and the nature of some of the vegetation and how it relates to fire. The Dreaming and the concept of country were introduced and the obligation of "caring for country" and individual's and group's responsibilities. Section III considers how fire was used by the Aborigines and some of the consequences of misuse. The plant communities found by the early settlers and the often distinct boundaries between grassland and scrub without change in soil types suggest that controlled fire was the cause. Early settlers commented about the increases in numbers of locusts, bush flies and mosquitoes and other insects following the prohibition of Aboriginal burning adjacent to towns. The last section details the consequences of European settlement to both the land and its inhabitants. For example, many inland areas have now been invaded by white cypress pine and other "woody



weeds" as a consequence of grazing and consequent lack of fire. The end result - suppression of grass growth, no fuel for controlled burns, carrying capacity reduction - is a vicious circle.

Not everyone agrees with the views expressed and in Appendix I the author replies to some of his critics and some other views of Aboriginal land management.

Appendix II lists scientific names for those plants named in the main text. Professor Gammage's book won numerous awards including the Prime Minister's Literary Award for Australian History 2012. It is filled with quotes, from short phrases to large paragraphs, which means it doesn't lend itself to quick easy reading but provides an essential insight into Australia's natural history.

To someone who was involved in land management for most of his working life, it is wonderful to see one's half-worked out ideas enlarged, evidence based and put into print. A wonderful book.

**Sheryl:** Perhaps one of our subscribers would like to do a review of Dark Emu by Bruce Pascoe.

### Hill bushtucker walk to celebrate Local Carers at Bowen – Nth Qld

Girudala's Mario Duca and David Webb with carers at Flagstaff Hill.

National Carers Week October 2016 has been marked in Bowen with Carers Queensland inviting local caregivers to a morning tea on Flagstaff Hill on Wednesday.



Fourteen carers from Bowen and Collinsville attended the event that also included a walk along Girudala's new bushtucker trail. Girudala's Mario Duca and David Webb were happy to show all Flagstaff Hill had to offer including wild rosella, native passionfruit, bush banana and sandpaper fig. After the walk the carers were welcomed back to 360 on Flagstaff where they were treated to guest speakers and morning tea. Carers Queensland's Mackay team leader Shanelle Dumma said Carers week provided an opportunity to recognise a vital group of unsung heroes in the community. "We are here today to celebrate carers and the support they give to their families," Ms Dumma said. "We are also here to show the community there is a group called carers and we are saving the government millions of dollars." Ms Dumma said the opportunity to link the morning tea with the bushtucker walk was too good to pass up with Carers Queensland looking for ways to integrate with the indigenous community. "We wanted to recognise local indigenous people (in our activities)," she said. "It's about supporting fledging business and giving support to this new initiative." When I heard about the bushtucker walk, I knew it would be a good opportunity to support them."



**Videos on Bushfood+                      compiled by Sheryl**

<a href="http://www.youtube.com/watch?v=7j8XR-Ae6lc">http://www.youtube.com/watch?v=7j8XR-Ae6lc</a>	Bush Tucker Man Part 1 Aust Outback Country
<a href="http://www.youtube.com/watch?v=EjtiHDZqKss">http://www.youtube.com/watch?v=EjtiHDZqKss</a>	Bush Tucker Man Part 2 Aust Outback Country
<a href="http://www.youtube.com/watch?v=oruSrNTgQs0">http://www.youtube.com/watch?v=oruSrNTgQs0</a>	Bush Tucker Man Part 3 Aust Outback Country
<a href="http://www.youtube.com/watch?v=XsKnmctOAMQ">http://www.youtube.com/watch?v=XsKnmctOAMQ</a>	Bush Tucker Man Season 1 Aurukun
<a href="http://www.youtube.com/watch?v=U_czeCgS4J4">http://www.youtube.com/watch?v=U_czeCgS4J4</a>	Bush Tucker Man Season 1 Arnhem Land
<a href="http://www.youtube.com/watch?v=LKNsLZfzsuQ">http://www.youtube.com/watch?v=LKNsLZfzsuQ</a>	Bush Tucker Man Season 1 Doomadgee
<a href="http://www.youtube.com/watch?v=AD_v41TSM3A">http://www.youtube.com/watch?v=AD_v41TSM3A</a>	Bush Tucker Man Season 1 Prince Regent Gorge
<a href="http://www.youtube.com/watch?v=_7RBJia7Q-w">http://www.youtube.com/watch?v=_7RBJia7Q-w</a>	Bush Tucker Man Season 1 The Wet in Port Keats
<a href="http://www.youtube.com/watch?v=4CbGDcxBJ-Q">http://www.youtube.com/watch?v=4CbGDcxBJ-Q</a>	Bush Tucker Man Season 1 Rainforest Part 1
<a href="http://www.youtube.com/watch?v=zHPNG9M-Ngg">http://www.youtube.com/watch?v=zHPNG9M-Ngg</a>	Bush Tucker Man Season 1 Rainforest Part 2
<a href="http://www.youtube.com/watch?v=pHUBQEiSV2o">http://www.youtube.com/watch?v=pHUBQEiSV2o</a>	Bush Tucker Man Season 1 Rainforest Part 3
<a href="http://www.youtube.com/watch?v=G1gVqNhoruQ">http://www.youtube.com/watch?v=G1gVqNhoruQ</a>	Bush Tucker Man Arnhem Land Part 1 of 3
<a href="http://www.youtube.com/watch?v=rBkodNIx4nY">http://www.youtube.com/watch?v=rBkodNIx4nY</a>	Bush Tucker Man Arnhem Land Part 2 of 3
<a href="http://www.youtube.com/watch?v=nrD5nXEgABA">http://www.youtube.com/watch?v=nrD5nXEgABA</a>	Bush Tucker Man Arnhem Land Part 3 of 3
<a href="http://www.youtube.com/watch?v=AXOD5VGGvYg">http://www.youtube.com/watch?v=AXOD5VGGvYg</a>	Bush Tucker Man Season 3 of Gold Fever Part 1
<a href="http://www.youtube.com/watch?v=AXOD5VGGvYg">http://www.youtube.com/watch?v=AXOD5VGGvYg</a>	Bush Tucker Man Season 3 of Gold Fever Part 2
<a href="http://www.youtube.com/watch?v=w19EmWdYiGU">http://www.youtube.com/watch?v=w19EmWdYiGU</a>	Bush Tucker Man Season 3 The Best of Them All Pt 3
<a href="http://www.youtube.com/watch?v=7A-nqul7w-k">http://www.youtube.com/watch?v=7A-nqul7w-k</a>	Original Bush Tucker Man Part 1 of 4
<a href="http://www.youtube.com/watch?v=tyC9czJi1Qg">http://www.youtube.com/watch?v=tyC9czJi1Qg</a>	Original Bush Tucker Man Part 2 of 4
<a href="http://www.youtube.com/watch?v=ytqH3cLPHTQ">http://www.youtube.com/watch?v=ytqH3cLPHTQ</a>	Original Bush Tucker Man Part 3 of 4
<a href="http://www.youtube.com/watch?v=ytqH3cLPHTQ">http://www.youtube.com/watch?v=ytqH3cLPHTQ</a>	Original Bush Tucker Man Part 4 of 4
<a href="http://www.youtube.com/watch?v=XfXK_hp2ibY">http://www.youtube.com/watch?v=XfXK_hp2ibY</a>	Bush Tucker Man Northern Territory Part 1 of 3
<a href="http://www.youtube.com/watch?v=VA5g4S0bD4E">http://www.youtube.com/watch?v=VA5g4S0bD4E</a>	Bush Tucker Man Northern Territory Part 2 of 3
<a href="http://www.youtube.com/watch?v=_MOLrE8Oqd0">http://www.youtube.com/watch?v=_MOLrE8Oqd0</a>	Bush Tucker Man Northern Territory Part 3 of 3
<a href="http://www.youtube.com/watch?v=P4vj1VcP248">http://www.youtube.com/watch?v=P4vj1VcP248</a>	Bush Tucker Man East to West Part 1 of 2
<a href="http://www.youtube.com/watch?v=BTyDIjYqHsw">http://www.youtube.com/watch?v=BTyDIjYqHsw</a>	Bush Tucker Man East to West Part 2 of 2
<a href="http://www.youtube.com/watch?v=ZAc5v4g7mDs">http://www.youtube.com/watch?v=ZAc5v4g7mDs</a>	Bush Tucker Man Cape York Part 1 of 3
<a href="http://www.youtube.com/watch?v=soQCFw4RcbQ">http://www.youtube.com/watch?v=soQCFw4RcbQ</a>	Bush Tucker Man Cape York Part 2 of 3
<a href="http://www.youtube.com/watch?v=_FVsKe1Z3w4">http://www.youtube.com/watch?v=_FVsKe1Z3w4</a>	Bush Tucker Man Cape York Part 3 of 3
<a href="http://www.youtube.com/watch?v=kYr6wt1Fi9o">http://www.youtube.com/watch?v=kYr6wt1Fi9o</a>	Bush Tucker Man Wildman Part 1 of 2
<a href="http://www.youtube.com/watch?v=v-i1-dQ4hBI">http://www.youtube.com/watch?v=v-i1-dQ4hBI</a>	Bush Tucker Man Wildman Part 2 of 2
<a href="http://www.youtube.com/watch?v=yObpeHD6_X4">http://www.youtube.com/watch?v=yObpeHD6_X4</a>	Les Hiddins on Bear "The Dill" Gryls
<a href="http://www.youtube.com/watch?v=XVEXMeitpkA">http://www.youtube.com/watch?v=XVEXMeitpkA</a>	Uluru-Kata Tjuta National Park -- Bush food
<a href="http://www.youtube.com/watch?v=3EShkimqrVE">http://www.youtube.com/watch?v=3EShkimqrVE</a>	Bush Tucker Food with Helen Lee
<a href="http://www.youtube.com/watch?v=yesXnCN_mH4">http://www.youtube.com/watch?v=yesXnCN_mH4</a>	Bush Tucker Man Wild Edibles of Aust - Ray Mears

<a href="http://www.youtube.com/watch?v=V1x_mTkDrps">http://www.youtube.com/watch?v=V1x_mTkDrps</a>	Ray Mears making Birch Bark Container
<a href="http://www.youtube.com/watch?v=C9aj_ocZ7Zo">http://www.youtube.com/watch?v=C9aj_ocZ7Zo</a>	Ray Mears Wild Food in England part 2
<a href="http://www.youtube.com/watch?v=2Sk-Lctr7PU">http://www.youtube.com/watch?v=2Sk-Lctr7PU</a>	Ray Mears Wild Food in England Episode 5
<a href="http://www.youtube.com/watch?v=Th6EOILK0DA">http://www.youtube.com/watch?v=Th6EOILK0DA</a>	Ray Mears Bushcraft S01E01 Aboriginal Britain
<a href="http://www.youtube.com/watch?v=wspwBcuOZFg">http://www.youtube.com/watch?v=wspwBcuOZFg</a>	Bush Mechanics Part 1
<a href="http://www.youtube.com/watch?v=vKCeYurFwKw">http://www.youtube.com/watch?v=vKCeYurFwKw</a>	Bush Mechanics Part 2
<a href="http://www.youtube.com/watch?v=htQjF4MIUwM">http://www.youtube.com/watch?v=htQjF4MIUwM</a>	Bush Mechanics Part 3
<a href="http://www.youtube.com/watch?v=4KCn_m0wUg8">http://www.youtube.com/watch?v=4KCn_m0wUg8</a>	Bush Mechanics Part 4

## Snippets from Sheryl

Does anyone know what the history of the name of this road is?  
Bush Tucker Road, Marsden QLD 4132

If you're visiting Victoria, this looks interesting: <http://www.rhylltroutandbushtucker.com.au/>  
30 Rhyll-Newhaven Road, Rhyll 3923 Phillip Island Phone 03 5956 9255

### Medicinal Plants in Australia Volume 2: Gums, Resins, Tannin and Essential Oils

by Cheryll Williams. Quite a number of the pages in this book are available on line to read.

<https://books.google.com.au/books?id=qc9UAQAAQBAJ&pg=PA336&lpg=PA336&dq=Albizia+adanthifolia+australia&source=bl&ots=zXBGwN0vH8&sig=THRpN3tZJwo0e8CAgCP26767rMU&hl=en&sa=X&ei=puvZVMqVO5Hg8AWwy4L4BA&ved=0CDIQ6AEwAw#v=onepage&q=Albizia%20adanthifolia%20australia&f=false>

### Kakadu Plum *Terminalia ferdinandiana*

Recently saw an a repeat episode of Destination Flavour Down Under with Adam Liaw on SBS at 4.40am which featured Gubinge Jam Ice Cream. Jams don't always have to end up spread on toast. They are also a simple way to create interesting ice-cream flavours. This recipe uses jam made from the Australian native fruit Gubinge, also known as Kakadu plum. Watch the video here: <http://www.sbs.com.au/food/recipes/gubinge-jam-ice-cream>

Bring the milk and cream to just below boiling point in a saucepan over medium heat. Meanwhile, whisk the sugar and egg yolks in a large bowl until thick and pale. Make a simple crème anglaise by gradually whisking the hot milk mixture into the egg mixture until combined. Return the mixture to the saucepan and place over medium-low heat for a few minutes, stirring with a wooden spoon until the mixture coats the back of the spoon. Add the jam to a large bowl. Strain the crème anglaise into the bowl through a fine sieve and whisk until well combined. Place the bowl into an ice bath to cool. Transfer the cooled mixture into an ice-cream machine and churn according to the manufacturer's instructions. Transfer the churned mixture to a 1L container and place in the freezer for at least 4 hours or until firm.

For more recipes in this series:

[http://www.sbs.com.au/food/recipes/search?search\\_api\\_views\\_fulltext=destination%20flavour%20down%20under&sort\\_by=search\\_api\\_relevance&sort\\_order=DESC&f\[0\]=field\\_cuisine\\_type%3A33894](http://www.sbs.com.au/food/recipes/search?search_api_views_fulltext=destination%20flavour%20down%20under&sort_by=search_api_relevance&sort_order=DESC&f[0]=field_cuisine_type%3A33894)



## Wattle we plant for Scavenging Chooks using Acacias: Permaculture Poultry: Part 1.

by Ian Simons, Helidon, Queensland

*Planting a forest of perennial plants to provide food for the complete diet of resident scavenging chooks is a desirable goal. An important relevant matter is the instinctive food preferences of the birds in such a forest environment. An obvious component of the forest is native plants, including wattles (acacias).*

A way of providing an adequate diet for chickens is to plant a food forest yielding the quality and quantity of food (seeds, fruits, insects, leaves) that the birds need. The aim is for the chickens to essentially live off the land.

Two of the hens in the film *The Chicken Run* expressed it rather neatly. Referring to the chicken dream paradise they were aiming to escape to, a chook playing a supporting role asked, "Who feeds us?"

The starring hen, named Ginger, responded, "We feed ourselves".



Given this requirement, how do we decide the types and number of plants for the chickens' food forest. Key determinants relate to

- what plants will survive in the particular growth environment
- what type and amount of food the flock needs
- when the plant food is actually available to the chickens (seasonality)
- what chickens prefer.

### What plants will survive

Hardy, survivable species are important in any sustainable system. Indigenous, self-reproducing plants are ideal.

Local conditions are critical in determining what the forest will contain. Thus, in my location at Helidon, Gatton Shire, I consider including a plant if it is resistant to

- waterlogging
- frost
- drought
- heat.

In this context, wattle species are particularly promising.

### What type and amount of food the flock needs

Scavenging flocks of chickens are ubiquitous throughout the developing world. Protein deficiency in the diets of these birds is common, probably the norm.

So, a principal aim becomes, to grow a food forest which provides a sufficiency of protein. In this respect, wattles come into their own. Wattle seeds typically have a very high protein content of 21-28%. (Note that laying pellets that you might purchase from a produce store would have a protein content of a mere 15%!)

Obviously, the forest must also contain plants whose yield contains other essential food elements

- fat
- carbohydrate
- fibre
- minerals, especially calcium carbonate (egg shell).

Such plants might include lillipillies, tuckeroos, mulberries, etc.

Given the amount of food required by the chooks, and considering the vagaries of nature, there is a need to overplant. That is, to aim for a surfeit of food forest harvest.

### Seasonality

There is the necessity to provide a continuity of supply of chook food throughout the year. Wattle species and their numbers need to be selected with this criterion in mind.

### What chickens prefer

Research has shown that given a range of available feedstuffs, chickens naturally select the correct components for a balanced diet.

It follows therefore, that given a surfeit of feed in a food forest, a flock of chickens will instinctively eat what they want, when they want.

## Wattle we plant for Scavenging Chooks: Permaculture Poultry using Acacias: Part 1 (continued)



Very little study seems to have been done on finding plants which yield types of food that chickens naturally prefer.

I have investigated this aspect.

A large flock of chooks was presented with the seeds of various wattle species at different times. Samples presented, were usually about 5g. Their eating response was recorded.

(It seems obvious that preference for wattle seeds presented is influenced by the type and amount of other feed available at the time. However, this is not seen as a major issue. This is because a standard type of commercial laying pellets was always available to the birds *ad lib.*)

The results of the tests are given in the following TABLE 1. The levels of preference are indicated. Four (4) levels are used

- not eaten
- ate reluctantly
- ate
- ate avidly

Further Acacia species hold promise as likely chook tucker for various reasons. Species and reasons are listed in TABLE 2.

### Conclusion

Wattles from TABLE 1, in the 'ate avidly' category are gradually being incorporated into the chooks' food forest at Helidon.

Species from TABLE 2 are the next candidates for testing, with the view of including successful species in the forest.

TABLE 1: CHOOK SEED PREFERENCES

<i>Acacia aneura</i>	Ate avidly
<i>A baileyana</i>	Ate avidly
<i>A binerva</i>	Ate
<i>A colei</i>	Ate avidly
<i>A confluens</i>	Not eaten
<i>A coriacea</i>	Not eaten
<i>A craspedocarpa</i>	Not eaten
<i>A dealbata</i>	Ate avidly
<i>A deanii</i>	Ate
<i>A decurrens</i>	Ate avidly
<i>A drummondii</i>	Ate
<i>A elata</i>	Ate
<i>A falcata</i>	Ate
<i>A farnesiana</i>	Not eaten
<i>A fimbriata</i>	Ate avidly
<i>A holosericea</i>	Ate
<i>A ligulata</i>	Ate avidly
<i>A macradenia</i>	Ate reluctantly
<i>A neriiifolia</i>	Ate
<i>A pendula</i>	Ate reluctantly
<i>A perangusta</i>	Ate
<i>A podalyriifolia</i>	Ate/ate avidly
<i>A pycnantha</i>	Ate avidly
<i>A rhodophloia</i>	Not eaten
<i>A salicina</i>	Not eaten
<i>A saligna</i>	Ate
<i>A simsii</i>	Ate/ate avidly
<i>A stenophylla</i>	Not eaten
<i>A vestita</i>	Not eaten
<i>A victoriae</i>	Ate reluctantly

TABLE 2: ACACIA SEEDS, LIKELY CHOOK TUCKER

<i>A ampliceps</i>	Unprocessed seeds can be eaten by humans.
<i>A celastrifolia</i>	Common bronzewing eats seed from the ground.
<i>A cyanophylla</i>	Seeds fed to chickens in experiments in Cyprus.
<i>A cyclops</i>	Seeds eaten by a variety of birds, including pigeon.
<i>A dentifera</i>	Important for seed eating birds.
<i>A floribunda</i>	Seed is bird dispersed.
<i>A implexa</i>	Pigeons feed on seeds.
<i>A lanigera</i>	Provides seeds for birds.
<i>A longifolia</i>	Stated as "chicken feed" in reference. Seed is bird dispersed. Emu food.
<i>A maidenii</i>	Seeds eaten by common bronzewing.
<i>A mearnsii</i>	Provides seeds for birds.
<i>A melanoxylon</i>	Seeds, possible chook food, according to letter from Tree Seed Centre.
<i>A prominens</i>	Seeds are very attractive to the two forms of bronzewing pigeon.
<i>A retinodes</i>	Provides seeds for birds.
<i>A sophorae</i>	Seed is bird dispersed.
<i>A tumida</i>	"Producing ... protein rich seeds for poultry feed," in reference.

# Wattle we plant for Scavenging Chooks: Part 2

by Ian Simons, Helidon, Queensland

Planting a forest of perennial plants to provide food for the complete diet of resident scavenging chooks is a desirable goal. An obvious component of the forest is native plants, including wattles (acacias).

The first article on wattle seeds as food for scavenging chooks (ASG Newsletter 98, September 2007), looked at the instinctive preferences exhibited by the birds.

A large flock of chooks at Helidon, Queensland was presented with the seeds of various wattle species at different times. Samples presented were usually about 5g. Their eating response was recorded. Results were given in the first article. Also, acacia species were suggested for further testing. Such further testing has now been done. The results of all tests completed to date, are given in the following TABLE 1. The levels of chook preferences for seed are indicated. Four (4) levels are used

- not eaten
- ate reluctantly
- ate
- ate avidly.

It is surprising that *A. tumida* and *A. saligna* scored low preferences. Both species were expected to show more promise, the former being quoted in a reference, as “producing ... protein rich seeds for poultry feed”: whilst seeds of the latter were fed to chickens in experiments in Cyprus.

## *Acacia salicina* (Sally wattle)

*Acacia salicina* is the native wattle. It is endemic on the Helidon block. It grows into a sizeable tree which can bear a huge crop of seeds during November. It has the added advantage of producing a “tip crop” of seeds, which grows at the end of the branches.

This “tip crop” appears in September: a period when there is a paucity of other naturally available chook food.

Even though the chooks gave it a low preference (TABLE 1), they do eat the seeds.

The evidence is readily seen. One rather large tree drops seeds on both sides of the poultry pen fence. The seeds with their distinctive bright red arils can be seen covering the ground outside the pen. Inside, few seeds show. The chooks have eaten them.

## Conclusion

Wattles in the ‘ate avidly’ category are gradually being incorporated into the chooks’ food forest at Helidon = long term program.

These wattles are listed in TABLE 2 below.

Further, in view of its value in providing an early spring crop, the endemic Sally Wattle is encouraged to grow and multiply.

TABLE 1: CHOOK SEED PREFERENCES

<i>Acacia ampliceps</i>	Salt Wattle	Not eaten/ ate reluctantly
<i>A. aneura</i>	Mulga	Ate avidly
<i>A. baileyana</i>	Cootamundra wattle	Ate avidly
<i>A. binervia</i>	Coast myall	Ate
<i>A. celastriifolia</i>	Grey myrtle wattle	Ate reluctantly
<i>A. colei</i>	Cole’s wattle	Ate avidly
<i>A. confluens</i>	Wyrilda	Not eaten
<i>A. coriacea</i>	Wirewood, Desert oak	Not eaten
<i>A. craspedocarpa</i>	Hop mulga	Not eaten
<i>A. cyclops</i>	Western coastal wattle	Not eaten
<i>A. dealbata</i>	Silver wattle	Ate avidly
<i>A. deanei</i>	Dean’s wattle	Ate
<i>A. decurrens</i>	Black wattle	Ate avidly
<i>A. drummondii</i>	Drummond’s wattle	Ate
<i>A. elata</i>	Mountain cedar wattle	Ate
<i>A. falcata</i>	Burra	Ate
<i>A. farnesiana</i>	Cassie, mimosa wattle	Not eaten
<i>A. fimbriata</i>	Brisbane golden wattle	Ate avidly
<i>A. floribunda</i>	White willow wattle	Not eaten/ ate reluctantly
<i>A. holosericea</i>	Soapy wattle	Ate
<i>A. implexa</i>	Lightwood, hickory wattle	Not eaten/ ate reluctantly
<i>A. lanigera</i>	Woolly wattle	Not eaten
<i>A. ligulata</i>	Dune wattle, wirra	Ate avidly
<i>A. macradenia</i>	Zig-zag wattle	Ate reluctantly
<i>A. mearnsii</i>	Black wattle	Ate reluctantly
<i>A. melanoxylon</i>	Blackwood	Not eaten
<i>A. neriifolia</i>	Oleander wattle	Ate
<i>A. pendula</i>	Weeping myall	Ate reluctantly
<i>A. perangusta</i>	Eprapah wattle	Ate
<i>A. podalyriifolia</i>	Queensland silver wattle	Ate/ate avidly
<i>A. prominens</i>	Gosford wattle	Ate reluctantly
<i>A. pycnantha</i>	Golden wattle	Ate avidly
<i>A. retinodes</i>	Wirilda wattle	Not eaten/ ate reluctantly
<i>A. rhodophloia</i>	Minni ritchi	Not eaten
<i>A. salicina</i>	Cooba, sally wattle	Ate reluctantly
<i>A. saligna</i> ( <i>A. cyanophylla</i> )	Golden wreath wattle	Ate
<i>A. simsii</i>	Heathlands wattle	Ate/ate avidly
<i>A. sophorae</i>	Coastal wattle, willow wattle	Not eaten/ ate reluctantly
<i>A. stenophylla</i>	Munumula	Not eaten
<i>A. torulosa</i>	Thancoupie	Not eaten
<i>A. tumida</i>	Pindan wattle	Not eaten/ ate reluctantly
<i>A. vestita</i>	Hairy wattle	Not eaten
<i>A. victoriae</i>	Bramble wattle	Ate reluctantly

TABLE 2: WATTLES IN ‘ATE AVIDLY CATEGORY

Species name	Common Name
<i>A. aneura</i>	Mulga
<i>A. baileyana</i>	Cootamundra wattle
<i>A. colei</i>	Cole’s wattle
<i>A. dealbata</i>	Silver wattle
<i>A. decurrens</i>	Black wattle
<i>A. fimbriata</i>	Brisbane golden wattle
<i>A. ligulata</i>	Dune wattle, wirra
<i>A. podalyriifolia</i>	Queensland silver wattle
<i>A. pycnantha</i>	Golden wattle
<i>A. mearnsii</i>	Provides seeds for birds.
<i>A. simsii</i>	Heathlands wattle

## A response to the Wattles and Chooks article



We have provided copies of the above article, by Ian Simons, as well as Ian's previous article (ASG September 2007 Newsletter), to Tony Rinaudo from World Vision Australia. In recent years, World Vision has been working to promote the use of Australian acacias in agro-forestry projects in a number of African countries, and Tony has been at the forefront of this research. Tony has provided some feedback in relation to Ian's articles. He notes that in Niger, seeds of *A. colei*, *A. torulosa* and *A. tumida* are all cooked and used for human consumption. The raw bran of *A. colei* seed was given to chickens, but at the time he was in Niger they didn't have enough seed of the other species to do experiments on chickens. However, he would not have expected that there would be any difference between raw *colei*, *torulosa* and *tumida* for chicken feed (which is contrary to the results of Ian's research which showed that of these three species, only *A. colei* was eaten avidly by his chickens). Tony comments that Ian's results are interesting and he is not sure how to explain it. He notes that, sometimes, different provenances of the same species may make a difference. He remembers being surprised at the reaction of Aborigines to *A. coriacea* planted in Niger. It is one of their favourites and can be eaten steamed in the jacket like a bean – but they wouldn't touch this one because it was so bitter compared to the one they were used to. In relation to *A. torulosa*, Tony notes that when he was looking into this species, he was warned that there could be a severe reaction to the dust when cleaning torulosa pods. They received the following notice from Dr Lex Thomson: "The dust from the resin of mature *A. torulosa* pods is INCREDIBLY NOXIOUS." As it turns out, they never experienced this, so either there may have been some provenances which have this effect, or there was an environmental influence, or the person processing torulosa may have been allergic. But certainly, they never had a problem in Niger and they have been testing a number of provenances. Tony notes that with World Vision he works in a range of environments including the highlands of Ethiopia, Rwanda and Uganda. In these areas some of our Australian temperate/Mediterranean climate acacias have already been introduced and do well. For example, *A. saligna* is very widely planted in Ethiopia, a country with a population of 5+ million who are chronically poor every year, yet nobody is aware that the seed is edible. *A. dealbata*, *A. mearnsii* and others are also grown there, but he does not know anything about their seeds.

**Sheryl:** I know a few of you have chooks so thought you'd be interested in these articles that originally appeared in the Acacia Study Group newsletters:

<http://anpsa.org.au/acaciaSG/acacia98.pdf>

<http://anpsa.org.au/acaciaSG/acacia99.pdf> This is the update.

### Future Events - Mark your calendar

**Paton Park Native Nursery** is a community nursery (previously known as Greening Australia Nursery) 57 Paten Road, The Gap. Lots of bush food plants for sale.

We will be having an event at the Nursery sometime in the New Year. Talks and Food Tastings.

<http://www.sgapqld.org.au/whats-on/major-events>

### Native Plants Qld Autumn Native Plant Market

Friday, May 5th 2017 to Saturday, May 6th 2017 Grovely TAFE, Woking Street, Keperra.

**Sheryl: Hope you've had a good year and look forward to hearing from you with your stories on Australian food plants. Love to get a profile also to include in the newsletter! In the next issue, I will give you a list of books on Australian food plants.**