



*APACE WA*

*BUSH TUCKER*

*PLANTS FOR YOUR GARDEN*

*AND YOUR PLATE*

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**We provide in good faith and as convenience to users of bush tucker plants: plants, descriptions of the plants, the parts of plants that have been eaten and how the plants can be grown.**

**Regards,**

**Apace Aid (Inc).**

# **Introduction to Bush Tucker Plants**

## **Aboriginal Australia**

The Aboriginal people of Australia had over 100 nations with more than a 100 different languages when the first Europeans began to arrive.

There are archaeological sites in Australia which demonstrate that there were people in Australia as far back as 40,000-50,000 years ago. There is a strong likelihood that people arrived in Australia 60,000 years ago during a major glacial period on the earth. During this time ocean water was locked up in ice which led to the fall in ocean water levels and New Guinea and Australia were now connected by land bridges. Mainland Australia and Tasmania were also connected by land bridges.

### **Australian Aboriginal People**

Ecologists and naturalists up to recently tended to believe that Australia was a wild place that was in a pristine natural state when the first Europeans arrived and had never been altered by people. Nothing could be further from the truth. The whole country including Tasmania had been landscaped by Aboriginal people.

The Aboriginal people used fire to landscape the continent to a very fine degree. The skill of applying cold and hot burns and the number of years between burning determined what species were to thrive and what species were to be controlled. The Aborigines were able to create grasslands that were clean of timber and extensive. Creating food for animals and making the country easy to navigate. Many early accounts from settlers talk of the avenues and roads that the first settlers and explorers used in the treks across country and the ability to gallop a horse through the grasslands without fear of logs and sticks in the undergrowth.

When the first settlers arrived in every port in Australia they simply herded their animals off the ships and moved across the country without the resort of an axe or hard labour to make their way through the country.

Aboriginal people are described as 'hunter gatherers'. The term itself was and is used in a derogatory sense that these people were not civilised and therefore less than.

Civilised peoples grow food and harvest it, trade goods across the country, build houses and shelters, dig wells for water, water crops, store grain, increase livestock rates, build fish traps, make use of the tides and prepare food and feasts at their ceremony sites.

Aboriginal people planted, grew, cared for and harvested crops all over Australia. This included digging wells for watering of crops and granaries to store harvested grain. Aboriginal people grew crops for livestock and with the practised use of fire effectively increased stocking rates by the new regrowth from perennial grasses after burning.

Aboriginal people had many systems of housing according to the needs of the people. These included large houses for up to 30 people, mud houses, tree houses, and temporary shelters of bark and brush.

Aboriginal people traded wares across the whole of the country.

Aboriginal people developed fish traps, made use of the tides, had canoes and lived off the oceans and waterways.

Aboriginal people planted food crops at their ceremony sites and these can be still seen today.

Aboriginal people protected their wetlands as they knew that these were refuges that became the restocking stations for the country during and after severe droughts. (It is apparent European “civilised “people in Australia don’t know how to do this). In this regard the Aboriginal people had 60,000 years of sustainable practices on the landscape and the Europeans to date less than 220 years of unsustainable practices.

The Noongar people passed down oral stories from the past. These include oral stories about the cold times (perhaps the last ice age 20,000 years ago?) It also includes flood stories which are at least 7,000-10,000 years old and are recorded from many Aboriginal coastal groups around Australia. This story is also recorded in rock carvings on the North west coast of fish species that are carved over the top of land animals.

The Noongar people have a system of 7 generations of knowledge which enabled these stories to be held by seven generations at all times and to be continually passed on to the following generations. If you want to hear these stories you need to find and listen to a Noongar person who is willing to teach you.

**Contact:** Replants Wray Avenue Fremantle for Fireside talks with Noel Nannup is one source.

## **Eating and Drinking Bush Tucker Plants from the Perth Region**

Care must be taken when eating any food. You may have allergies to any number of plant foods. Bush tucker plants are not different and you may have allergies to them. Some plants listed elsewhere as bush tucker are very toxic and Aboriginal people developed ways of preparing these foods safely for consumption.

If you haven’t eaten a plant before and you wish to try it, go slowly and follow these six steps.

1. Don’t eat any first up. Use your senses! First smell it and describe its scent if any.
2. After washing off any soil put a small portion in your mouth and taste. Do not swallow.
3. If it tastes alright, bite a small piece off and chew but do not swallow.
4. Describe the flavours (sweet, bitter, horrible, nice etc)
5. Describe the texture (crunchy, slimy, soft, disgusting)
6. If still tasting OK you choose whether to swallow or not!

## Australian Bush Tucker Plants can be divided into five sources of food.

1. Tubers including corms, rhizomes and roots that are eaten raw or roasted.
2. Leaves and flowers that are eaten raw or blanched or in the case of sedge leaf bases are chewed or pounded.
3. Fruits including berries and pods that are eaten raw or roasted
4. Flowers that are steeped in water for sugar drinks or fermented to make alcohol.
5. Seeds that are ground into powder to make cakes and damper.

### One: Bush Tucker Perennial Herbs with Tubers

(Tuberous plants, perennial herbs, dying off in summer and reshooting in winter.)

#### WESTERN AUSTRALIAN SPECIES

- |     |  |                        |                       |
|-----|--|------------------------|-----------------------|
| 1.  | <b><i>Bolboschoenus caldwellii</i></b> | Marsh Club-rush        |                       |
| 2.  | <b><i>Burchardia congesta</i></b>      | Milk Maids             | <b><i>Kara</i></b>    |
| 3.  | <b><i>Caesia micrantha</i></b>         | Pale Grass-lily        | <b><i>Karhrh</i></b>  |
| 4.  | <b><i>Chaemascilla corymbosa</i></b>   | Blue squill            |                       |
| 5.  | <b><i>Cycnogeton huegelii</i></b>      | Water Ribbons          |                       |
| 6.  | <b><i>Dichopogon capillipes</i></b>    |                        |                       |
| 7.  | <b><i>Dichopogon fimbriatus</i></b>    | Chocolate Lily         |                       |
| 8.  | <b><i>Dichopogon preissii</i></b>      | Chocolate Lily         |                       |
| 9.  | <b><i>Dioscorea hastifolia</i></b>     | Spear leaved Dioscorea | <b><i>Warrine</i></b> |
| 10. | <b><i>Haemodorum Spp.</i></b>          | Bloodroot              | <b><i>Mardja</i></b>  |
| 11. | <b><i>Schoenoplectus validus</i></b>   | Lake Club-rush         |                       |
| 12. | <b><i>Sowerbaea laxiflora</i></b>      | Purple tassels         |                       |

## **WESTERN AUSTRALIAN BUSHTUCKER TUBERS**

### **1. *Bolboschoenus caldwellii* Marsh Club-rush *Noongar name not recorded***

Marsh Club-rush is a rhizomatous herbaceous perennial sedge 0.3-1.2m high. Leaves are grass like and long, 3-12mm wide with a prominent mid-rib. Flowers in spring are yellow and brown and the plant is dormant over summer and reshoots in the winter months.

Marsh Club-rush occurs in wetland sites as the common name suggests. The rhizome has a sweet coconut flavour when white and starchy. The roots are also edible, but the skin can be tough. Good plant for a bog garden or transpiration bed as it will quickly spread via the rhizomes. Marsh Club-rush can also be grown from seed and occurs in wetlands from Augusta to Geraldton and Albany and Esperance.

### **2. *Burchardia congesta* Milk Maids *KARA***

Kara is an herbaceous perennial to 280-600mm high, usually un-branched. There are a few long leaves at the base and shorter leaves higher on the stem. The white 6 petalled flowers are in a cluster of 2-7 flowers with yellow anthers and the three angled ovary prominent in the centre. The plant is cormous and tuberous with bright white spider-like clusters radiating from the stem. The youngest cluster is on top of and intertwined with the two year old tuber.

The two year old tubers are thinner than the new 1 year old tubers at spring time. The tubers are 40-80mm long and 2-5mm wide.

The raw tubers are crunchy and pleasant to eat. The lightly roasted tubers (220 degrees for 10 minutes in an oiled tray) are delicious and are great with salt.

Kara can be grown from seed.

Kara occurs on the Swan Coastal Plain, Darling Range and western wheat belt from Albany to Geraldton.

### **3. *Caesia micrantha* Pale Grass-lily *Karhrh***

Karhrh is an herbaceous perennial herb to 500mm high that flowers in spring and dies down to its rootstock over summer and reshoots in winter each year. The flat basal leaves are up to 500mm long and 16mm wide. The inflorescence up to 500mm long and there are several greyish-blue flowers in each of the axils.

The tubers are numerous and are 15-20mm long and 6-8mm wide. The raw tubers are crunchy and pleasant to eat although slightly bitter. The outer skin is that of a light tan potato colour, but with the skin removed the tubers are bright white. Pale grass lily can be grown from seed.

The lightly roasted tubers (220 degrees for 10 minutes in an oiled tray) are delicious and are great with salt. A sweet sauce would cover the bitterness.

Karhrh occurs on the Swan Coastal Plain, Darling Range and wheat belt from east of Albany to Geraldton.

**4. *Chaemascilla corymbosa*** Blue squill *Noongar name not recorded*

Blue squill is a small plant 40-290mm high. It has 4-7 flat lying basal leaves that turn from green to red and to yellow. The leaves are 2-12mm wide and up to 80mm long.

It has blue flowers on a branched inflorescence (panicle) to 150mm high.

The white root tubers are stacked like little sausage packs. They are close to the surface and easy to collect. The root tubers are white, short and thin. Blue squill can also be grown from seed. The raw tubers are crunchy and pleasant to eat. The lightly roasted tubers (220 degrees for 10 minutes in an oiled tray) are delicious and are great with salt.

Blue Squill occurs on the Swan Coastal Plain, Darling Range and wheat belt from Esperance to Northampton.

**5. *Cycnogeton huegelii*** Water Ribbons *Noongar name not recorded*

Water Ribbons is an aquatic perennial herb 0.3-1.2 metres high. It is rhizomatous and tuberous and has green flowers.

The tubers are from 4mm-40mm wide and high in vitamin C. They can be collected at any time. The white roots can also be eaten. The numerous small banana shaped fruits contain the seed that can grow new plants.

Good plant for a bog garden or transpiration bed as it will quickly spread via the rhizomes. Plants occur from Albany to Augusta and Perth with an outlier at Geraldton.

**6. *Dichopogon capillipes*** Chocolate lily *Noongar name not recorded*

Chocolate lily is an herbaceous perennial herb to 1 metre high that flowers in November-February and dies off over summer and reshoots in winter each year. The leaves are up to 200mm long and 10mm wide in a rosette dying back during flowering with a reddening at the leaf bases. The large flowering panicle is branched and spreading with flowers in the axils. The perianth (outer floral whorl) is pink to violet and the anthers purple.

The root tubers are ovoid and with the roots growing through them. The root tubers are many per plant and can be more than 100 per plant. They are 15-20mm long and 6-8mm wide. The two year old tubers are a darker brown than the lighter coloured 1 year old tubers. Chocolate Lily can also be grown from seed.

The raw tubers are crunchy and a little bitter but not bad to taste. The lightly roasted tubers (220 degrees for 10 minutes in an oiled tray) are more palatable and are great with salt. A sweet sauce would cover the bitterness. General percentages of water and protein for *Dichopogon* are: 82% water (fresh weight) and 2.4% protein (dry weight).

Occurs north of Albany to Busselton on the coast and then inland to the wheat belt and north to Gingin and Geraldton.

**7. *Dichopogon fimbriatus*** Chocolate lily      *Noongar name not recorded*

Chocolate lily is an herbaceous perennial herb to 0.7 metres high that flowers November-February and dies off over summer and reshoots in winter each year. The leaves are up to 200mm long and 12mm wide in a rosette dying back during flowering with a reddening at the leaf bases. The large flowering panicle is branched and spreading with flowers in the axils. The perianth (outer floral whorl) is pink to violet and the anthers purple. The root tubers are ovoid and with the roots growing through them. The root tubers are many per plant. Chocolate Lily can also be grown from seed.

The raw tubers are crunchy. The fresh new white tubers are not bitter and are great to eat fresh.

The lightly roasted tubers (220 degrees for 10 minutes in an oiled tray) are great with salt.

General percentages of water and protein for *Dichopogon* are: 82% water (fresh weight) and 2.4% protein (dry weight).

**8. *Dichopogon preissii*** Chocolate Lily      *Noongar name not recorded*

*Dichopogon preissii* is an herbaceous perennial herb to 0.5 metre high that flowers August to October and dies off over summer and reshoots in winter each year. The leaves are up to 250mm long and 6mm wide in a rosette dying back during flowering. The flowering panicle is branched with many purple-pink flowers in the axils.

The new root tubers are white and ovoid. The root tubers are many per plant. The new raw tubers are crunchy and very slightly bitter but not bad to taste. The lightly roasted tubers (220 degrees for 10 minutes in an oiled tray) are more palatable and are great with salt. A sweet sauce would cover the bitterness. Chocolate Lily can also be grown from seed. General percentages of water and protein for *Dichopogon* are: 82% water (fresh weight) and 2.4% protein (dry weight).

**9. *Dioscorea hastifolia*** Spear leaved Dioscorea      **Warrine**

*Dioscorea hastifolia* is climber with slender twining stems to 2 metres. Leaves are alternate with the blade triangular to hastate (spear shaped) in the lower leaves and linear in the upper leaves. Yellow flowers occur in May-July and the three angled fruits maturing in September -October.

The long, thin and white tubers are one to many with offshoots from the tuber. Sections of the tubers can be also used to produce more tubers. Two-three crops per year are possible. Warrine can be eaten raw but tastes much better lightly roasted and lightly salted. (220 degrees for 10 minutes on an oiled tray).

This plant was grown extensively along the coast from South of Perth to Shark bay. After digging up the long tubers, the tops were replanted by the Noongar people. Warrine also occurs in many ceremony sites. The many wells described by explorers as 'perfectly executed', were dug to water the crops and extend the growing period. The yam fields were not little backyard operations, they were extensive, covering many square kilometres.



**10. *Haemodorum Spp.***      Bloodroot      ***Mardja***

There are 15 *Haemodorum* species in Western Australia. There are 4 species of *Haemodorum* commonly found on the Swan Coastal Plain. They are all bulbaceous perennial herbs that dieback over summer and are renewed each year in spring. The old and new flowering stems are conspicuous in the bushland and therefore very easy to find to find the bulbs. The *Haemodorums* are closely related to the Kangaroo paws and can all be grown from seed.

The *Haemodorums* produce a bulb with a flowering stem. The bulb can be up to 600mm deep. The bulb is very hot to eat and can be described as peppery or chili like. The plant can be dried to make “chilli” flakes to be used as a hot additive to dishes. A dye can also be obtained from the bulb.

*Haemodorum laxum* is 0.6-1.4m high, flowers are black, brown and green

*Haemodorum paniculatum* is 0.4-1.8m high, flowers are green, brown and yellow.

*Haemodorum simplex* is 0.2-0.65m high, flowers are black & brown on wetter sites.

*Haemodorum spicatum* 0.3-2m high, flowers black, brown & yellow on seasonally wet sites.

**11. *Schoenoplectus validus*** Lake Club-rush      ***Noongar name not recorded***

*Schoenoplectus validus* is a large sedge to 2m high. Lake Club-rush will grow in water to a depth of 1.3m in silt and sand. Found in fresh or brackish water, swamps and estuaries.

The stems are stout and terete 3-8mm broad with longitudinal grooves. Brown flowers occur October to February. The stem bases can be chewed or pounded. The fresh white roots are crisp and pleasant to eat. They can also be grown from fresh seed.

**12. *Sowerbaea laxiflora***      Purple tassels      ***Noongar name not recorded***

*Sowerbaea laxiflora* is a tufted herbaceous perennial herb to 450mm high that flowers in spring and dies off over summer and reshoots in winter each year. The erect basal leaves are shorter than the flowering scape. The stalks of the purple flowers continue to grow as the flower matures. The anthers are large conspicuous and yellow

The root tubers are extensive and have hundreds of edible small rodlike tubers growing laterally off the roots. They are refreshing and pleasant to chew but you won't get a meal out of them. Then again added to a stir fry they could be delicious. They are difficult to grow from seed.

**Eastern States Tubers**

**13. *Bulbine bulbosa***      Bulbine Lily      ***Parm***

*Bulbine bulbosa* is an eastern states bush tucker plant that produces bulbs. It is densely tufted perennial herb to 750mm high that grows in colonies in the wild. The leaves are green-grey, succulent and channelled to 400mm long. The bright yellow star flowers are borne on racemes of up to 50 flowers. Each flower lasts for just one day. The plump round corms are delicious to eat though they need several years to mature before eating.

#### **14. *Microseris lanceolata***

Yam Daisy

***Murnong***

*Microseris lanceolata* is an eastern states bush tucker plant that produces tubers. The aboriginal name for this plant is Murnong. Murnong is an erect tuberous perennial herb with yellow flowers in summer to autumn. The sweet milky tubers can be eaten raw but are better roasted. The tubers are available all year but are less palatable during winter.

### **Two: Bush Tucker Perennial Herbs with Leafy Greens and Edible Flowers**

#### ***Atriplex cinerea***

Grey Saltbush

*Noongar name not recorded*

*Atriplex cinerea* is a spreading to erect salt tolerant shrub to 1.5m high. It has silver foliage and flowers September to October. It is a dense shade tolerant shrub.

Grey Saltbush is a bush tucker plant. The leaves can be blanched or boiled and eaten as spinach. The raw leaves are salty. Blanched leaves taste better and steamed leaves are tender. Adding lemon juice and butter makes the dish more flavoursome.

#### ***Centella asiatica***

Gotu Koli.

*Noongar name not recorded*

*Centella asiatica* has a worldwide distribution including, Africa, Madagascar, Australia and the Pacific, Asia and China, India, Southern USA, Central and South America. *Centella* can be added to salads, eaten raw or infused as a tea. *Centella* is used as a medicinal herb in ayurvedic medicine, traditional African medicine and traditional Chinese medicine. There are many medicinal claims about *Centella* including help with memory loss, burns, skin diseases and longevity. The raw leaves are bitter. Blanched leaves taste better although steamed leaves seem to be more bitter. Adding lemon juice and butter makes the dish more flavoursome.

#### ***Rhagodia baccata***

Berry saltbush

*Noongar name not recorded*

*Rhagodia baccata* is a spreading ground cover shrub to 1 metre high and up to 3metres wide. It occurs mainly on the coastal dunes and limestone outcrops. It has cream flowers in autumn and will grow in deep shade or full sun. The edible berries are a red colour when mature. The leaves can be boiled as a vegetable. The raw leaves are salty. Blanched leaves taste better and steamed leaves are more tender. Adding lemon juice and butter makes the dish more flavoursome.

#### ***Sarcocornia quinqueflora*** Beaded Samphire *Noongar name not recorded*

*Sarcocornia quinqueflora* is a low perennial, herb or shrub, 0.1-0.5 m high. It occurs in swamps, estuaries and salt lakes in sand, sandy loam, clay and moderately saline soils.

Flowers in February. Samphire's around the world are pickled to add to other dishes.

***Tetragonia tetragonoides***      Warrigal Greens      Eastern Australia and NZ

Warrigal greens are an eastern states and New Zealand plant. The plant is low and spreading with thick succulent stems. The leaves are bright green and spear shaped. The tiny yellow star shaped flowers are at the base of the leaves. Flowers in spring and summer. The young leaves can be eaten raw in a salad or blanched or boiled for 1-2 minutes. The water needs to be discarded afterwards due to oxalic acid in the leaves. Tetragonia occurs on sand, stony beaches and sand dunes along the coast.

**Three:      Bush Tucker Fruiting Shrubs**

***Billardiera fusiformis***      Australian Blue Bell      ***Gumug***      Gumug is a small shrub and twiner. The bell shaped flowers are a striking blue. The fleshy green/blue pod shaped berries are up to 20cm long can be eaten when ripe and are quite sweet with a soft texture. The fruits can also be made into jam or wine

***Dianella revoluta***      Blueberry Lily      ***Mangard***

Mangard is a hardy clumping plant that can form colonies. The plant grows from rhizomes and can reshoot from the underground rhizomes after fire. This is a fire avoider syndrome. Mangard occurs in all states of Australia. The leaves are thick and tough and grow to 140mm. The blue and yellow flowers are on wiry stems that branch. The flowers last only one day.

The edible berries can be eaten raw and have a sweet flavour. The berries are dark blue to purple when mature.

***Enchylaena tomentosa***      Barrier Saltbush      *Noongar name not recorded*

Enchylaena tomentosa is a low growing spreading shrub to 1 metre high. A bush tucker plant that has soft succulent foliage and heavy shade tolerance. Flowers May to September and the very small edible have a shot of sweet juice. The berries mature from green to red when they are ready to eat. Although normally prostrate it will ascend cyclone fences.

***Marsdenia australis***      Bush Bananas      ***Kurgula***

Marsdenia australis is a very versatile plant. The leaves, flowers and the fruit can be eaten from the vine. It has been called the “pantry of the desert”. The aboriginal name **Kurgula** is where Kalgoorlie has got its name. *Kurgula* is a fast growing vine that produces avocado shaped fruits that taste like “crunchy snowpeas” and zucchini when small. The fruit gets woody and fibrous with age. The fruit is high in thiamine. The plant also produces a yam (tuber) which is also edible. Digging this up will kill the plant and was only done by Aboriginal people in extreme conditions.

#### Four: Bush Tucker Drinks

The Mungite season was a substantial event in the Noongar diet. The flowers of many plants were sucked for their sweet nectar. Flowers were also soaked in water to create a sweet drink. This sugar drink is intensely sweet. The sweetened water was also allowed to ferment to produce an alcoholic drink called Jep. Acacia gum is also mixed with water for a drink.

Leaves from different plants were also used to flavour water. Settlers were partial to the Melaleucas (Tea Trees) as well as Kennedia prostrata leaves to flavour their tea. The Noongar people crushed the leaves of the Melaleucas for medicinal purposes. The leaves are also used in smoking ceremonies.

<b><i>Banksia attenuata</i></b>	Slender Banksia	<b><i>Piara</i></b>
<b><i>Banksia menziesii</i></b>	Firewood Banksia	<b><i>Mangite</i></b>
<b><i>Banksia grandis</i></b>	Bull Banksia	<b><i>Poolgarla</i></b>
<b><i>Banksia sessilis</i></b>	Parrot Bush	<b><i>Pulgart</i></b>
<b><i>Callistemon phoeniceus</i></b>	Callistemon	<b><i>Birdak</i></b>
<b><i>Calothamnus quadrifidus</i></b>	One-sided Bottlebrush	<b><i>Kwowdjard</i></b>
<b><i>Calothamnus sanguineus</i></b>	One-sided Bottlebrush	<b><i>Kwowdjard</i></b>
<b><i>Corymbia calophylla</i></b>	Marri	<b><i>Marri</i></b>
<b><i>Kennedia prostrata (leaf)</i></b>	Running Postman	<b><i>Pulboorn</i></b>
<b><i>Melaleuca huegelii</i></b>	Chenille Honey Myrtle	
<b><i>Melaleuca raphiophylla</i></b>	Swamp Paperbark	<b><i>Yowarl</i></b>

#### Five: Bush Tucker Seeds

The seeds of the acacias were gathered from the plants and pounded to create flour that could then be made into damper or cakes. Many species were used in this way. Three common Perth species are listed.

<b><i>Acacia cyclops</i></b>	Red eyed Wattle	<b><i>Wilyawa</i></b>
<b><i>Acacia microbotrya</i></b>	Manna Wattle	<b><i>Kwonnat</i></b>
<b><i>Acacia saligna</i></b>	Golden wreath Wattle	<b><i>Coojong</i></b>