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THE FRUITS

FIGS (*Ficus spp*)

Family: MORACEAE

A large genus of about 600 species all from tropical to sub tropical regions, and often found in rainforest conditions, although many extend into arid areas. The fruits are pollinated by tiny wasps and many of the figs produce fruit year round to support these wasps. Even the common fig, *Ficus carica* tries to hold onto some fruit when it goes into dormancy in the temperate winters. A sprinkling of other *Ficus spp* among the more flavourful *Ficus carica* should ensure good populations of these wasps. The seed from these species are readily transported in nature by fruit bats and birds, which feed on the fruit. The fruits are generally good poultry feed. Far from being good companions to other trees, some species in the genus (including curtain fig, Moreton Bay fig and strangler fig) can start growing in the canopy of a host tree and then commence sending down aerial roots, ultimately engulfing the entire tree. The *Ficus spp* are generally considered good fire retardant trees. The milky latex that exudes from the broken leaf, stem or unripe fruit is used to treat infections such as ringworm and warts.

It has been reported that the Perth zoo grows various *Ficus spp* as stock fodder, especially to provide roughage for large herbivores such as elephants and rhinos.

Ficus carica (fig)

The fig is one of the most ancient plants in civilisation, and exists in as many as 700 varieties of the species. It is a deciduous tree and can grow to a height of 5 - 10 m, with a spread of up to 25 m, although most cultivars tend to be smaller. It grows best in warm temperate and sub-tropical regions and is frost tolerant to - 10°C. Very young trees may be injured by early or late frosts, so should be protected. Figs can live for 100 years and begin to bear fruit at 2 - 3 years.

Fig trees do well in a wide range of soils, although they dislike alkaline or salty soils. The soil should not be too rich in nitrogen and periodic applications of lime are beneficial. They are tolerant of drought, but produce better quality fruit when water is plentiful. They often produce a better crop of fruit if the roots are restricted, and for that reason it is a good tree for container growing in small gardens.

The fruits are produced singly or in pairs in the leaf axils, and vary considerably in shape and skin colour between varieties. The wild fig depends for pollination on a tiny wasp, but some cultivated varieties or hybrids require no pollination and produce only female flowers. In some climates, figs produce two crops, one in the early summer and one in late summer to early autumn. The first crop tends to produce larger fruits, the second crop smaller but more numerous fruits.

Little pruning is required, unless the tree is to be kept as a dwarf. Pruning consists mainly of cutting out dead, deformed or weak branches. The tips of young shoots can be pinched out to ensure that they make good, strong growth, as the fruit only comes to maturity on new or recently ripened wood. Figs can also be trained to grow up against walls or along fences.

Propagation is by layering or cuttings. Layers should root in a season and should be detached from the parent tree when the pot into which they have been led is filled with roots. Cuttings should be selected from short-jointed shoots of the previous years growth, and taken in spring. The 15 - 25 cm cuttings do best in sandy soil in the warmth.

Figs can be eaten fresh, frozen or dried, the sugar content rising from 12% to 50% on drying. The best way to dry figs is to let them dry partially on the tree and drop naturally to the ground. They can then be dried further on trays.

Nutritional composition of **fresh** fig per 100 grams of edible portion is: Water - 77.5%, Energy - 80 calories, Carbohydrate - 20.3 g, Fat - 0.3 g, Protein - 1.2 g, Ash - 0.7g, Calcium - 35 mg, Potassium - 194 mg, Sodium - 2 mg, Magnesium - 20 mg, Iron - 0.6 mg, Phosphorous - 22 mg, Iodine - 0.004 mg, Bromine - 0.18 mgs, Vitamin A - 80 I.U., Thiamin - 0.06 mg, Riboflavin - 0.05 mg, Niacin - 0.4 mg, Ascorbic acid - 2 mgs and the digestion time is 2.25 hours.



Permaculture Plants: A Selection

Nutritional composition of **dried fig** per 100 grams of edible portion is: Water - 23%, Energy - 274 calories, Carbohydrate - 69.1 g (about 50g is dextrose), Fat - 1.3 g, Protein - 4.3 g, Ash - 2.3g, Calcium - 126 mg, Potassium - 640 mg, Sodium - 34 mg, Magnesium - 71 mg, Iron - 3.0 mg, Phosphorous - 77 mg, Chlorine - 100 mg, Sulphur - 270 mg, silicon 240 mg, Vitamin A - 80 I.U., Thiamin - 0.1 mg, Riboflavin - 0.1 mg, Niacin - 0.7 mg, Ascorbic acid - 2 mgs and the digestion time is 2.5 hours.

Figs are used medicinally for their mild laxative effect. Often they are mixed with senna, rhubarb, and other stronger laxatives. Demulcent decoctions are prepared from figs and used in the treatment of catarrhal infections of the nose and throat. Figs can be roasted and split into two and the soft pulpy interior provides a poultice for dental abscesses, gum boils, circumscribed tumours and boils. The milky juice of the fig is applied to warts. This causes them to dry and fall off.

The wood is porous and of little use.

Cultivars

Brown Turkey	Medium sized fruit with mahogany brown skin tinged purple, and has few seeds. It has a rich flavour and is best eaten fresh. Not good for canning or drying. The tree is cold hardy.
Celeste	Violet coloured, with light coloured flesh, which is firm, juicy and sweet.
Col di Signora Bianca	Thick yellowish white skin with dark red, syrupy flesh.
Conadria	A vigorous tree, adapted to warmer climates. Medium sized, firm fruit with greenish yellow skin, blushed purple. A very sweet fig and the best variety for drying.
Desert King	Widely adapted, but does best in cooler climates. Bears a large fruit with a dark green skin, and of excellent quality. Often produces a second crop in warmer areas.
Genoa (White Genoa)	Best adapted to cooler areas and one of the hardiest of all varieties. Medium sized fruit with whitish skin. Good quality and flavour, excellent for fresh eating.
Kadota	A vigorous tree which does best in hot climates. Bears a medium to large fruit with yellowish green, tough skin. The flavour is rich and sweet and is a popular variety for commercial canning.
Mission (Black Mission)	A dependable variety with an excellent flavour. Has a large fruit with purplish black skin, which can be eaten fresh dried or canned.
Osborn Prolific	Prefers cooler areas. A medium sized, purplish brown fruit with a strong flavour.
Texas Everbearing	Good for areas with a short growing season. Medium to large, good quality fruit with a purplish skin.

***Ficus macrophylla* (Moreton Bay fig, figwood, black fig)**

A tall (to 50 m), evergreen forest tree of the tropical and sub-tropical rainforests of eastern Australia and also New Guinea. Given the space, it is a spreading tree often twice as wide as it is tall, with a wide buttressed trunk.

It prefers a deep, moist, fertile, alluvial soil in rainfalls between 1000 - 1700 mm. It has been planted and grows very well in coastal sands in Western Australia almost right to the sea in rainfalls around 700 mm. Moreton Bay figs were planted extensively around Perth as park trees and also as street trees but have fallen into disfavour for the latter because their root system destroys paths, roads, drains, fences and buildings.

The fruit is very variable but in some individuals, can be outstanding in size and flavour and quite reminiscent of *Ficus carica*. The Australian Aborigines made a string from the bark fibres which they used to manufacture dilly bags and fishing nets. The timber is open grained, easily worked and dresses with a mild sheen reminiscent of cedar.

MULBERRIES (*Morus spp*)

Family: MORACEAE

Mulberries form small to medium sized, long lived (300 years), deciduous trees. These easily propagated and transplanted trees are both hardy and drought resistant. They are also frost tolerant and well suited to cool areas. They are tolerant of shade and are suited to most soils and sites.

They are heavy (19 - 24 t/ha), regular, bearers of fruit. The fruit is delicious eaten raw and can be dried and powdered to produce a flour suitable for cooking. The fruit is used as a self harvest pig food supporting 2 - 3 pigs per tree at 86 trees per ha, for the fruiting season (60 days for Hicks variety which has the longest fruiting season of all). It is also an excellent self forage plant for poultry.

The tree coppices readily and the timber is good for tool handles and fence posts. The leaves are nutritious and can be fed to livestock including silkworm.

They are considered a good companion plant for grapes, for which they also form a trellis.

***Morus alba* (white mulberry)**

This tree is named after its white fruit. It is native to China where the leaves were traditionally fed to silkworms. It is a fast growing (to 25 m) shade tree and tolerates a wide range of conditions, although it prefers deep soil, good drainage and full sun.

The leaves are very palatable to livestock and are nutritious (crude protein - 15.1%, crude fat - 5.7%, crude fibre - 13.7%, nitrogen free extract - 50.3%, calcium - 1.95%, phosphorous - 0.4%). If properly managed by annual pruning, it can be an important source of fodder and on well drained soils is one of the best trees for cultivation.

The dried fruit is used for human food in Afghanistan where it is ground and mixed with ground almonds as a staple (analysis of dried mulberry - : total solids - 94.81%, ash - 2.75%, protein - 2.59%, sucrose - 1.2%, invert sugar - 70.01%, crude fibre - 2.65%, starch absent).

The wood, especially the sapwood, has been used commercially in the manufacture of sporting goods. The wood is also used for house building, furniture, tool handles (can be pruned to shape when young), turnery, bent parts of carriages and carts, spokes, shafts, etc. The bark is used in China and Europe for making paper and the bark yields a fibre suitable for use in the textile industry.

***Morus nigra* (black mulberry)**

Also known as the English mulberry or Persian mulberry (it is native to Persia), this species is a small rounded tree (seldom more than 12 m), with a broad rounded crown. The timber is prized for turnery and carving.

***Morus rubra* (red mulberry)**

Native to eastern and central United States. Ripe fruits are eaten fresh or made into preserves, jellies and pies. Dried fruit is mixed with almond meal to make a confectionery. The young shoots and unfolded leaves are eaten raw or boiled.

**PERSIMMON (*Diospyros kaki*)**

Family: EBENACEAE

Other common names are Chinese persimmon and kakee. A deciduous, round-headed tree growing to a height of 5 m. It has strikingly coloured autumn foliage, making it an attractive ornamental tree as well as a fruit producer. Persimmons prefer a medium loam soil, but will grow well in most ordinary soils as long as they are kept moist. It does not thrive in dry or acid soils, but will withstand a certain amount of waterlogging. The mature plant is frost hardy to -10°C.

The fruit is orange in colour, slightly larger than a tomato, and has to be fully ripe before being eaten. The unripe fruit is very astringent and contains tannic acid. It can be eaten either fresh or dried, or can be made into jams or jellies. There are different cultivars available, some being



astriugent varieties, others being non - astriugent. persimmons begin to bear fruit when about 3 years old (grafted trees or trees grown from cuttings).

