

Fig - *Ficus carica* L.

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Taxonomy, cultivars

The cultivated fig, *Ficus carica* L., is a member of the Moraceae (mulberry family). Other important fruit-bearing species include the mulberries (*Morus spp.*), Breadfruit (*Artocarpus altilis* Fosb.), Jackfruit (*Artocarpus heterophyllus* Lam.), and several tropical *Ficus* species produce edible fruit for local consumption and wildlife. Other *Ficus* species of importance - *F. elastica* ("rubber plant") and *F. benjamina* (Ficus tree or weeping fig); important indoor foliage plants; the latter is used as a hedge or landscape tree in tropical areas.

4 types of cultivars:

1. Caprifig. "Male", but actually bears both staminate and pistillate flowers. Inedible; used to pollinate Smyrna and San Pedro types; grown outside the orchard, picked prior to wasp emergence, and hung in baskets in trees.
2. Smyrna fig. Requires pollination for fruit set, but wasp does not oviposit in fruit, styles too long. One main crop/yr, the "second" crop; first crop is very light, only a few fruits/tree. 'Calimyrna' is the only Smyrna cultivar grown in California, and is the most widely produced cultivar.
3. Common fig. Parthenocarpic; first crop borne on 1-yr-old wood, second crop borne on current season's growth. Most commercial cultivars are found in this group: 'Mission', 'Kadota' (syn. 'Dottato'), 'Magnolia' (syn. 'Brunswick'), 'Brown Turkey', 'Celeste'
4. San Pedro fig. Combined characteristics of Smyrna and Common figs. First crop - parthenocarpic, called "brebas"; second crop - requires pollination by wasp. Rarely cultivated commercially.

Origin, history of cultivation

The fig is native to western Asia, and has been cultivated for thousands of years in Mediterranean countries of Europe and North Africa. Figs were introduced to England and Mexico in the 1500's, then the Eastern US in 1669, and to California in 1881. Common figs were cultivated successfully throughout the Gulf states and California, but the Smyrna fig did not fruit until it was realized that a tiny wasp was needed for pollination, which was not native to California. The wasp (*Blastophaga psenes*) was introduced in 1900.

Folklore, medicinal properties, non-food usage

Fig latex may cause photodermatitis - a sunburn rash develops when contacted portion of skin is exposed to UV light. Photosensitizing compounds related to furocoumarin may be the active principals.

B. Figs have gotten a bad wrap in the bible. In the book of John, a hungry Jesus smited the fig he came upon in the desert for having no fruit by placing a curse on it; the disciples were "sore amazed". I find this unusual since figs can easily produce 2 crops/year, and it is less likely to come upon a fig without ripe fruit than most other species that produce only 1 crop/year. Perhaps, knowing this, Jesus was all the more disgusted with the fig tree. In Genesis, a fig leaf was used to cover private areas after Eve ate the apple, causing them to become aware of their nudity. Figs are depicted in many paintings of biblical scenes.

Production

World - No figures available.

United States - all commercial production in California; San Joaquin valley. 45,454 MT, value = \$18.4 million. 18,357 bearing acres in 1995. Grower prices are 0.50-0.60 \$/lb dried, <0.25 \$/lb for fresh or canned.

Foreign trade (dried basis) 1993:

Imports - 11,000 MT (highest ever)

Exports - 3,035 MT (record year!, >300% of late 1980's values)

Botanical Description

Plant: Warm temperate or sub-tropical small trees or shrubs to 30 ft; trained to stout, wide-headed trees in California. Plants thrive in hot, arid climates - a true Mediterranean fruit crop; can grow in Gulf states, Texas, but commercially in California only. Several tropical countries grow figs, like Central America, Bermuda, the Caribbean islands, Venezuela, Chile and Argentina.



Flowers: Borne in inverted inflorescences in axils of leaves on 1-yr wood (first crop) and current season's wood as well (second crop). In cultivated "Common" figs, all flowers are female, packed along the inside of the inflorescence, consisting basically of an ovary and a single style.

Pollination: The fig wasp provides pollination of Smyrna figs, but common figs are parthenocarpic and need no pollination.

Fruit: a "syconium" (multiple of drupelets) - an inverted inflorescence with swollen receptacle. The true fruits are small drupelets which line the inner surface of the syconium. The opening at the apex is an "ostiole", through which fig wasp crawls to enter, lay eggs, and pollinate. Milky sap or latex often exudes from cuts in stems or when fruit are harvested.

General Culture

Figs are easily propagated by hardwood cuttings. Other methods include suckers, grafting, budding, and air layering, but since rooted cuttings are easiest to propagate, and come true-to-type from roots in the event of freezing, these other methods are unnecessary.

Trees are spaced 10-15 ft apart, trained to a low, sprawling "head" in California. Orchards come into full production in about 5 yr, bearing some fruit in the 2nd year often.

Orchards remain productive for 15-20 yr, when fruiting declines, although trees may be long-lived.

Trees are very sensitive to frost when actively growing, but can withstand 10°F when dormant.

In humid areas, figs are prone to diseases such as rust (leaves) and souring of fruits (yeasts spread by insects, fermenting inside fruit). Rain at harvest time may cause skin cracking.



Contribution to diet, food uses

Figs can be eaten whole and raw, especially in humid climates, but are often peeled, eating the flesh and discarding the skin.

Processed figs are made into pies, pudding, cakes, other bakery products, jams, jellies and preserves. Fig paste is a mixture of figs, wheat and corn flour, whey, syrup, oils, and other ingredients, used in "Fig Newtons".

Dietary value, per 100 gram edible portion:

Dried Figs:

Water (%) 23

Calories	274
Protein (%)	4.3
Fat (%)	1.3
Carbohydrates (%)	69
Crude Fiber (%)	5.8 (high for fruit)

% of US RDA*

Vitamin A	1.6
Thiamin, B1	7.1
Riboflavin, B2	6.2
Niacin	3.9
Vitamic C	0
Calcium	15.8
Phosphorus	9.6
Iron	30
Sodium	0.8
Potassium	14

* Percent of recommended daily allowance set by FDA, assuming a 154 lb male adult, 2700 calories per day.

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