

## Ficus carica

L.

Moraceae

### LOCAL NAMES

Chinese (wu hua guo); English (fig, fig tree, common fig); French (figuier commun); German (feigenbaum, echte feige); Italian (fico); Portuguese (figueira); Spanish (higuera común, higo)

### BOTANIC DESCRIPTION

*Ficus carica* is a broadly spreading small tree or shrub to 9 m and a width greater than or equal to the height.

Leaves alternate, simple, deciduous; 63.5 cm in diameter, but sometimes larger; palmately lobed with (usually) 5 finger-like lobes, dark green above and lighter green below, petiole exudes a milky sap, somewhat scabrous, margins entire and wavy.

Flower either male and female or all female, not showy, green, fleshy and rounded, the actual flowers minute, located on the inner surface of a hollow receptacle in axils of leaves on 1-yr wood (first crop) and current season's wood as well (second crop) consisting basically of an ovary and a single style.

Fruit a synconium, edible, purple-brown, pear- or onion-shaped, and somewhat leathery when mature, pubescent, succulent, 2.5 -5cm, technically a multiple of tiny drupes; produced in two distinct crops - an early crop that arises from old wood and a late summer crop that arises from new wood; delicious.

Twig stout, new growth pubescent, leaf scars nearly round, terminal bud conical, wrapped in a single cap-like scale that leaves a bud scale scar that nearly encircles the twig. Resting buds apparently form after each leaf is formed.

Bark smooth and silvery gray, somewhat warty.

### BIOLOGY

In their native habitat, figs are pollinated by a tiny gall wasp that enters the flower cluster through a small opening in the apex. Each flower then produces a small fruit containing seeds. Most cultivars of fig trees produce two crops, one in spring on previous season's growth, and another (main crop) in summer or fall on new wood.

*F. carica* comes into full production in about 5 years, bearing some fruit in the 2nd year and remains productive for 15-20 years, when fruiting declines, although trees may be long-lived.



Fruit at Kahului Maui, Hawaii (Forest & Kim Starr)



Leaves at Kahului, Maui, Hawaii (Forest & Kim Starr)



Fruit at Kahului, Maui, Hawaii (Forest & Kim Starr)

**ECOLOGY**

*Ficus carica* naturally grows in warm temperate or sub-tropical climates. It is mostly found growing amongst rocks, in woods and scrub on hot dry soils. It can also grow on river banks and creek lines and settlement sites in the warm lowlands. It prefers part sun to full sun.

**BIOPHYSICAL LIMITS**

Altitude: 0 - 2950 m,

Temperature: 13 - 25°C.

Figs are sensitive to frost when actively growing, but can withstand up to -12°C when dormant and re-sprouts from the roots and produce a crop the following summer.

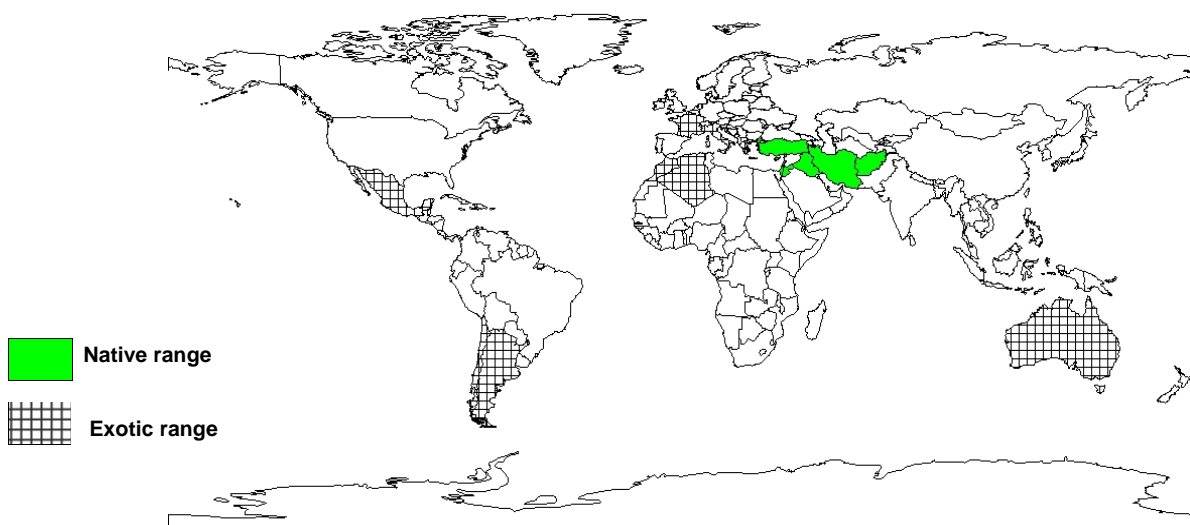
Rainfall: 700 - 1250 mm, but can survive in areas with an average rainfall of as low as 300 mm.

Soil type: Well-drained, clay, loamy, sandy, alkaline with pH values 6-7.8. It is prone to root suffocation in shallow compact soils.

**DOCUMENTED SPECIES DISTRIBUTION**

Native: Afghanistan, Cyprus, Iran, Iraq, Israel, Jordan, Lebanon, Syrian Arab Republic, Turkey

Exotic: Algeria, Argentina, Australia, Bermuda, Cape Verde, Chile, France, Greece, Italy, Mexico, Morocco, New Zealand, Portugal, Spain, Tunisia, US, Venezuela



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

**PRODUCTS**

**Food:** Fruits can be eaten raw, dried, canned, or in other preserved forms. The processed forms include pies, pudding, cakes, other bakery products, jams and jellies. The fruit has high sugar content and fair source of vitamins A, B, and B2. The fruit can be fermented to make alcoholic beverages.

**Medicine:** Figs are used medicinally for their mild laxative action, and are often used in the preparation of laxative confections and syrups. It is believed that the laxative property resides in the saccharine juice of the fresh fruit, and in the indigestible seeds & skin of the dried fruit. Demulcent decoctions can be prepared from Figs in the treatment of catarrhal infections of the throat and nasal areas.

**Essential oils and perfumes:** The seed oils can be used as a lubricant and the leaves have been used in making perfume providing a woody/musky scent.

**Latex or rubber:** The latex from the tree, after being dried & powdered, has been used in tenderizing meats and also making cheeses.

**SERVICES**

**Ornamental:** Figs can be artfully pruned to create a living sculpture around homes and conservatories and can be used to decorate deck or patio. It makes an especially attractive specimen in the landscape where it's graceful, spreading shape and smooth, twisting branches command attention in all seasons.

**TREE MANAGEMENT**

Fig trees should be spaced 3- 4.5 m apart. Heavy mulching with organic material conserve moisture, improve soil structure and reduce root knot nematode levels, but too much nitrogen produces much growth but no fruit. It responds well to pruning especially in the dormant season for size control and to increase the main crop. Young trees need regular watering until fully established, when they need occasional deep watering in summer. Figs must be allowed to ripen fully before they are picked. Fresh figs don't keep long, but dried ones keep for months.

**GERMPLASM MANAGEMENT**

Dormant hardwood cuttings should be taken during winter, dusted with rooting hormone powder and planted in sterile potting soil.

**PESTS AND DISEASES**

In humid areas, figs are prone to diseases such as rust (leaves) and souring of fruits.

Gophers feed on fig tree roots leading to death of large plants. Birds damage the fruit and nematodes (especially *Meloidogyne* spp.), particularly in sandy soils, attack roots, forming galls and stunting the trees. Dried fruit beetles enter ripening fruit through the eye and cause damage by introducing fungi and rots. Euryphid mites are carriers of mosaic virus from infected to clean trees. Other diseases include fig canker, *Rhizopus* smut, and *Aspergillus* rot.

Rain at harvest time may cause fruit skin cracking.

**FURTHER READING**

- Bailey LH and Bailey EZ. 1976. Hortus. 3rd ed. Macmillan General Reference, NY.
- California Rare Fruit Growers, Inc. 1996. Fig Fruit Facts. The Fullerton Arboretum, CSUF, Fullerton, CA.
- Dehgan B. 1998. Landscape Plants for Subtropical Climates. University Press of Florida, Gainesville, FL.
- Duke JA et al. 2002. CRC Handbook of medicinal herbs (2nd ed.). CRC Press, Boca Raton, FL, London, & NY.
- Hanelt P (ed.). 2001. Mansfeld's encyclopedia of agricultural and horticultural crops. Volumes 1-6 (1st Eng. Ed.), Springer-Verlag Berlin.
- Howard R. 1974-1989. Flora of the lesser Antilles. Arnold Arboretum of Harvard University, Jamaica Plain, Massachusetts.
- Huxley A. 1992. The New RHS Dictionary of Gardening. 1992. MacMillan Press. London.
- Markle GM. et al., eds. 1998. Food and feed crops of the United States (2nd ed.).
- Meyer FG. et al. 1994. A catalog of cultivated woody plants of the southeastern United States. USDA. National Arboretum Contribution, Washington DC.
- Nadel H, Frank JH, and Knight RJ. 1992. Escapees and accomplices: The naturalization of exotic Ficus and their associated faunas in Florida. Florida Entomologist. 75(1): 29-38.
- Nancy RM (Ed.). 1997. Flora of North America. 2000. Flora of North America Association, FNA Volume 3. Oxford University Press, New York.
- Neal MC. 1965. In Gardens of Hawai'i. Bernice P. Bishop Museum Special Publication 40, Bishop Museum Press, Honolulu, HI.
- Oppenheimer HL & Bartlett RT. 2000. New Plant Records From Maui, O'ahu, and Hawai'i Islands. Bishop Mus. Occas. Pap.
- Rehm S. 1994. Multilingual dictionary of agronomic plants. Kluwer Academic Publishers.
- Tous J & Ferguson L. 1996. Mediterranean fruits. In: J. Janick (ed.), Progress in New Crops. ASHS Press, Arlington, VA.
- Uphof JC Th. 1968. Dictionary of Economic Plants. Stechert-Hafner Service Agency Inc., New York, New York.
- Wagner WL, Herbst DR, and Sohmer SH. 1999. Manual of the Flowering Plants of Hawai'i. 2 vols. Bishop Museum Special Publication 83, University of Hawai'i and Bishop Museum Press, Honolulu, HI.
- Weber E. 2003. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK.

**SUGGESTED CITATION**

Orwa C, Mutua A, Kindt R, Jamnadass R, Simons A. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (<http://www.worldagroforestry.org/af/treedb/>)