

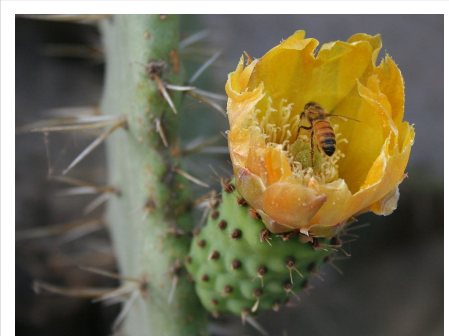
Opuntia ficus-indica

<i>Opuntia ficus-indica</i>	
Illustration by Eaton in <i>The Cactaceae</i>	
Scientific classification	
Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Core eudicots
Order:	Caryophyllales
Family:	Cactaceae
Genus:	<i>Opuntia</i>
Subgenus:	<i>Opuntia</i>
Species:	<i>O. ficus-indica</i>
Binomial name	
<i>Opuntia ficus-indica</i> (L.) Mill.	
Synonyms	
<ul style="list-style-type: none"> • <i>Cactus decumanus</i> Willd. • <i>Cactus ficus-indica</i> L. • <i>Opuntia amyclaea</i> Ten. • <i>Opuntia cordobensis</i> Speg. • <i>Opuntia decumana</i> (Willd.) Haw. • <i>Opuntia gymnocarpa</i> F. A. C. Weber • <i>Opuntia hispanica</i> Griffiths • <i>Opuntia maxima</i> Mill. • <i>Opuntia megacantha</i> Salm-Dyck • <i>Opuntia paraguayensis</i> K. Schum. 	

Opuntia ficus-indica is a species of cactus that has long been a domesticated crop plant important in agricultural economies throughout arid and semiarid parts of the world. It is thought to possibly be native to Mexico. Some of the common English names for the plant and its fruit are **Indian fig opuntia**, **barbary fig**, **cactus pear** and **prickly pear**, although this last name has also been applied to other less common *Opuntia* species.

Growth

Fig opuntia is grown primarily as a fruit crop, but also for the vegetable nopales and other uses. Most culinary references to the "prickly pear" are referring to this species. The name "tuna" is also used for the fruit of this cactus, and for *Opuntia* in general; according to Alexander von Humboldt, it was a word of Hispaniola native origin taken into the Spanish language around 1500 CE.^[1]



Opuntia ficus-indica flower

Cacti are good crops for dry areas because they efficiently convert water into biomass. *O. ficus-indica*, as the most widespread of the long-domesticated cactuses, is as economically important as corn and tequila agave in Mexico today. Because *Opuntia* species hybridize easily (much like oaks), the wild origin of *O. ficus-indica* is likely to have been in Mexico due to the fact that its close genetic relatives are found in central Mexico.



Opuntia ficus-indica (Indian fig) in
Secunderabad, India.

Uses

The most commercially valuable use for *Opuntia ficus-indica* today is for the large, sweet fruits, called tunas. Areas with significant tuna-growing cultivation include Mexico, Malta, Spain, Sicily and the coasts of Southern Italy, Greece, Libya, Tunisia, Morocco, Algeria, Lebanon, Syria, Egypt, Saudi Arabia, Yemen, Israel, Chile, Brazil, Turkey, as well as in Eritrea and Ethiopia where the fruit is called **beles** (Ge'ez: ቤለስ). In Sicily, where the prickly pear fruit is known as *ficudinnia* (the Italian name being *fico d'India*, meaning "indian fig"), the cactus grows wild and cultivated to heights of 12–16 feet (4–5 meters).

The plants flower in three distinct colors: white, yellow and red. The flowers first appear in early May through the early summer in the Northern Hemisphere, and the fruit ripen from August through October. The fruit are typically eaten, minus the thick outer skin, after chilling in a refrigerator for a few hours. They have a taste similar to a juicy, extra sweet watermelon. The bright red/purple or white/yellowish flesh contains many tiny hard seeds that are usually swallowed, but should be avoided by those who have problems digesting seeds.

Jams and jellies are produced from the fruit, which resemble strawberries and figs in color and flavor.

Mexicans have used *Opuntia* for thousands of years to make an alcoholic drink called colonche.

The fruit contains vitamin C and was one of the early cures for scurvy.

In the center of Sicily, in the Province of Enna, in a small village named Gagliano Castelferrato, a prickly pear-flavored liqueur is produced called "Ficodi", flavored somewhat like a medicinal/aperitif.

In the early 1900s in the United States, the prickly pear fruit was imported from Mexico and Mediterranean countries to satisfy the growing population of immigrants arriving from Italy and Greece. The fruit lost its popularity during the mid-1950s, but has increased in popularity since the late 1990s, due to the influx of Mexican immigrants.

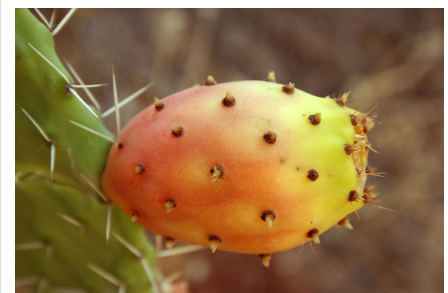
Recently, the cattle industry of the Southwest United States has begun to cultivate *O. ficus-indica* as a fresh source of feed for cattle. The cactus is grown both as a feed source and a boundary fence. Cattle avoid the sharp spines of the cactus and do not stray from an area enclosed by it. Native prickly pear growth has been used for over a century to feed them; the spines can be burned off to reduce mouth injury. The cactus pads, on which the cattle feed, are low in dry matter and crude protein, but are useful as a supplement in drought conditions. In addition to the food value, the moisture content virtually eliminates watering the cattle and the human effort in achieving that chore.



The coat of arms of Mexico depicts a Mexican golden eagle, perched upon an *Opuntia* cactus, devouring a rattlesnake.



The fruits of *Opuntia ficus-indica* as sold in Morocco.



Tuna

Mexican and other southwestern residents eat the young cactus pads (nopales, plural) (nopal, singular), usually picked before the spines harden. They are sliced into strips, skinned or unskinned, and fried with eggs and jalapeños, served as a breakfast treat. They have a texture and flavor like string beans.

In Malta, a liqueur called Bajtra (the Maltese name for prickly pear) is made from this fruit, which can be found growing wild in most every field. On the island of Saint Helena, the prickly pear also gives its name to locally distilled liqueur, Tungi Spirit.

Other uses include as an ingredient in adobe (to bind and waterproof).

Opuntia ficus-indica (as well as other species in *Opuntia* and *Nopalea*) is cultivated in nopalries to serve as a host plant for cochineal insects, which produce desirable red and purple dyes. This practice dates from pre-Columbian times.

The plant is considered a pest species in parts of the Mediterranean Basin due to its ability to spread rapidly beyond the zones it was originally cultivated. In Hebrew, the plant is referred to as "sabres."^[2] Kishkashta, a main character on a 1970-80s Israeli children's show, "Ma Pit'om", was a large, talking felt puppet of the *Opuntia* cactus.

The high levels of Selenium in *Opuntia* are comparable to those found in Brassicaceae

The fruit of *Opuntia ficus-indica* can cause constipation if consumed with the seeds, without the seeds it is laxative.

A University of South Florida engineering professor and a team of researchers have found that mucilage from the prickly pear cactus works as a natural, non-toxic dispersant for oil spills.



Opuntia ficus-indica (Indian fig) flowering in Secunderabad

Biogeography

Recent DNA analysis indicated *O. ficus-indica* was domesticated from *Opuntia* species native to central Mexico. The Codex Mendoza, and other early sources, show *Opuntia* cladodes, as well as cochineal dye (which needs cultivated *Opuntia*), in Aztec tribute rolls. The plant spread to many parts of the Americas in pre-Columbian times, and since Columbus, have spread to many parts of the world, especially the Mediterranean, where they have become naturalized (and in fact were believed to be native by many). This spread was facilitated by the carrying of nopales on ships to prevent scurvy.

Sources

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- Donkin, R. (1977). "Spanish Red: An Ethnogeographical Study of Cochineal and the *Opuntia* Cactus". *Transactions of the American Philosophical Society* **67**: 1–77. doi:10.2307/1006195 ^[3].
- Griffith, M. P. (2004). "The Origins of an Important Cactus Crop, *Opuntia ficus-indica* (Cactaceae): New Molecular Evidence" ^[4] (pdf). *American Journal of Botany* **91** (11): 1915–1921. doi:10.3732/ajb.91.11.1915 ^[5].
- Kiesling, R. (1999). "Origen, Domesticación y Distribución de *Opuntia ficus-indica* (Cactaceae)". *Journal of the Professional Association for Cactus Development* **3**: 50–60.

References

- [1] *Baron F. H. A. von Humboldt's personal narrative of travels to the equinoctial regions of America* tr. 1852 by Ross, Thomasina: "The following are Haytian words, in their real form, which have passed into the Castilian language since the end of the 15th century... Tuna". Quoted in OED 2nd ed.
- [2] This led to the popular use of the term "Sabra" to refer to an Israeli-born Jew, alluding to the fruit and the people alike being tenacious and thorny (rough and masculine) on the outside but sweet and soft (delicate and sensitive) on the inside.
- [3] <http://dx.doi.org/10.2307%2F1006195>
- [4] <http://www.amjbot.org/content/91/11/1915.full.pdf>
- [5] <http://dx.doi.org/10.3732%2Fajb.91.11.1915>

External links

- *Opuntia ficus-indica* (American Journal of Clinical Nutrition) (<http://www.ajcn.org/content/80/2/391.full>)
 - nopalea juice (<http://www.nopaleajuicereviewsnet.com>)
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