



## **Ficus carica L. (Moraceae): Traditional Uses and Biological Activities.**

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### ▪Abstract:-

The fig (*Ficus carica* L.), one of the first cultivated trees in the world, is grown in many parts of the world with moderate climates. Figs are eaten dry and fresh; however, as fresh figs are highly perishable they are largely consumed near production areas. Figs are nutritious fruits rich in fiber, potassium, calcium, and iron. Fresh figs are highly sensitive to physical damage, and susceptible to postharvest decay infections. Preharvest and postharvest conditions are very important to improve fruit quality and postharvest life. At this point, reducing postharvest losses and developing global fresh fig marketing is a big challenge for plant breeders, physiologists and postharvest technologists.

• **Keywords:** Fig, Cold Room, Storage and Post-storage. Biological activities; ethnomedicine; fig.

### ▪Introduction:-

*F. carica* L. is an important member of the genus *Ficus*. It is ordinarily deciduous and commonly referred to as “fig”. The common fig is a tree native to southwest Asia and the eastern Mediterranean, and it is one of the first plants that were cultivated by humans. The fig is an important harvest worldwide for its dry and fresh consumption. Its common edible part is the fruit which is fleshy, hollow, and receptacle. The dried fruits of *F. carica* have been reported as an important source of vitamins, minerals, carbohydrates, sugars, organic acids, and phenolic compounds. The fresh and dried figs also contain high amounts of fiber and polyphenols. Figs are an excellent source of phenolic compounds, such as proanthocyanidins, whereas red wine and tea, which are two good sources of phenolic compounds, contain phenols lower than those in fig. Its fruit, root, and leaves are used in traditional medicine to treat various ailments such as

gastrointestinal (colic, indigestion, loss of appetite, and diarrhea), respiratory (sore throats, coughs, and bronchial problems), and cardiovascular disorders and as anti-inflammatory and antispasmodic remedy.

## ▪Scientific Classification:-

Domain	Eukaryota
Kingdom	Plantae
Subkingdom	Viridaeplantae
Phylum	Tracheophyta
Subphylum	Euphyllophytina
Infraphylum	Radiatopses
Class	Magnoliopsida
Subclass	Dilleniidae
Superorder	Urticanae
Order	Urticales
Family	Moraceae
Genus	Ficus
Species	Carica

**Synonyms:** *F. caricoides* Roxb. *F. virgata* Wall. ex Roxb.

**Indian names:** Manmjedi (Andhra Pradesh); Khemri, Pheru (Dehradun); Pepri (Gujrat); Phegra. Fagura, Khasra, Daghla Anjir, Fagad, Fagar (Himachal Pradesh); Abjiri, Bedu, Khemri (Hindi); Pheru (Jaunsar); Bedu (Kumaun); Phegwara, Phagoru, Fagu, Anjir (Punjab)

**Other names:** English- Indian Fig (Wild Himalayan fig).Ayurvedic- Phalgu, Anjiri.Siddha- Manjmedi. Nepali- Bendu, Anjir, Timilo, Beru, Bedu.

## ▪Morphology:

☐ Plant - Deciduous Tree ☐ Height - 6 to 10 m (30 feet approx.) ☐ Leaves- Alternate, broad, ovate and membranous with size range 12.92 cm long and 14.16 cm broad. ☐ Flowers - Unisexual , monoecious (individual flowers are either male or female, but both sexes can be found on the same plant), greenish white and very small. ☐ Fruit - Syconoid, the average diameter is 2.5 cm, weight 6 gm, the colour varying from deep violet to black. ☐ Seeds - Numerous, round and very small. ☐ Soils - Prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in nutritionally poor soil. The plant prefers acid, neutral and basic (alkaline) soils. It cannot grow in the shade.



Fruits of fig.

▪**Distribution:**-*Ficus palmata* is a highly variable and common wild fig occurring in North West hills on hot, dry slopes in clay-loam soils in Uttarakhand, Punjab and Kashmir in India, Nepal, Pakistan, Afghanistan, Iran, Arabian Peninsula, Somalia, Sudan, Ethiopia and South Egypt.

## ▪Flowering and fruiting season:-

Flowering starts from March and continues up until the end of April. The fruiting season starts from the second fortnight of June and continues till the first half of July.



Fig plant

**Edible uses:**The whole fruit, along with the seeds, is edible. Fruit is raw and very tasty. It is sweet and juicy, having some astringency, which is due to the presence of white latex just beneath the epicarp. The astringency can be removed by keeping the fruits immersed in water for about 10 to 15 minutes before eating. The overall fruit quality is excellent. The unripe fruits and young growth are cooked and eaten as a vegetable. They are boiled, the water is removed by squeezing and they are then fried.

## ▪Traditional uses ( Benefits):-

### 10 Health Benefits of...

## Figs

1. Relieves Constipation
2. Lower Blood Pressure
3. Rich in Anti-Oxidants
4. Controls Diabetes
5. Prevents Cancer
6. Increases Vitality
7. Treats Anaemia
8. High in Calcium
9. Healthy Heart
10. Clears Toxins



**Medical uses:-**The fruit is demulcent, emollient, laxative and poultice. They are principally used as an item of diet in the treatment of constipation and diseases of the lungs and bladder. The sap is used in the treatment of warts. Ficus palmata plant is used in various disease e.g. gastrointestinal, hypoglycemic, antitumour, anti-ulcer, anti-diabetic, lipid lowering and antifungal activities. Traditionally stem latex is applied to extract spines deeply lodged in the flesh.

Antioxidant Activity. F. carica contains many phenolic. Antioxidant Activity. F.

## ▪Biological Activity:-

compounds that play many physiological roles in plants. Some of them are also favourable to human health, since they are able to act as an antioxidant by different ways: reducing agents, hydrogen donors, free radical scavengers, singlet oxygen quenchers, and so forth. Fig fruits of *F. carica* were studied with six commercial fig varieties with different colors (black, red, yellow, and green) for total polyphenols, total flavonoids, antioxidant capacity, and profile of anthocyanins. The antioxidant properties were determined by ferric reducing antioxidant method. Fruits contained the highest levels of polyphenols, flavonoids, and anthocyanins and exhibited the highest antioxidant capacity. Fig fruits of *F. carica* were analyzed for total flavonoids, antioxidant capacity, and profile of anthocyanins. Using RP-LC various concentrations of anthocyanins but similar profiles have been found in all varieties studied. Cyanidin was confirmed as the major aglycone in several studies. NMR data confirmed that cyanidin-3-O-rutinoside (C3R) was the main anthocyanin in all fruits. Color appearance of the fig extract correlated well with total polyphenols, flavonoids, anthocyanins, and antioxidant capacity. C3R contributed 92% of the total antioxidant capacity of the anthocyanin fraction, and fruits contained highest levels of polyphenols; flavonoids and anthocyanins exhibited the highest antioxidant capacity.

## Fig vs dates:-

	 <b>100g, 74 cal</b>	 <b>100g, 282 cal</b>
	% Daily Value	
<b>Sodium</b>	1 mg      0%	2 mg      0%
<b>Potassium</b>	232 mg      6%	656 mg      18%
<b>Total Carbohydrate</b>	19 g      6%	75 g      25%
Dietary fiber	2.9 g      11%	8 g      32%
Sugar	16 g	63 g
<b>Protein</b>	0.8 g      1%	2.4 g      4%
<b>Caffeine</b>	0 mg	0 mg
<b>Vitamin A</b>	142 IU      2%	10 IU      0%
<b>Vitamin C</b>	2 mg      3%	0.4 mg      0%
<b>Calcium</b>	35 mg      3%	39 mg      3%
<b>Iron</b>	0.4 mg      2%	1 mg      5%
<b>Vitamin B-6</b>	0.1 mg      5%	0.2 mg      10%
<b>Vitamin B-12</b>	0 µg      0%	0 µg      0%
<b>Magnesium</b>	17 mg      4%	43 mg      10%

## Types of fig:-

In addition to the caprifig, there are three other horticultural types of figs: Smyrna, White San Pedro, and Common. Smyrna-type figs develop only when fertile seeds are present, and these seeds account for the generally excellent quality and nutty flavour of the fruit. Figs of the White San Pedro type combine the characteristics of both the Smyrna and the Common type on one tree. First-crop figs develop without flower pollination, while second-crop figs in axils of leaves require it. Common figs such as the Dottato, Fraga, and Brown Turkey do not require pollination of flowers of either crop, the seeds in the mature fruit usually being hollow. The flowers of such figs were once regarded as incapable of fecundation and were therefore designated as mule flowers, but it has been proved that all common figs can produce fertile seeds if the flowers are pollinated.

Research Through Innovation



Fig fruit is in the mulberry family. There are some 800 types of figs, genus *Ficus*, but the most popular fig varieties that we grow for the delicious fruits are all varieties of *Ficus carica*, the common fig tree. Black Mission Figs are one of the most common fig varieties in the world. It is believed to have originated in Spain. Black Mission Figs are relatively small with solid pink flesh and a sticky and chewy texture studded with tiny seeds.



Plant of fig

A breba crop on this kind of fig tree produced figs in early spring.

Figs can produce two crops depending on your USDA zone. Figs often bear a first crop in spring on the previous year's growth called the breba crop. The main crop is born later in the summer or early fall on new growth. The breba crop is much smaller than the main crop and is sometimes destroyed by a late spring frost. Read more about breba crops.

Figs develop in a multitude of colors including green skinned fruit that ripens into dark purple skin or even brown skin with red flesh or sometimes pink flesh depending on the variety and type of fig tree.

▪ **Pharmacological uses:-** Historically, figs have been used to treat numerous ailments, including common digestive issues such as poor appetite, colic, indigestion, constipation, dysentery, inflamed or ulcerated intestines, and intestinal parasites. They also provide antispasmodic, antibacterial, anti-inflammatory, and natural laxative effects.



Differnt types of Fig.

▪ **Conclusion:-** This brief review finally concluded that the *Ficus palmata* has a wide therapeutic potentiality against various diseases or disorders. So, further exploration of such unexplored species in the field of therapeutics and medicine can contribute healthcare in one other way.

Phytochemical research carried out on *F. carica* has led to the isolation of few classes of plant metabolites. Most of the phytochemical works have been employed on leaves and fruits of *F. carica*, while there is little information on stem and root phenolic profiles. However the vast traditional uses and established pharmacological activities of *F. carica* point out that an enormous scope still exists for its phytochemical

exploration using bioassay-guided isolation. The result of future research in the above mentioned areas will afford a persuasive support for the future clinical uses of *F. carica* in contemporary remedy.

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