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STRATEGIC REVIEW ON FICUS CARICA SPECIES LEAVES

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ABSTRACT

Bioactive compounds of *Ficus Carica* have been reportedly used to treat diseases and ailments, however *Ficus Carica* for long has been used an ornamental plant. This review systematically addresses & summarizes the various phytoconstituents and pharmacological activities of *Ficus carica* leaf.

KEYWORDS: *Ficus carica*, Anti-Diabetic, Anti-Inflammatory.

INTRODUCTION

The fig is the edible fruit of *Ficus carica*, a species of small tree in the flowering plant family Moraceae, native to the Mediterranean region, together with western and southern Asia. It has been cultivated since ancient times and is now widely grown throughout the world, both for its fruit and as an ornamental plant. Ficus carica is the type species of the genus Ficus, containing over 800 tropical and subtropical plant species.[1] A fig plant is a small deciduous tree or large shrub growing up to 7–10 m (23–33 ft) tall, with smooth white bark. Its large leaves have three to five deep lobes. Its fruit (referred to as syconium, a type of multiple fruit) is tear-shaped, 3–5 cm (1–2 in) long, with a green skin that may ripen toward purple or brown, and sweet soft reddish flesh containing numerous crunchy seeds. The milky sap of the green parts is an irritant to human skin. In the Northern Hemisphere, fresh figs are in season from late summer to early autumn. They tolerate moderate seasonal frost and can be grown even in hot-summer continental climates.

Family:	Moraceae
Kingdom:	Plantae
Species	*F. carica*
Order:	Rosales

Its fragrant leaves are 12–25 cm (41⁄2–10 in) long and 10–18 cm (4–7 in) wide, and are deeply lobed (three or five lobes).

Table 1: Uses of *F. Carica* Leaf and Fruit.[2]

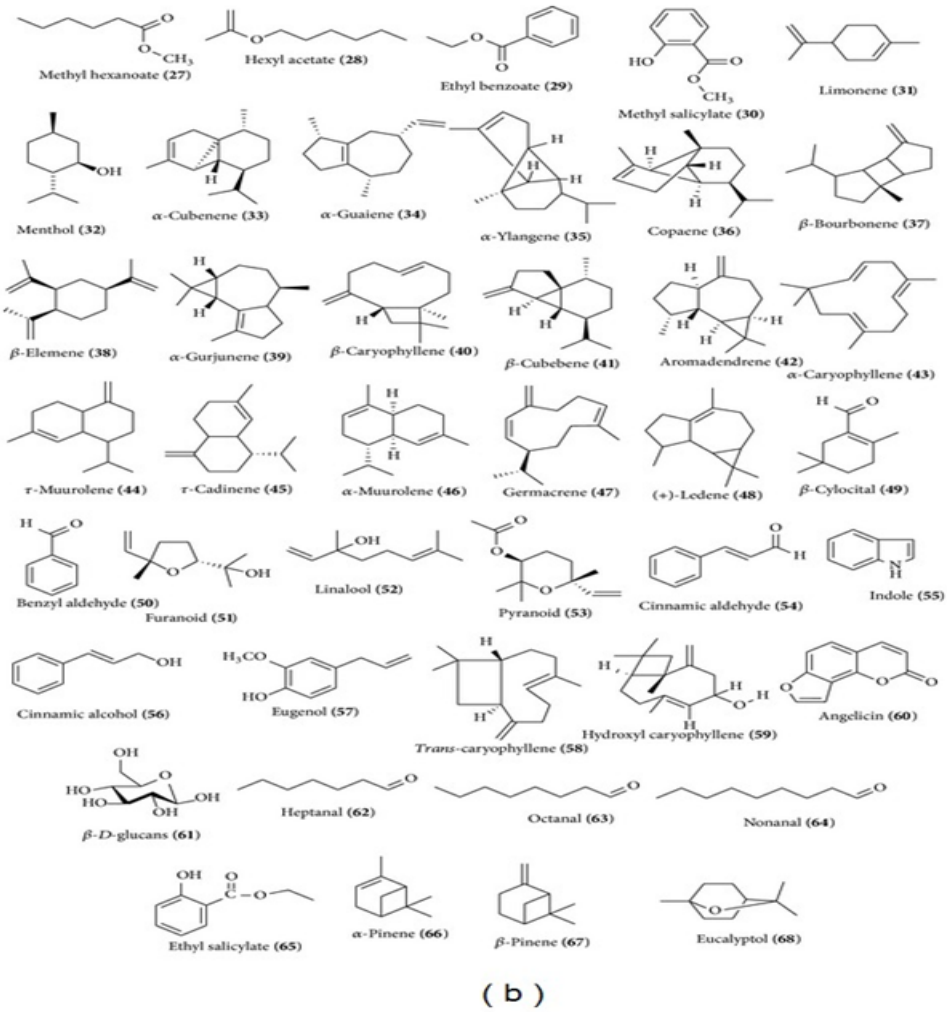
Uses	Part	Locality
Cough	Leaf	Malaysia
Colic treatment	Fruit, Root and Leaf	Unspecified
Indigestion	Fruit, Root and Leaf	Unspecified
Loss of appetite	Fruit, Root and Leaf	Unspecified
Prevention of nutritional anemia	Leaf	Unspecified
Anthelmintic	Leaf	Unspecified
Irritant potential	Leaf	Unspecified
Nutritive diet	Fruit	Mediterranean countries
Mild laxative, expectorant, and diuretic	Fruit	India
Colic treatment	Fruit, Root and Leaf	Unspecified

Table 2: Phytoconstituents of *F. Carica* leaf.

Phytoconstituent	Type	Function
Flavonoids	Polyphenols	Antioxidant, anti-inflammatory
Carotenoids	Pigments	Antioxidant, anti-inflammatory
Phenolic acids	Polyphenols	Antioxidant, anti-inflammatory, anti-cancer
Tannins	Polyphenols	Antioxidant, anti-inflammatory, anti-cancer
Coumarins	Phenolic compounds	Anti-inflammatory, anti-bacterial, anti-fungal
Alkaloids	Nitrogen-containing compounds	Anti-inflammatory, anti-cancer
Steroids	Lipids	Anti-inflammatory, anti-cancer[3]

Table 3: Nutritional values of *F. Carica* leaf.

Nutrient	Amount per 100 g of dried leaves
Protein	9.9 g
Carbohydrates	44.3 g
Fiber	33.3 g
Fat	3.9 g
Ash	12.2 g
Calcium (Ca)	1,973 mg
Iron (Fe)	45 mg
Magnesium (Mg)	2,299 mg
Phosphorus (P)	214 mg
Potassium (K)	6,965 mg
Sodium (Na)	3,478 mg
Zinc (Zn)	3.8 mg
Copper (Cu)	0.4 mg
Manganese (Mn)	5.5 mg
Selenium (Se)	0.1 µg
Vitamin A (IU)	6,230 IU
Vitamin C (mg)	3.3 mg[4-7]



(b)

Figure 1: Phytochemicals structures of *F. Carica.*

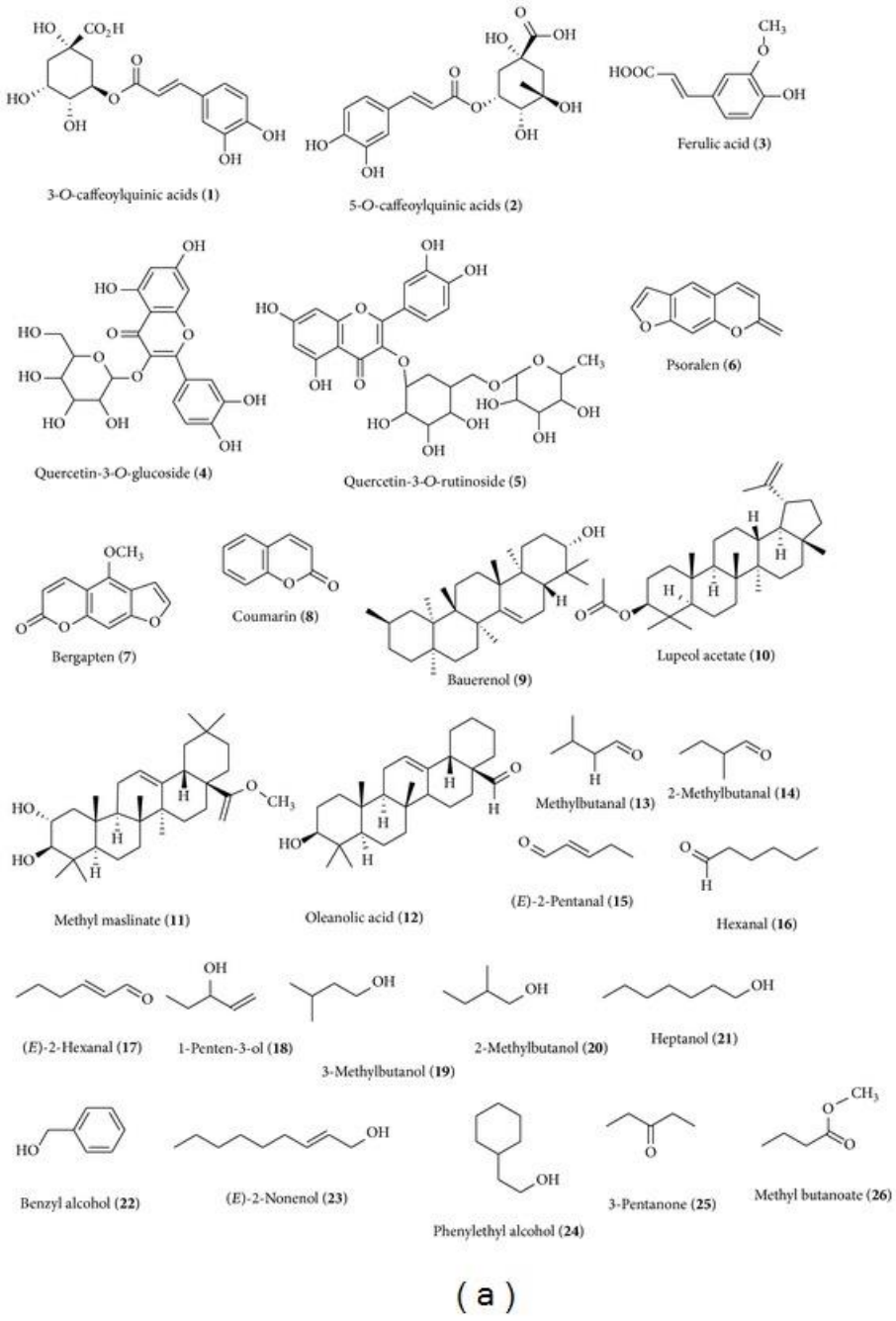


Figure 2: Phytochemicals structures of *F. Carica.*[8-10]

Pharmacological activities of *F. Carica*

Anti-inflammatory activity:

In the year 2001, the anti-inflammatory properties of Ficus carica extract was studied by Khalil and his colleagues. The authors had found that the extract exhibited significant anti-inflammatory activity in vitro and in vivo models, they concluded that ficus carica had prominent role in treating anti-inflammatory and it could be a potential plant to treat any such disorders in near future.[11-12]

Anti-hyperglycemic activity

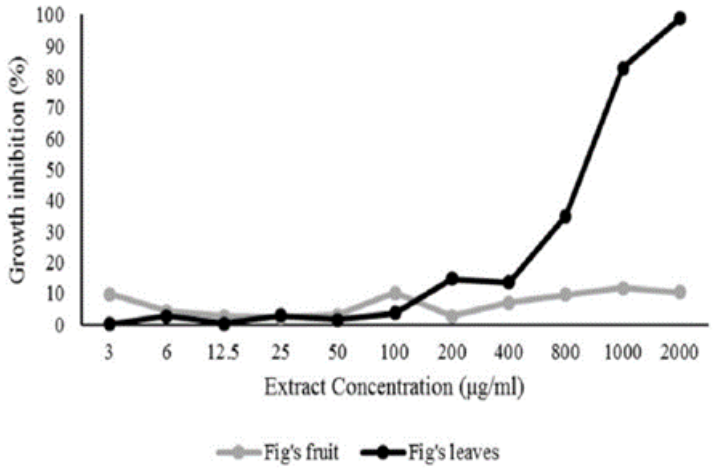
In the year 2015 Ghafoor unissa and her team of scientists investigated the hypoglycemic properties of Ficus carica leaf extract. The authors found that the extract had a significant hypoglycemic effect in diabetic rats, they concluded that ficus carica also had potential to cure diabetes and could be a potential natural remedy for diabetes.[13-15]

Antioxidant activity

In the year 2019, Bermejo and colleagues conducted a study and found that *F.carica* species had several antioxidative properties exhibiting remarkable results. They concluded that this wonder plant could be used to treat and prevent oxidative stress-related disorders and the results were similar to earlier conducted studies for the same activity by different scientists.[16]

Anti-cancer activity

In 2019, Risa Purnamasar and her team of scientist proved the anticancer activity of *F.carica* using FTIR analysis and the concluded that the leaf extract had better anti-cancer activity than its fruit.[17]



Anti-Microbial activity

In 2013 Javed Ahmed and his team performed the experiment of *F. carica* by testing it on following species S. epidermidis, K. Pneumoniae, B. Subtilis, E. aerogens and proved the anti-microbial activity. They concluded that the specie had profound anti-microbial activity and could be analyzed further.[18-20]

Antimicrobial activity results of F. carica Methanol and Water extracts.

Table 4: Microorganisms and MIC values (mg/mL).

	E. coli	S. aureus	P. aeruginosa	E. faecalis	K. pneumoniae
Methanol	0.625	0.156	>2.5	>2.5	>2.5
Water	2.5	0.625	>2.5	>2.5	>2.5

CONCLUSION

Overall, all the studies which were reviewed demonstrated the broad range of applications of Ficus carica, from its genetic diversity and its historical uses to its anti-inflammatory, anti-diabetic and antioxidative properties, anticancer properties. This shows that this plant has remarkable properties which could be exploited to find new uses of this existing wonder plant.

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