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A Review on Various Pharmacological Potential of ‘‘*Ficus carica*’’

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ABSTRACT:

Context: Traditional medicine has utilized Ficus carica Linn (Moraceae) to treat a variety of conditions affecting the respiratory, reproductive, endocrine, and digestive systems. It is also used to treat urinary tract infections and gastrointestinal tract infections.

Objective:-The purpose of this review is to compile the disparate data on *Ficus carica* , phytochemistry, pharmacology, toxicity, and medicinal uses that are currently available in the literature. Additionally, it investigates *Ficus carica* potential for therapeutic use in ethinophytopharmacology.

Methods and Materials: All of the information on *Ficus carica* that was available was gathered from electronic databases, including library searches, Academic Journals, Google Scholar, PubMed, Science Direct, and Web of Science.

Results: Ficus carica has been used traditionally for around 40 different sorts of illnesses, according to ethnomedical records from around the world. Plant pigment, enzymes (protease, oxidase, and amylase), and primary and secondary metabolites have all been isolated as a result of phytochemical study. Numerous biological (pharmacological) actions have been demonstrated using isolated Ficus carica components, fresh plant materials, and crude extracts. conclusion: In conclusion, traditional medicine has shown that Ficus carica is a useful source for treating a variety of illnesses, including anemia, cancer, diabetes, leprosy, liver problems, paralysis, skin conditions, and ulcers. In pharmaceutical biology, it is a viable contender for future clinical applications as well as the creation and formulation of novel medications.

Keywords: Fig, Environment, Description, Chemical Constituents, Pharmacological Activity, Uses, Conclusion.

INTRODUCTION

The fig is the edible fruit of *Ficus carica*, a tiny tree species found in western and southern Asia that belongs to the Moraceae family of flowering plants. It has been farmed since antiquity and is currently grown all over the world.[1] [2] The genus Ficus, which includes more than 800 tropical and subtropical plant species, has Ficus carica as its type species.

A fig plant is a big shrub or small deciduous tree with smooth white bark that can reach a height of 10–12 m (33–39 ft). Three to five deep lobes can be found on its big leaves. The syconium, a type of multiple fruit, is a tear-shaped fruit that is 3–5 cm (1–2 in) long. Its green skin may purple or brown as it ripens, and its sweet, soft crimson flesh is dotted with crunchy seeds. The milky discharge from the green parts irritates human skin. Fresh figs are available from late summer to early fall in the Northern Hemisphere. They can be grown even in hot summer continental climes and can withstand mild seasonal cold. 1.14 million tons of raw figs were produced worldwide in 2018, with Turkey and North African nations (Egypt, Morocco, and Algeria) producing the most, making up 64% of the total..[3]

The dried fruits of *F. carica* are said to be a good source of organic acids, phenolic compounds, vitamins, minerals, sugars, and carbs [4–5]. High levels of fiber and polyphenols are also present in both fresh and dried figs (71–72).

There are 126 chemical components listed in all. In traditional medicine, its fruit, root, and leaves are used to treat a variety of conditions, including cardiovascular, respiratory, and gastrointestinal (diarrhea, indigestion, colic, and loss of appetite), as well as anti-inflammatory and antispasmodic [6, 7]. The phototoxicity of *F. carica* leaves is believed to be caused by furocoumarins such as psoralen. In a clinic, *F. carica* leaves are mostly used to treat diabetes, hemorrhoids, and herpes zoster. The hypoglycemic, antioxidant, anti-inflammatory, and other properties of ten anti-diabetic compounds that were isolated from *F. carica* leaves were investigated. Further research is needed to determine the bioactive components of *F. carica* leaves, as well as to infer their molecular mechanisms.Further more research should be done on the safety profile of *F. carica* leaves.

Because of its edible fruit, *F. carica* are grown in a variety of locales across the world. Humans are said to have brought it to the Mediterranean from Western Asia. Today, it is also a vital global crop. Edible figs are produced mostly in Turkey, Egypt, Morocco, Spain, Greece, California, Italy, Brazil, and other regions with hot dry summers and generally warm winters [24 Around the world, F. carica is cultivated for its edible fruit.[23]. *Ficus carica* leaves have been shown to be effective in treating diabetes, ulcers, skin diseases, respiratory, gastrointestinal, cardiovascular, and dysentery issues. The leaves can be used to make a very effective cough syrup.

TAXONOMICAL CLASSIFICATION

Family:	Moraceae
Genus:	Ficus
Species:	*Ficus carica*
Local name:	Anjeer
Kingdom:	Plantae
Class	Magnoliopsida
Division	Magnolipphyta
Order	Urticales

VERNACULAR NAMES

Language or System of Medicine	**Name**
English	Fig, Common fig tree
Hindi	Anjeer, Anjir, Tin
Sanskrit	Angira, Anjeer , Anjir , Phalgu , Rajodumbara
Bengali	Dumur , Tin
Arabic	Anjeer, Teen, Ten, Teen barchomi
Pakistan	Faag, Anjeer, Anjir, Injir, Inzar, Anzer
Iran	Anjeer
Unani	Anjir
Nepalese	Anjir
Malaysia	Anjir
Chinese	Wu Hua Guo, Mo Fa Guo

ENVIRONMENT

The *Ficus carica*, or common fig tree, thrives in a specific environment that allows it to flourish. Here are the optimal conditions for establishing a healthy fig tree:

- **Climate:** Fig trees prefer warm, sunny climates. They grow best in regions with long, hot summers and mild winters. They can tolerate some cold but may need protection in harsh winters.
- **Sunlight:** Full sunlight is crucial for fig trees. They require at least 6-8 hours of direct sunlight per day to produce a good yield of fruit.
- **Soil:** Fig trees are not finicky about their soil and can thrive in a range of conditions. Soil should be well-drained and rich in organic substances and soil pH range of 6.0 to 6.5**.** and grow in a variety of soil types. The soil ought to be rich in organic matter and fertile.
- **Watering:-**Regular irrigation is essential for fig trees, particularly during dry seasons. On the other hand, they dislike soggy soil.
- **Space**: Fig trees need space to grow and spread. To give them ample space to grow correctly, plant them at least 15 to 20 feet apart.
- **Frost Protection:** In colder climates, fig trees might need to be protected from frost. This can involve wrapping the tree in burlap or providing some other form of insulation during the winter months.

PLANT DESCRIPTION

TREE:- A fig plant is a tiny tree or shrub with smooth white bark that can reach a height of 10-12 meters (33-39 feet). The leaves have three to five lobes. The 3-5 cm (1-2 in) long, tear-shaped fruit is known as a syconium, a type of multiple fruit. Its green skin might turn purple or brown as it ripens, and it tastes delicious, soft reddish flesh with many crunchy seeds. Laticifer cells of *Ficus carica* create the milky sap. Human skin is irritated by the green portions' sap.[26] The many one-seeded fruits, which are actually drupelets, are produced by the fleshy fake fruit that grows from the edible mature syconium.[27]

FLOWER:- Fig trees have distinctive and intriguing flowers. Flowers in the conventional sense are not produced by fig trees. Rather, the syconium, a distinct structure, houses both male and female flowers.

LEAVES :- *Ficus carica* fragrant, deeply lobed (three or five lobes) leaves measure 12 to 25 cm (4+1⁄2–10 in) in length and 10 to 18 cm (4–7 in) in width. There are 126 chemical compounds in F. carica leaves, which have anti-inflammatory, anti-bacterial, anti-cancer, antidiabetic, hepatoprotective, anticholinesterase, and anti-Herpes simplex virus type 1 (anti-HSV-1) qualities. [28]

STEM:- A fig tree's stems are equally as significant as its roots. They sustain the tree's branches and leaves and are in charge of moving water, nutrients, and energy throughout the tree. A fig tree's stem is made up of various components, each of which serves a specific purpose. [29] The trunk is the first segment of the stem. The tree's major support structure, the trunk, is in charge of keeping the branches and leaves in place. Additionally, it facilitates the movement of nutrients and water from the roots to the rest of the tree via the trunk.

ROOTS:- A fig tree's ability to survive and thrive depends on its roots. They hold the tree in position, store energy for later use, and absorb water and nutrients from the earth. The taproot and the lateral roots are the two primary components of a fig tree's root system. The main root that descends directly into the ground is the taproot. It aids in securing the tree firmly in place and is often longer and thicker than the lateral roots. [30]

BARK:- Its bark is smooth. The outer bark varies in color from ash to silvery gray and includes rounded, irregular, exfoliated flakes. The bark's middle section seems to be either brownish or mild reddish brown in hue. The inner part is composed of layers of orange-brown or pale yellowish granular tissue.[69]

FRIUT:- A fig is a special fruit that looks like a teardrop and is around the size of your thumb. Its skin can be eaten and is either purple or green. The meat is pink and has a slightly sweet flavor. A fig is actually a syconium, which is a small cluster of inverted flowers that grows inside a pod, even though it is referred to as a fruit. Fig fruits can be eaten raw or dried, or they can be processed to make fig paste or jam.

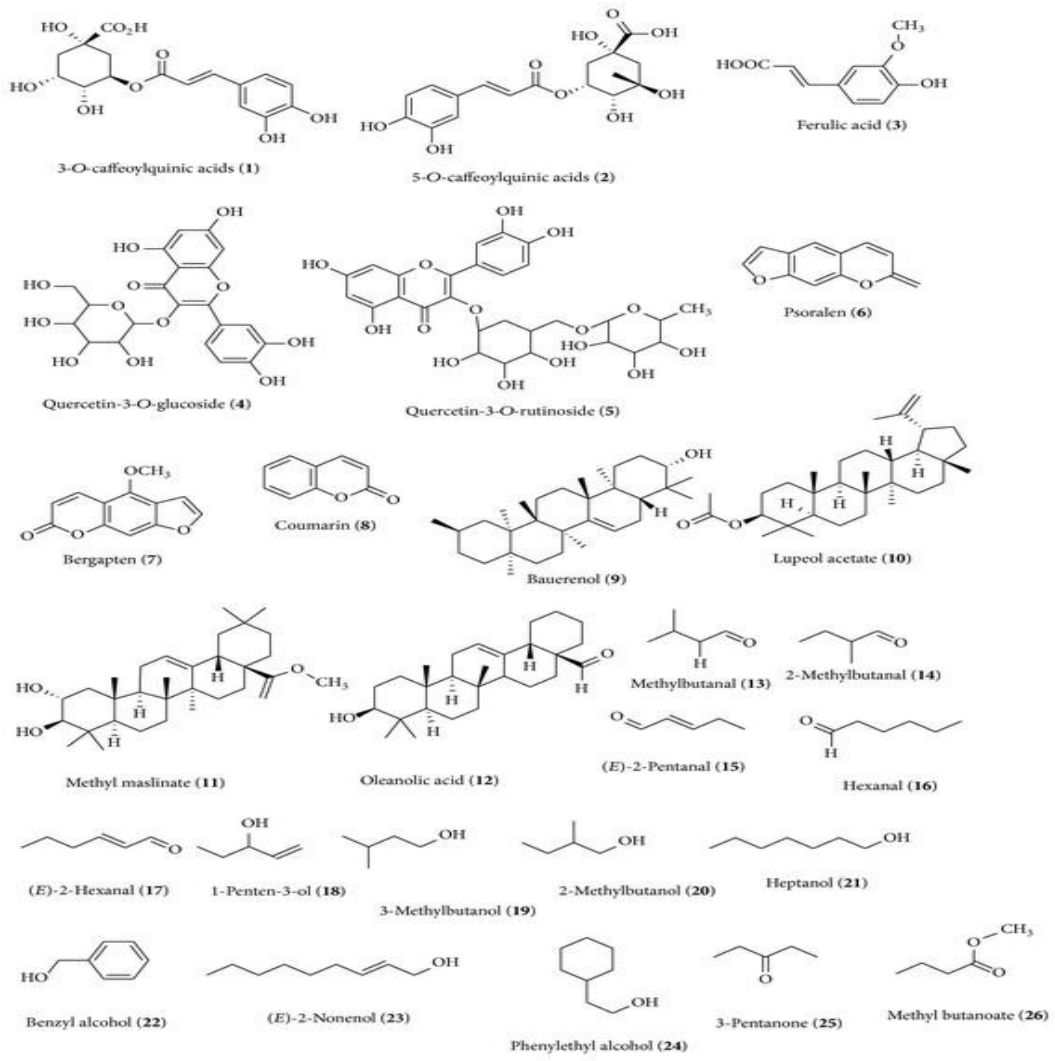
LEAF:- There are five fundamental shapes for fig leaves. They can also be lobed and differ in size, texture, and color. The fundamental forms are: smooth-edged oval. Oval and undulating, with curves and dents. The base of truncate leaves is straight and perpendicular to the leaf. Decurrent: the leaf moves along the stem in a downward direction. The leaf is heart-shaped and cordate.

POWDER:- Ideal for creating pastes, jams, jellies, spreads, and dips to go with any kind of snack. Excellent for fig Newton cookies. Another pantry substitute for sweeteners. Add to ice cream, smoothies, yogurt, and drinks.Produced at a gluten-free factory in the United States and packaged in a resealable, stand-up bag to guarantee freshness.

Ingredients: Fig Fruit, Calcium Stearate.

CHEMICAL CONSTITUENTS

Numerous bioactive compounds, including phenolic compounds, phytosterols, organic acids, anthocyanin composition, triterpenoids, coumarins, and volatile compounds like hydrocarbons and aliphatic alcohols, as well as a few other classes of secondary metabolites from various parts of *F. carica*, were found in phytochemical studies on the plant. Phenolic chemicals, organic acids, and volatile compounds are present in the majority of *F. carica* species [31, 32].



The volatile compounds found in Different chemical classes are used to categorize and distribute *F. carica* leaves. Aldehydes like methyl-butanal, 2-

methylbutanal, hexanal, and (E)-2-hexanal are among them, as are alcohols like 1-penten-3-ol, 3-methyl-1-butanol, 2-methylbutanol, heptanol, benzyl alcohol, (E)-2-nonen-1-ol, and phenylethyl alcohol, ketone 3-pentanone, and esters like methyl butanoate. [33].

The fig fruit and bark of *F. carica* were used to separate fifteen anthocyanin pigments. Most of them contain cyanidin as an aglycone and a few pelargonidin derivatives [34].Benzyl aldehyde, benzyl alcohol, cinnamic aldehyde, indole, cinnamic alcohol, and hydroxyl caryophyllene are among the many volatile chemicals found in pentane extracts from the fig of F. carica [32].

Phenolic acid, chlorogenic acid and flavonoids were among the total and individual phenolic components that were isolated from both fresh and dried fig. Quercetin was the most abundant individual phenolic [35], Microbial β-D-glucans from *F. carica* in figs [36]. The F. carica was found to include phenols, anthocyanins, fructose, glucose, and sucrose [31].

Aldehydes are among the several volatile components that have been identified in five Portuguese types of Fruits (pulps and peels) . The fig fruit and bark of *F. carica* were used to separate fifteen anthocyanin pigments. The majority of them contain cyanidin in the form of aglycone (37).

AIM AND OBJECTIVE OF *FICUS CARICA*

The common fig tree, or ***Ficus carica***, serves several important purposes:

1. **Fruit Production**: Primarily grown for its sweet, nutritious figs, which can be eaten fresh, dried, or used in cooking.
2. **Ornamental Use**: Valued for its aesthetic appeal, with broad, lobed leaves that enhance gardens and landscapes.
3. **Cultural Significance**: A plant with deep historical roots, referenced in ancient texts and holding symbolic meanings in various cultures.
4. **Shade Provision**: In hot climates, the fig tree's large canopy offers excellent shade.
5. **Medicinal uses:** Because of their possible health benefits, many fig tree parts have been employed in traditional medicine.
6. **Ecological Benefits**: Supports biodiversity by attracting pollinators and providing habitats for wildlife.

REVIEW OF LITERATURE

1. 2024:-

- **Antioxidant Activity:-** Yang Qiuxia et al:- Phytochemicals were synthesized from ficus using ultrasound-assisted extraction under ideal circumstances. Extremely high performance liquid chromatography-tandem mass spectrometry (UPLC-MS/MS) was used to determine the chemical makeup of fig leaves and fruit. These phytochemicals were characterized by prenylated coumarins and flavonoids. The extensive usage of fig fruit in functional foods was made possible by these facts.
- **Hepatotropic Activity:-** Haq Nawaz et al:- The present study evaluated the therapeutic effect of leaf and fruit extracts of *F. carica* a good source of natural antioxidants, against CCl4-induced hepatic damage in a rat model. After CCl4 treatment, the elevation in TSB,ALT, AST, and ALP levels provided evidence of CCl4-induced free radical production leading to hepatotoxicity and animal cell damage.
- **Anti-inflammatory Activity:-**Rao Guohua et al:- As synthesis of fig fruit is widely accepted in warm and tropical regions due to the sweet taste and health benefits. The health advantages of fig fruit are attributed to its polysaccharides. The precise structural characteristics of a fig fruit were identified by separating its water-soluble polysaccharide.
- **Anti-Hypothyroidism:-** Marwa M. Elbatanony et al:- As synthesis the study targets anti-hypothyroditic effect and phytochemistry of the *Ficus carica* leaves extract.TLC chromatography led to isolation of five triterpenes, oleanene and β- sitosterol. Using a fluorometric assay, the extract showed a promising in vitro anti-inflammatory response.
- **Antifungal Activity:-** Subramaniyan Vishnupriya et al:-As synthesis the *in-vitro* method was employed to investigate the antifungal activity of postbiotic or cell-free supernatant (CFS) acquired from *Lactobacillus plantarum*. The individual antifungal effect of the identified metabolites against the fig postharvest pathogens was determined through the MD study.

2. 2023:-

- **Anti-diabetic Activity :-** Limei Lin&Yin Zhang et al To determine if the dichloromethane extract of *F.carica* leaves (FCL) had a hypoglycemic effect on diabetic mice, as well as to determine the extract's bioactive ingredients and assess how well they prevented hyperglycemia in HepG2 cells. FCL dichloromethane extract may have antidiabetic effects, primarily by reduction of blood glucose, enhancement of blood lipids, and improvement of glucose tolerance.
- **Anti-Oxidant Activity:-** Guo Yushan et al:- As synthesis the phytochemicals were prepared from fig us by ultrasound-assisted extraction under optimized conditions HPLC tandem mass spectrometry was used to determine the chemical makeup of the fig fruit and leaves (UPLC-MS/MS). The defining phytochemicals were prenylated flavonoids. For the widespread usage of fig fruit in functional foods, these data offered helpful information.

3. 2022:-

- **Anti-Inflammatory Activity:-**Mostefa Nadjet et al :-As synthesis, the current work aims to evaluate the anti-inflammatory qualities of ethanolic and aqueous extracts of *Ficus carica* fruit in vivo and explore the phytochemical components. The present study demonstrated that AQE and EE of *Ficus carica* fruit exerted strong anti-inflammatory activity in λ-carrageenan-induced mice edema probably due to the presence of polyphenols inhibiting the mediators of inflammation.
- **Anti-Cancer Activity:-** Morovati Mohammad Reza et al:-Synthesis Ficus carica has shown to have a significant ability to inhibit tumor formation and development of cancer cells through modulating various signaling mechanisms and interaction including a large number of cell signaling molecules.
- **Khan Ali Amir et al**:- As synthesis *Ficus carica* is less studied Because of their relative anti-cancer potential and the molecular mechanism involved, its latex and that of *F. carica* were chosen for the current investigation. leaves latex of *F. carica* anticancer potential in MDA-MB-231 cells showing antiproliferative and anti-metastatic effects along with significant effects on cell shape.

4. 2021:-

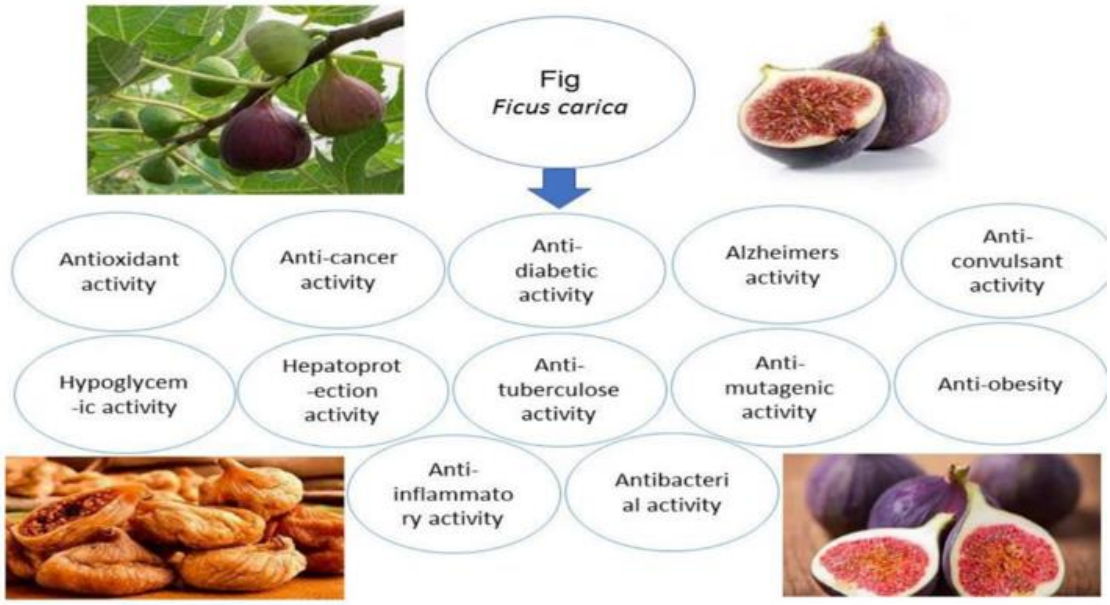
- **Antioxidant and Anticancer Activity:-** Rahman Raoufa Abdel et al:-As synthesis *Ficus carica* investigate the antioxidant and anticancer properties of FC ethanolic leaves extract. The dried coarse powder of *F. carica* leaves was exhaustively extracted with ethanol. Since antioxidant and anticancer properties are linked, the resultant crude ethanolic and total phenolic content was measured in F. carica extract (FCE). The standard stable free radical, DPPH, was used to measure the antioxidant activity of the FCE. All of the chosen cell lines were strongly inhibited by the extract's anti-cancer properties.
- **Anti-depressant Activity** :- Patil Sudhir et al:-The present study showed anti-depressant activity of ethanolic extract *of Ficus carica* leaves in FST and TST models of depression comparable to standard drug Imipramine. The present finding also support the use of *Ficus carica* as a antidepressant as recommended medicine and gives a clue to development of new antidepressant from well-known folk remedies.
- **Antibacterial and Antifungal Activity:-** Shafique Firza et al:-As synthesis the need to develop new strategies to control microbial infections. Thus, we chose to focus on extracts of various Ficus carica components that have good activity against gram-positive, gram-negative, and fungal bacteria. Two gram negative bacteria and two fungal species and concluded that high potential was observed in menthanol extract of leaves against gram negative.

5. 2020:-

- **Anti-oxidant activity:-** M. Shahinuzzaman et al:- As synthesis studies on natural additives as possible antioxidants are becoming more and more significant as synthetic antioxidants, which are commonly found in meals, are known to have negative health impacts. The antioxidant activity and total phenolic content (TPC) are examined in this study. The extract from the "White Genoa" latex obtained by maceration showed the highest levels of TPC and antioxidant activity when compared to the extract obtained using UAE.

- **Fateh Aljane et al:-**As synthesis the composition of reducing sugar and phenolics in fig fruits were examined as part of the synthesis process. Furthermore, the DPPH and ABTS assays were used to measure the antioxidant activity. The findings also demonstrated that fig fruits are a good and useful source of natural antioxidants with potential applications in the food and medicinal industries. The ecotypes with purple-blackish skin and had the highest contents of TA. Skin color had a highly significant effect on total anthocyanins and was the major tissue that contributed to anthocyanin compositions in figs fruits.
- **Anti-inflammatory Activity:-** Muhammad Fariez Kurniawan et al:- As synthesis flavonoids are among the several phytochemicals found in fig leaves. The purpose of this study was to ascertain whether the raw material extract had an anti-inflammatory effect and to develop the best possible cream formulation for the extract. The cream of ethanolic extract of figs leaves descriptive observation subjectively to the microscopic image of COX-2 enzyme expression in skin tissue of mice induced by croton oil.

PHARMACOLOGICAL ACTIVITIES



- **Skin disorders:-** One of the most common traditional uses of F. latex is the treatment of warts [45]. Warts are benign tumors caused by an infection of the skin epidermis by the human papillomavirus (HPV) [46]. The two most common conventional treatments for warts are salicylic acid and liquid nitrogen cryotherapy [47]. A comparison of the effectiveness of cryotherapy and F. latex treatment in humans revealed similarities between the two treatments[48]. Additionally, F. Latex is more effective than the conventional treatment of salicylic acid at eliminating warts from ailing cows. Moreover, F. Latex treatment has no known side effects in comparison to salicylic acid treatment [49].
- **Antioxidant Activity:-** Numerous phenolic compounds found in *Ficus carica* have a variety of physiological functions in plants. After being consumed by humans, dried figs are antioxidants in vitro. These results imply that since dried fruits are high in phenol antioxidants and other nutrients, most likely fiber, they ought to make up a larger portion of the diet. The total flavonoid content, antioxidant capability, and anthocyanin profile of *F. carica* fig fruits were examined [15]. These days, more people are paying attention to plant phytochemicals' antioxidant qualities since they may help treat a number of critical disorders.as cancer, heart disease, and diabetes.[38] Consequently, the antioxidant capacity of F. latex has been examined by several studies. Studies show that the antioxidant activity of F. latex is higher than that of *F. carica* fruits. It is possible to predict the antioxidant action of F. latex since it is a rich source of organic acids, phenolic compounds, and a number of volatile chemicals with radical-scavenging capabilities (39–44).
- **Anti-inflammatory:-** It has been demonstrated that *Ficus carica* leaf extracts in petroleum ether (PEE), chloroform (CE), and ethanol (EE) exhibit anti-inflammatory qualities against carrageen-induced rat paw edema. *Ficus carica's* EE has a more potent anti-inflammatory effect than PEE and CE when compared to the popular drug indomethacin (73). A common biological response, the ammation process is initiated to protect cells from infection and further damage. Conversely, unmanaged inflammation can lead to metabolic disorders, cancer, obesity, and degenerative diseases like Alzheimer's disease and atherosclerosis (74).Therefore, concentrating on the inflammatory response—which includes cytokines, free radicals, prostaglandins, and growth factors—can help avoid the onset of chronic diseases. The traditional usage of *F. carica* to alleviate inflammation has been validated by scientific studies.(75).
- **Anticancer Activity:-** From fig (F. carica) latex, a combination of 6-O-acyl-β-d-glucosyl-β-sitosterols has been identified as an efficient cytotoxic agent that inhibited different cancer cell lines in vitro.[16] In 1952, mice with benzopyrene-induced sarcoma were given small doses of F. latex, which inhibits tumor growth and even destroys small tumors. The anticancer activity of F. latex was originally described in this study [50]. Similarly, in a recent study, rats with breast cancer received injections of F. latex directly into the tumor, causing the tumor to decrease without generating adverse consequences [51]. Furthermore, our work demonstrates that protocatechuic acid is the primary phenolic component in F. latex that may have an anticancer effect [52].Analogously, other investigations have demonstrated that F. latex efficiently suppresses the proliferation of several cancer cells, including as melanoma cells, liver cancer cells, esophageal cancer cells, cervical cancer cells, human oral cancer cells, and human colorectal cells. This implies that F. latex has active ingredients and helps stop these deadly tumors from spreading [53–58].

- **Hepatoprotective Activity:-**Rats given 50 mg/kg of rifampicin orally were used to test the hepatoprotective effects of the petroleum ether extract from *F. carica* leaves. The rats' significant reversal of the biochemical, histological, and functional alterations brought on by rifampicin suggested that the extract might have hepatoprotective effects [17]. Numerous investigations have shown that F. latex possesses liver-protective qualities. For example, F. latex prevents the carcinogenic compound 3H-benzo (a) pyrene from binding to rat liver proteins. [59].Justification is provided by the biological effects of the protein component of F. latex. The high concentration of phenolic content in F. latex may be the cause of this effect [60].

- **Hypoglycamic Activity:-** In rats with streptozotocin-induced diabetes, an aqueous extract of leaves has been shown to have a hypoglycemic effect, preventing the animals from losing weight. Furthermore, therapy raised the survival index, which was associated with higher plasma insulin levels. The fruit of *F. carica* has also been shown to exhibit a comparable action. The hypoglycemic impact of the water and methanolic extract of *Ficus carica* leaves prepared by microwave aided extraction was evaluated in normal, diabetic, and hyperglycemic normal rats over the course of a 30-day chronic administration period. In both water and methanolic extract, *Ficus carica* leaves demonstrated notable hypoglycemic and antihyperglycemic effects at a 200 mg/kg dosage. Furthermore, the hypoglycemic potential of the water and methanolic extract was compared to that of the standard drug (tolbutamide). In the glucose tolerance test, tolbutamide plus water and methanolic extract (at a dose of 200 mg/kg) also decreased the external glucose level (77).

- **Antidiabetic activity:-** For a long time, fig leaves have been used as an antidiabetic [66]. Numerous fig tree parts, such as fruits, leaves, and stem barks, have been shown in both in vitro and in vivo tests to have antidiabetic properties [67–69]. A recent study suggests that the extract from F. latex may have an antidiabetic effect by inhibiting digestive enzymes that stop the absorption of carbs by the intestines. This activity may be mediated by certain latex chemical components, mainly oxalic acid, mangiferin, 6-methyl 4-chromanone, and 2-methylphenylpentyl ester [90]. The antidiabetic effects of a dichloromethane extract of Ficus carica leaves were evaluated in diabetic mice given a high-fat diet and streptozotocin (STZ, 100 mg/kg). Two doses of the extract (500 and 1000 mg/kg) were given, and the effects on oral glucose tolerance, blood lipids, fasting blood glucose (FBG), and pathological changes were assessed.Nevertheless, we employed column chromatography to separate the dichloromethane extract, and we structurally identified the compounds using 1H and 3C NMR spectra. The hypoglycemic effects of the isolated compounds were tested in HepG2 cells produced by palmitic acid (PA) (78).

- **Anti-fungal and Antibacterial Activity :-** The methanol extract of *F. carica* demonstrated significant antibacterial action against oral bacteria (MICs, 0.156 to 5 mg/mL; MBCs, 0.313 to 5 mg/mL).It was demonstrated that figs might function as a natural antibacterial agent. when methanol extract was combined with ampicillin or gentamicin to have synergistic effects against oral bacteria [19]. The antibacterial qualities of *F. carica* latex extracts in hexane, chloroform, ethyl acetate, and methanol were investigated in vitro against five bacterial species and seven fungus strains using the disc-diffusion method. At 500 µg/mL, the methanol fraction's minimum inhibitory concentration (MIC) demonstrated 100% inhibition of Candida albicans and a detrimental effect on Cryptococcus eoformans; at 750 µg/mL, the 75% methanolic extract significantly inhibited Microsporum canis and ethyl acetate extract [18].
- **Antipyretic Activity:-** The ethanol extract of F. carica considerably lowered the normal body temperature at doses of 100, 200, and 300 mg/kg, whereas yeast raised the temperature. When contrasted with the typical antipyretic medicine, paracetamol (150 mg/kg.b.wt., p.o.), the effect persisted for up to five hours following drug delivery [20].The findings showed that both normal body temperature and high temperature brought on by yeast significantly decreased in a dose-dependent manner.The effects persisted for up to five hours after the drug was administered, unlike the 150 mg/kg.b.wt., p.o. dose of the typical antipyretic paracetamol.[70]

- **Antituberculosis Activity:-** A colorimetric microplate-based test has been used to screen the 80% methanol extract from *F. carica* leaves against Mycobacterium tuberculosis H37Rv. With a MIC value of 1600 µg/mL, the findings demonstrated anti-tuberculosis activity [21]. Anti-tuberculosis drug-induced hepatotoxicity (ATDH) causes substantial morbidity and mortality and decreases treatment effectiveness. Asymptomatic transaminase elevations are common during anti-tuberculosis treatment, although hepatotoxicity can be fatal if not detected early and therapy is not stopped promptly. Adverse effects decrease treatment effectiveness because they significantly increase non-adherence, which in turn causes treatment failure, relapse, or the emergence of medication resistance (79).

- **Anthelmintic:-** Syphacia obvelata and Vampirolepis nana spontaneously infected NIH mice were used to assess the anthelmintic activity of *F.carica* latex. The latex, which was administered in doses of 3 mL/kg/day for three consecutive days, effectively eliminated S. obvelata. V. nana (8.3%) and A. tetraptera (2.6%), however, were not substantially eradicated. Because of its high acute toxicity and limited anthelmintic activity, this lattice was not recommended for use in traditional medicine [22].The present work aimed to investigate the anthelmintic

characteristics of *F.carica* insipida Willd. and *F.carica* latex in NIH mice that were naturally infested with the oxyurids Syphacia ob elata and Aspiculuris tetraptera, as well as the cestode Vampirolepis nana. These infections are important because they are widely used to evaluate the efficacy of different chemotherapeutic treatments (80).

- **Hypocholesterolemic Activity:-** Fig leaves have the ability to lower cholesterol. Fig leaves are decocted in water to create chloroform extract. Along with a decrease in hyperglycemia, it also lowers total cholesterol levels and the ratio of total cholesterol to HDL cholesterol. Furthermore, the decrease in blood cholesterol levels in streptozocin-induced diabetic rats is appreciated by the cholesterol content of HepG2 cells.

- **Hemostasis:-** F. latex is used to treat wounds in several traditional folk medical practices [61]. One stage of the wound healing process that encourages hemostasis, or wound healing, is blood clotting [62]. Consequently, it appears that F. latex contains chemicals that enhance hemostasis. This is corroborated by studies that demonstrate the F. latex protease, ficin, affects blood coagulation by activating the blood coagulation factor X [63]. The ability of other plant proteases, such as papain (Carica papaya), to heal wounds has been the subject of numerous investigations [64,65].

- **Antispasmodic and Antiplatelet Activity:-** Aqueous ethanolic extracts of *F. carica* were tested on rabbits for its antispasmodic and antiplatelet properties Analysis of the isolated rabbit jejunum revealed the presence of terpenes, alkaloids, flavonoids, coumarins, saponins, and sterols. *F. carica* (0.1–3.0 mg/mL) had a negligible effect on high K+ (80 mM) but enhanced relaxation of impulsive and low K+-(25 mM) generated contractions, similar to that caused by cromakalim. Glibenclamide pretreatment of the tissue shifted the low K+ curves to the right but did not produce high potassium ion concentrations, whereas verapamil reduced the potassium ion concentration equally at both values. At doses of 0.6 and 0.12 mg/mL, *F. carica* decreased the aggregation of human platelets caused by adenosine-5-diphosphate and adrenaline.In that experiment, the ripe dried fruit of *F. carica* displayed spasmolytic activity, most likely due to the activation of potassium ion ATP channels. Additionally, it demonstrated antiplatelet action, providing a solid pharmacological basis for its possible use in the treatment of inflammatory and intestinal motility problems (76).

NUTRITIONAL VALUE

Raw figs are 79% water, 19% carbs, 1% protein, and low in fat. Although they contain 310 kilojoules (74 kcal) of food energy per 100-gram serving and 14% of the Daily Value, DV, of dietary fiber, they are a moderate source of essential micronutrients. Figs are composed of 64% carbohydrates, 3% protein, and 1% fat when dried to 30% water.[8] With 1,041 kJ (249 kcal) of food energy per 100 grams, dried figs are a substantial source of dietary fiber (more than 20% DV). They also include modest levels of calcium, iron, magnesium, potassium, and vitamin K [8].

The amounts of fructose and glucose in fig fruits are almost the same, with glucose being somewhat more common overall and sucrose being quite rare [9-11] However, in some fig kinds, the fructose concentration may sometimes be somewhat higher than the glucose content.[9].

MEDICINAL AND TRADITIONAL USES

The soft, sweet fruit known as figs comes from the Middle East and Mediterranean. Figs provide fiber, antioxidants, and smaller amounts of vitamins and minerals.

- **Treating a variety of conditions:** The leaves and roots of the fig plant are used to treat a range of conditions, including gastrointestinal, respiratory, inflammatory, and cardiovascular disorders.
- **Laxative:** In Indian medicine, the fig is used as a moderate laxative.
- **Expectorant and diuretic:** The fig is employed as a diuretic and expectorant in Indian medicine.
- **Liver and spleen aid:** The fig is used to treat spleen and liver disorders.
- **Diabetic supplement:** The dried fruit of the fig is used as a diabetic supplement.
- **Pain relief:** Fruit paste is applied to swellings, tumors, less painfull period and inflammation for relieving pain.
- **Hemorrhage:** Hemorrhage is treated with fig fruit juice combined with honey.
- **Constipation remedy:** Fig syrup is used as a remedy for mild constipation.
- **Fodder:** The leaves of the fig are traditionally used as fodder.

TOXICITY

- Similar to other Moraceae plant species, contact with *F carica* milky sap and subsequent UV radiation exposure can result in phytophotodermatitis, a potentially dangerous skin irritation [12]. F. carica is included in the FDA Database of dangerous Plants, despite the fact that it is not dangerous.[13]
- Psoralen, the greatest concentration of any organic chemical extracted from fig leaves, is present in over 10% of the essential oil of fig leaves.[14] The main furanocoumarin chemical thought to be in charge of fig leaf-induced phytophotodermatitis is psoralen.
- Human phytophotodermatitis is known to be caused by organic chemical compounds known as furanocoumarins.

CONCLUSION

Around the world, *F.carica* is a revered and significant medicinal plant that is used in ethnomedicine to cure a wide range of conditions, including anemia, bronchitis, constipation, diabetes, fever, hemorrhoids, inflammation, liver problems, infectious infections, and many more. *Ficus carica's* many traditional uses are experimentally supported by pharmacological research conducted on its fresh plant materials, crude extracts, and separated components. Antimicrobial, anticancer, antifungal, antihelmintic, anti-inflammatory, antimutagenic, antipyretic, antispasmodic and antiplatelet, antiviral, cytotoxic, hepatoprotective, hypoglycemic, hypolipidimic, and immunostimulant properties have been the focus of recent research.The majority of the pharmacological research that was discussed was done to confirm its traditional applications. Several research organizations have thoroughly investigated aspects of its traditional uses, such as its anti-inflammatory and antibacterial properties. Its traditional use in wound healing, hematic illnesses, cardiac disorders, and sexual problems (menstrual pain) is not supported by any known experimental evidence; therefore, more research is required.

In many different places, different components of *F. carica* have been used to treat various ailments. For instance, its fruit and leaves are recommended in Pakistan, while its fruit and latex are suggested in Nablus, Palestine, to treat kidney stones. In a similar vein, fruit juice is used in Kashmir's wart medicine recipe, whereas its milky latex is applied externally in Jodhpur, India, and Turkey. More pharmacological and phytochemical research is necessary to understand the reason behind this practice.

Crude extracts were used in most of the pharmacological investigations that have been done on *F. carica*. Only a few classes of plant metabolites have been isolated as a result of phytochemical studies conducted on *Ficus carica*. Nonetheless, *F.carica's* extensive traditional use and demonstrated pharmacological properties suggest that there is still a great deal of room for phytochemical research.Essential amino acids (such as leucine, tryptophan, phenylalanine, lysine, and histidine), vitamins (such as vitamin A, vitamin C, thiamine, riboflavine, and niacin), dietary fiber, minerals (such as sodium, potassium, and calcium), and carbohydrates are all present in parts of *Ficus carica*, which is used as a dietary supplement. Therefore, it might be investigated for a range of typical bodily processes and development. However, previous studies in this sector have identified the strong bioactive secondary metabolite's anticancer, hemostatic, antifungal, scavenging, and irritating properties. Numerous research studies that provide pertinent chemical characterizations of flavonoids, phytosterols, anthocyanins, phenolic compounds, sterols, and volatile compounds have been published in the literature. The biological activities that were referred to were not recognized by them. Thus, the potential for establishing a connection between certain phytoconstituents and biological activity is enormous. Future studies in the aforementioned fields will yield results that will persuasively support Ficus carica's clinical applications in contemporary medicine.

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