

Study of Miraculous Uses of Ficus Racemosa Linn

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Abstract: *Ficus racemosa* Linn. (Family: Moraceae) is known as the cluster fig tree or Gular. A moderate-sized tree found throughout India either wild or cultivated for its fruits eaten by villagers. Ayurveda and Unani, the traditional Indian medical system, has employed the popular medicinal plant *Ficus racemosa* for many years to treat a variety of illnesses and disorders, including skeleton diseases, diabetes, inflammatory, hyperlipidemia, hemorrhoids, respiratory, liver dysfunction, antitussive, hepatoprotective, antimicrobial, and various GIT disorders. Numerous phytoconstituent components have been different parts of extracts and phytochemical screening of the *Ficus racemosa*. In light of the numerous recent results on this plant, that is much more significant. A thorough explanation of this plant is traditionally beneficial, phytoconstituents, and biological effects on this review.

Keywords: *Ficus racemosa* Linn.

I. INTRODUCTION

The Genus *Ficus* is an important group of trees which has various chemical constituents of promissive medicinal value. It is a sacred tree of Hindus and Buddhists. Four species of this genus constitute the group “Nalpamaram”, namely; *F. racemosa*, *F. microcarpa*, *F. benghalensis* and *F. religiosa* (Athi, Ithi, Peral and Arayal respectively) 1. *Ficus racemosa* is also known as *F. Glomerata*. *Ficus racemosa* has various synonyms like Udumbara (Udumbara is considered sacred to God Dattaguru), yajnanga, yajniya, yajnayoga, yajnyasara, gular, Cluster Fig tree, Country fig tree etc. It has been used in ritual sacrifice. It is one of the ksiri vriksa – latex oozes out when the leaves are cut or plucked. It is one of the plants from a group, called pancavalkala, meaning the thick bark skins of five herbs, viz. udumbara, vata, asvattha, parisa and plaksa. The decoction of pancavalkala is used internally or for giving enema in bleeding per rectum and vagina (Raja Nighantu).



Maharishi Charaka has categorized udumbara as mutra sangrahaniya – anti-diuretic herb. Susruta has described the properties of the plant, like astringent, promotes callus healing in fractures (bhagna sandhaniya), alleviates Rakta pitta, burning sensation and obesity, and useful in vaginal disorders. Habit and Habitat The plant grows all over India in many forests and hills. It is frequently found around the water streams and is also cultivated. The tree is medium tall, growing 10-16 meters in height.

II. MORPHOLOGY

The tree is medium tall with quite rich green foliage that provides good shade. The leaves are dark green, 7.5-10 cm long, ovate or elliptic. The fruit receptacles 2-5 cm in diameter, pyriform, in large clusters, arising from main trunk or large branches. The fruits resemble the figs and are green when raw, turning orange, dull reddish or dark crimson on ripening. The seeds are tiny, innumerable, grainlike, the outer surface of the bark consists of easily removable translucent flakes grayish to rusty brown, uniformly hard and nonbrittle. Bark is grayish green, soft surface and uneven 0.5-1.8 cm thick. On rubbing, white papery flakes come out from the outer surface, inner surface is light brown fracture fibrous, taste mucilaginous without any characteristic odour.

2.1 Cultivation and Collection

Ficus species are common and form an important element of lowland rain forest, both as canopy and understorey trees. Most species prefer per-humid forest, but several are found in areas with a monsoon climate and in teak forest, including locations where the soil dries out. Succeeds in full sun to partial shade. Succeeds in most soils that are reasonably moist but well-drained. Cluster fig is resistant to fire. Trees have a unique form of fertilization, each species relying on a single, highly specialized species of wasp that is itself totally dependant upon that fig species in order to breed. The trees produce three types of flower; male, a long-styled female and a short-styled female flower, often called the gall flower. All three types of flower are contained within the structure we usually think of as the fruit. The female fig wasp enters a fig and lays its eggs on the short styled female flowers while pollinating the long styled female flowers. Wingless male fig wasps emerge first, inseminate the emerging females and then bore exit tunnels out of the fig for the winged females. Females emerge, collect pollen from the male flowers and fly off in search of figs whose female flowers are receptive. In order to support a population of its pollinator, individuals of a Ficus spp. must flower asynchronously. A population must exceed a critical minimum size to ensure that at any time of the year at least some plants have overlap of emission and reception of fig wasps. Without this temporal overlap the short-lived pollinator wasps will go locally extinct.

III. PHYTOCHEMISTRY



Very little phytochemical work has been carried out on *Ficus recemosa*. The stem bark shows the presence of two; Leucyanidin-3-O- β -glucopyranosides, Leucoperalgonidin 3-O- α -L-rhamnopyranoside, β -sitosterol, unidentified long chain ketone, lupeol, its acetate, α -amyrin acetate. A new tetracyclic triterpene, glauanol acetate which is characterized as 13 α , 14 β , 17 β H, 20- α H-lanosta-8, 22-diene 3- β -acetate and racemoseic acid were isolated from leaves [12-14].

- **Stem:** campesterol, hentriacontane, hentriacontanol, kaempferol, stigmaterol, methyl Ellagic acid.
- **Leaves:** Tetra triterpene, glauanol acetate, racemosic acid.
- **Fruit:** glauanol, hentriacontane, β sitosterol, glauanolacetate, glucose, tiglic acid, esters of taraxasterol, lupeolacetate, friedelin, higher hydrocarbons and other phytosterol.
- **Root:** cycloartenol, euphorbol and its hexacosanoate, taraxerone, tinyatoin;
- **Bark:** Euphorbol and its hexacosanate, ingenol and its triacetate, taraxerone

IV. PHARMACOLOGICAL ACTIVITIES

Antialgestic: The ethanol extract of bark and leaves evaluated for analgesic activity by analgesiometer At 100, 300 and 500mg/kg was found to possess dose dependent analgesic activity²⁰

Antidiuretic: The decoction (D) of the bark of *Ficus racemosa* at a dose of 250, 500 or 1000 mg/kg Induced antidiuresis, had a rapid onset (within 1 h), peaked at 3 h and lasted throughout The study period (5 h). However, antidiuretic potential of D was about 50% lower than That of ADH. The D was well tolerated even with subchronic administration. The D Caused a reduction in urinary Na^+ level and Na^+/K^+ ratio, and an increase in urinary Osmolarity indicating multiple mechanisms of action. This proves its efficacy

Antifungal activity:

The 50% methylene chloride in hexane flash column fraction of the extract of the leaves Of *Ficus racemosa* was found to have antifungal activity. The extract inhibited the growth Of several plant pathogens (*Curvularia* sp, *Colletotrichum gloeosporioides*, *Alternaria* sp, *Corynespora cassicola* and *Fusarium* sp). Psoralen was identified as the active compound And was shown to be biodegradable, having the potential to be developed as a fungicide Against pathogens causing diseases on crops of economic importance²²

Anti bacterial activity:

Different extracts of leaves were tested for antibacterial potential against *Escherichia Coli*, *Bacillus pumitis*, *Bacillus subtilis*, *Pseudomonas aureus*. Out of all extracts tested, Petroleum ether extract was the most effective extract against the tested microorganism²³

Hypoglycemic activity:

The ethanol extract (250mg/kg/day) lowered blood glucose level within 2 weeks in the Alloxan diabetic albino rats confirming its hypoglycemic activity²³. B-sitosterol Isolated from the stem bark was found to possess potent hypoglycemic activity when Compared to other isolated compound²⁴

Anti-tussive:

The methanol extract of stem bark exhibit maximum inhibition of 56.9% at dose of 200mg/kg p.o. 90min after administration of sulphur dioxide gas in mice proving Itsantitussive potential against cough induced model

Wound healing:

Ethanol extract of stem bark showed a potential wound healing in excised and incised Wound model in rats²⁶

Antipyretic:

The methanol extract of stem bark was evaluated on normal body temperature and yeast Induced pyrexia in albino rats at the dose of 100. 200 and 300mg/kg p.o. The extract Shows the significant dose dependent reduction in normal body temperature and yeast Provoked elevated temperature which extended to 5th after drug administration

Anti-inflammatory:

Ethanol extract of leaves at dose of 400mg/kg exhibited maximum anti-inflammatory Effect with 30.4, 32.2, 33.9 and 32% with carrageenin, serotonin, histamine and dextran Induced rat paw edema models, respectively. Ethanol extract of stem bark also exhibited COX-1 and IC₅₀ value of 100ng/ml proving the drug use in the treatment of inflammatory Condition

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