



PHARMACOGNOSTICAL INVESTIGATION OF *FICUS RELIGIOSA* LINN BARK

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ABSTRACT

The present study deals with pharmacognostical studies on bark of *Ficus religiosa* Linn. The microscopical characterization revealed the presence of cork cell, stone cell, medullary rays, lignified phloem fibres. Macroscopical & microscopical characters and inorganic constituents present in a drug or plant play a significant role in identification of crude drug.

Key words: *Ficus religiosa* Linn., Pharmacognostical studies, Microscopical characters.

INTRODUCTION

Ficus religiosa (moraceae) is commonly known as 'peepal' [1] it is large sized tree. It is distributed throughout India up to an altitude of 1524m. it is cultivated in Bihar, Orissa, West Bengal [2]. The chemical constituents found are Alkaloid [3], sterols, terpenoids, anthocyanines, tannins [4]. In the traditional system of medicine plant is used as antitumour [5] and antibacterial activity, it is used in gonorrhoea, diarrhoea, and skin diseases. It shows acetyl cholinesterase (ACHE) inhibitory activity [6]. The pharmacological and Phytochemical studies have been carried out on *Ficus religiosa* Linn. pharmacognostical studies has not been reported for the bark of this plant, the present study is there for undertaken to study pharmacognostical characteristic of the bark of *Ficus religiosa*.

MATERIALS AND METHODS

The bark of *Ficus religiosa* linn were collected and authenticated by Dr Siddhamalaya at RRI Bangalore. Morphological study include shape, size, surface, colour, odour & taste of the bark. Microscopical studies were done by preparing a thin hand section of bark. It was cleared, stained with phloroglucinol & HCL & mounted in glycerine and observed under microscope. The powder drug was separately heated with phloroglucinol HCl solution and mounted in glycerine for microscopical evaluations. All the chemicals and solvents used in experiment were of analytical grade.

RESULTS AND DISCUSSION

Macroscopical characterisation

The morphological evaluation revealed the shape of bark is curved shape, uneven surface, 1.0-2.5 cm in thickness, outer surface is brown/ ash colored, taste is astringent.

Transverse section of bark

Transverse section of bark shows compressed rectangular to cubical, thick walled cork cells and dead elements of secondary cortex, consist of masses of stone cells; cambium distinct with 3-4 rows of newly formed secondary cortex, mostly composed of stone cells towards periphery; stone cells found scattered in large groups, rarely isolated, most of parenchymatous cells of secondary cortex containing numerous starch grain and few prismatic crystal of calcium oxalate; secondary floem a wide zone, sieve elements, phloem fibres in single or in group of too many and non-lignified; numerous crystal fibre also present; in outer region sieve element mostly collapsed while in inner region intact; phloem parenchyma mostly thick walled; stone cells present in single or in small groups similar to those in secondary cortex; a number of ray cells and phloem parenchyma filled with brown pigments; medullary rays uni to multiseriate, wider towards outer periphery composed of thick walled cells with simple pits.

Powder microscopy

The powder revealed the presence of starch grain, cork, parenchyma, fibres & brown matter.

Physicochemical parameters

Physicochemical parameters include extractive

value (water soluble, alcohol soluble), ash value (water soluble, acid insoluble), moisture content in table 1.

Fig 1. Morphology of bark



Fig 2. T.S OF *Ficus religiosa* bark

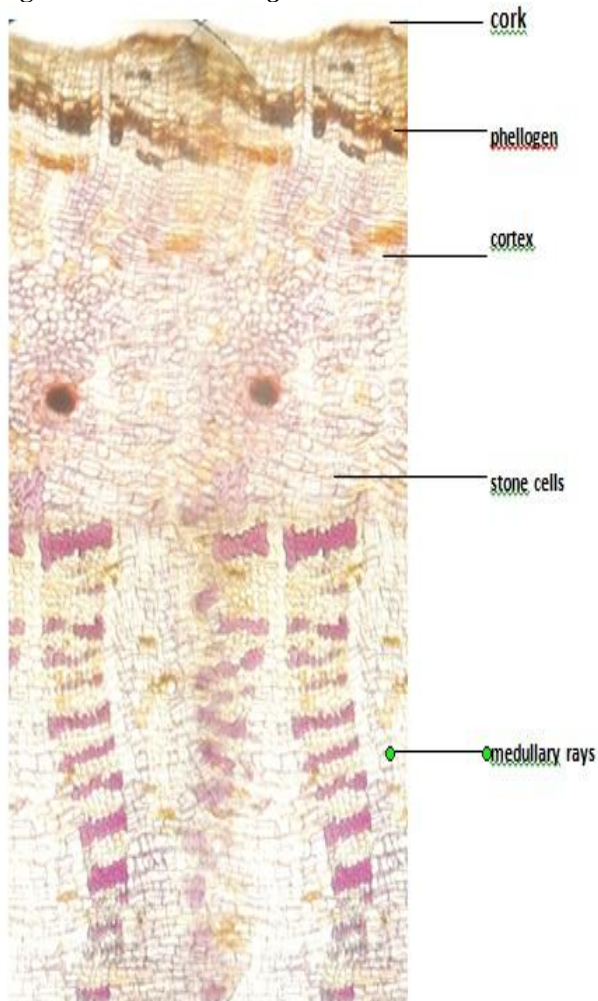


Fig 3. powder microscopy

A: parenchyma



B: fibres & brown matter



C: Starch grains

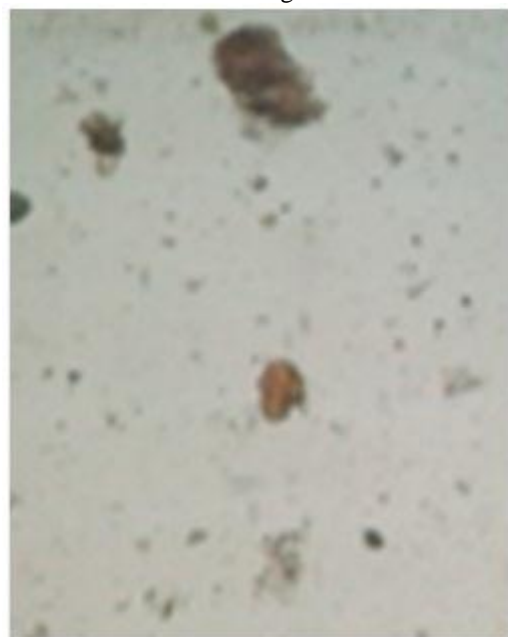


Table 1. Physicochemical parameters

Sample Identity	Moisture Content %	Total Ash %	Acid insoluble ash %	Water Soluble ash %	Water soluble Extractive value%	Alcohol soluble Extractive value%
Stem bark	8	6	0.25	1.94	9.70	11

ACKNOWLEDGEMENT

The authors would like to express their sincere thanks to Dr. Samir sir for the guidelines of my work and to my college to provide all necessary facilities to carry out

this research work. We are grateful to college of pharmacy, for giving all encouragement of valuable support to carry out this work.

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