

A PHARMACOGNOSTICAL STUDY ON *CAESALPINIA PULCHERRIMA* LINN

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ABSTRACT

The ancient and divine sutras of *Ayurveda* always let us to move in a path of holistic care and research in the field of *Ayurveda* as *Acharya Charaka*^[1] said in *Sutrasthana* 26 “there is no substance or material in this world is without containing any medicinal properties” But still there are so many *Dravayyas* those are not mentioned in *Ayurveda* pharmacopeia of India. There is a gigantic work left uncompleted yet i.e. to identify such a plants which are in use as folklore practices, Among these a drug named “*Caesalpinia pulcherrima* Linn. “a member of Fabacea family is well known herb in Saurashtra region of Gujarat. As this is very popular among peoples of Saurashtra region as

folklore medicine with name of “*Sandhesharo*” common in gardens as decorative plant and is used in treatment of Asthama, Bronchitis and Cholera still being unexplored.^[2] The present paper focused on pharmacognostic study of the drug to explore the drug scientifically.

KEYWORDS: Pharmacognostic Study, Sandhesharo, Caesalpinia Pulcherrima, Fabacea Saurashtra, Asthama, Bronchitis, Cholera.

INTRODUCTION

Caesalpinia pulcherrima Linn. (Fabaceae), commonly known as “*guletura*” in Hindi^[5] and “*sandhesharo*” in Gujarati, an ornamental plant as well as important medicinal drug found in many parts of India^[2], The herb grows on well drained and light soil, tolerate salt or salinity therefore also good on seaside. Full sunshine is best to grow it and found through out the year.^[5] It is large shrub or a small tree. Branches unarmed or with few small prickles. Leaves 12-15 cm long, pinnae 6-9 pairs. Leaflets, 9-12 pairs 1.2-2.5×0.5-0.9 cm, sessile, oblong, rarely obovate.^[3] Flowers showy red or yellow 8-30 cm long terminal racemes; pods 6-

10.5×1-1.7 cm, broadly linear, flat, glabrescent, seeds 8-10, obvate-oblong smooth, glabrous.^[3] Medicinally the leaves are used as tonic and stimulant^[4]; the roots are astringent, and can be used in the case of cholera; flowers are made into infusion are useful in the treatment of bronchitis and asthma. The pharmacognostical study of leaf, which is one of the important useful part of plant, has not been undertaken yet, therefore its detailed investigation in fresh as well as in powder form was carried out for identification point of view.^[3-4]

MATERIAL AND METHODS

The plant was collected when it was in full bloom in rainy season, from the peripheral places of Jamnagar. The fresh leaves were collected, After that it was washed thoroughly with running water and then used for microscopic investigation and the remaining materials were dried under the shade. 40# powder was prepared and stored in well closed containers away from the light. Free hand sections were taken and observed as such to see their cell contents and then stained with phloroglucinol and hydrochloric acid to observe the lignifications of the cell wall.^[9]

RESULTS

Macroscopy: Leaves are compound, opposite, extipulate, bipinnate, peripinnate, pinnae 6-9 cm, 9-12 pairs of leaflets, subsessile to sessile, elliptical, ovate to obovate, entire, slightly imarginate, reticulate, glabrous, dark green. Odour not distinct; tastesweetish astringent, leaf base pulvinous.

Microscopic Characters: The daigramatic TS of leaf passing through the midrib shows, central, meristele with laminar extensions on both the sides with dorsiventral nature. The detailed TS of midrib shows, a wide ring of schlerenchyma fibers encircling central xylem and phloem in paranchymatous ground tissue while, lamina shows dorsiventral view with upper & lower cuticularised epidermis; underneath the upper epidermis lies mostly one layer of columnar palisade parenchyma & at the lowerside 3-5 layers of spongy paranchymas with papilliosic epidermis. The deposition of prismatic crystals found mostly beside the fibers. Schlerenchyma Epidermal Prepration- E pidermis observed with lower anomocytic & rarely anisocytic stomata, while devoid in upper one.

Rachis: The diagrammatic TS of Rachis is mostly oval in outline, shows central meristele in paranchymatous. tissue. A detailed TS of rachis, shows outer epidermis, followed with wide

cortex and wide ring of schlerenchyma fibres encircling the midline vascular strand as well as the other 3 subsidiary vascular bundles and central spongy parenchymas.

Subrachis: The diagrammatic TS of subrachis is pear shaped in outline shows central spongy parenchymas encircled by wide 2 main vascular bundles & the other small vascular strands. The detailed TS shows, outer epidermis followed with ring of schlerenchyma fibres, 2 main vascular bundles at upper & lower sides and other subsidiary vascular strands & centrally spongy parenchymas. The depositions of prisms found with the fibers through out the sections.

Powder

Organoleptic characters: Course, Pale greenish in colour with sweetish astringent taste and devoid of any odour. The diagnostic characters of the powder shows depositions of prisms found with the fibers through out the sections.

Pictures

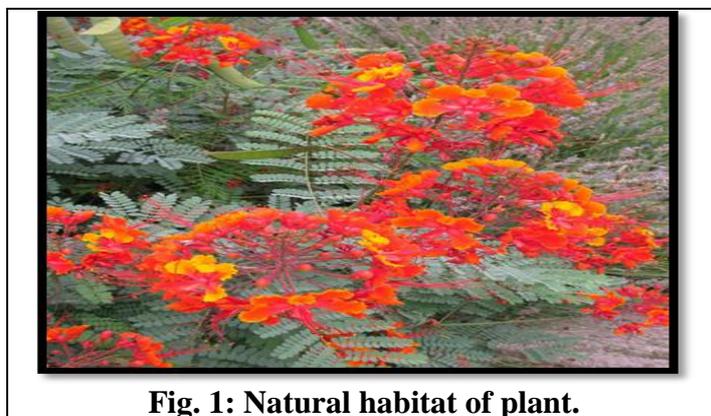


Fig. 1: Natural habitat of plant.

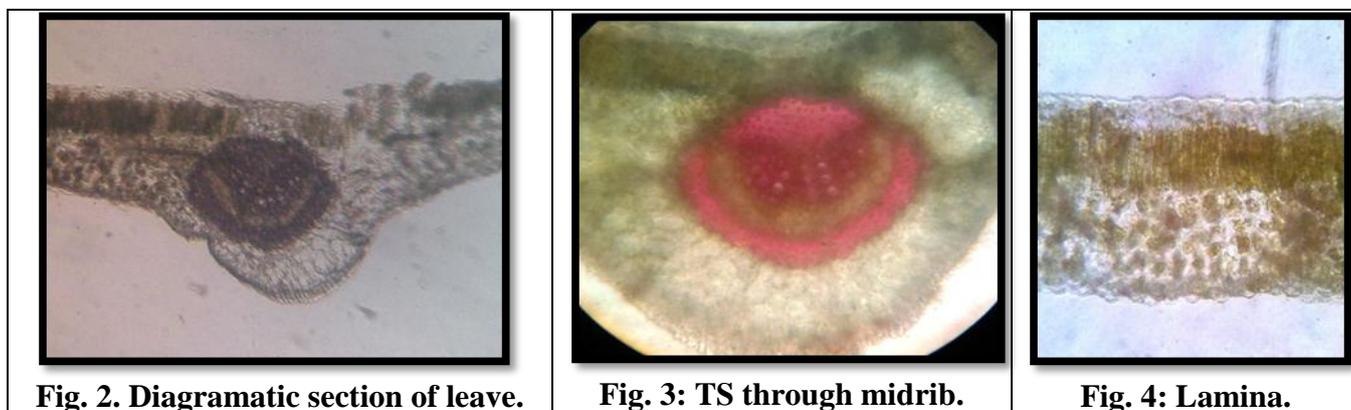


Fig. 2. Diagrammatic section of leaf.

Fig. 3: TS through midrib.

Fig. 4: Lamina.

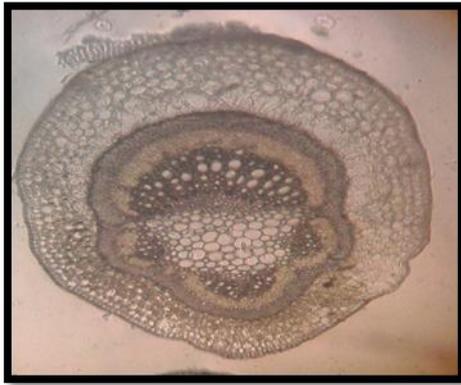


Fig. 5: Rachis.

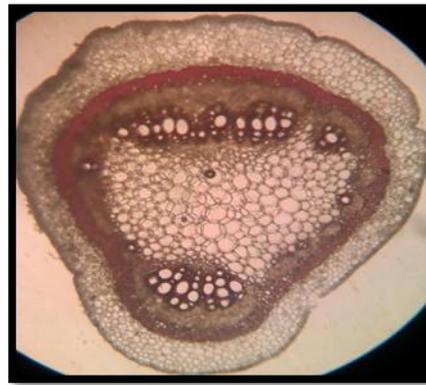
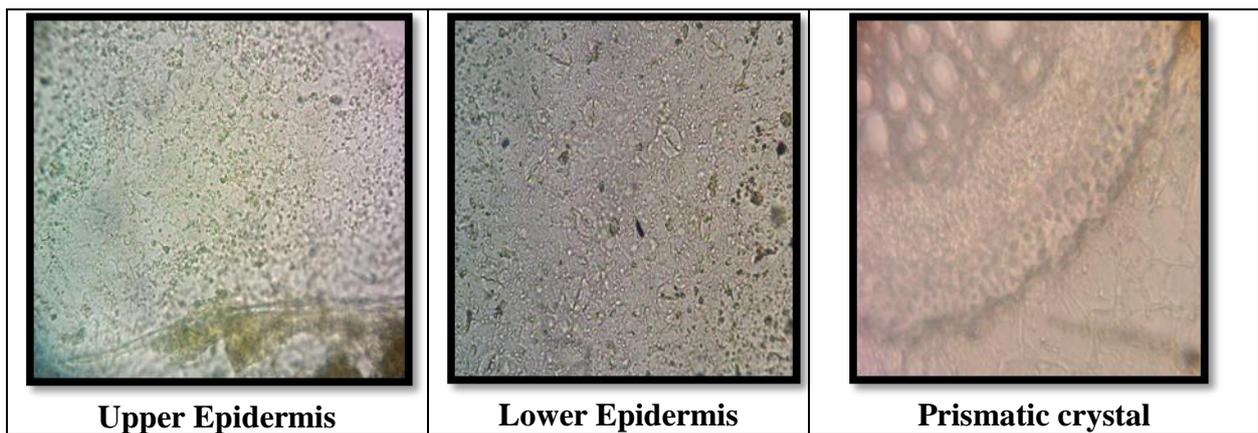
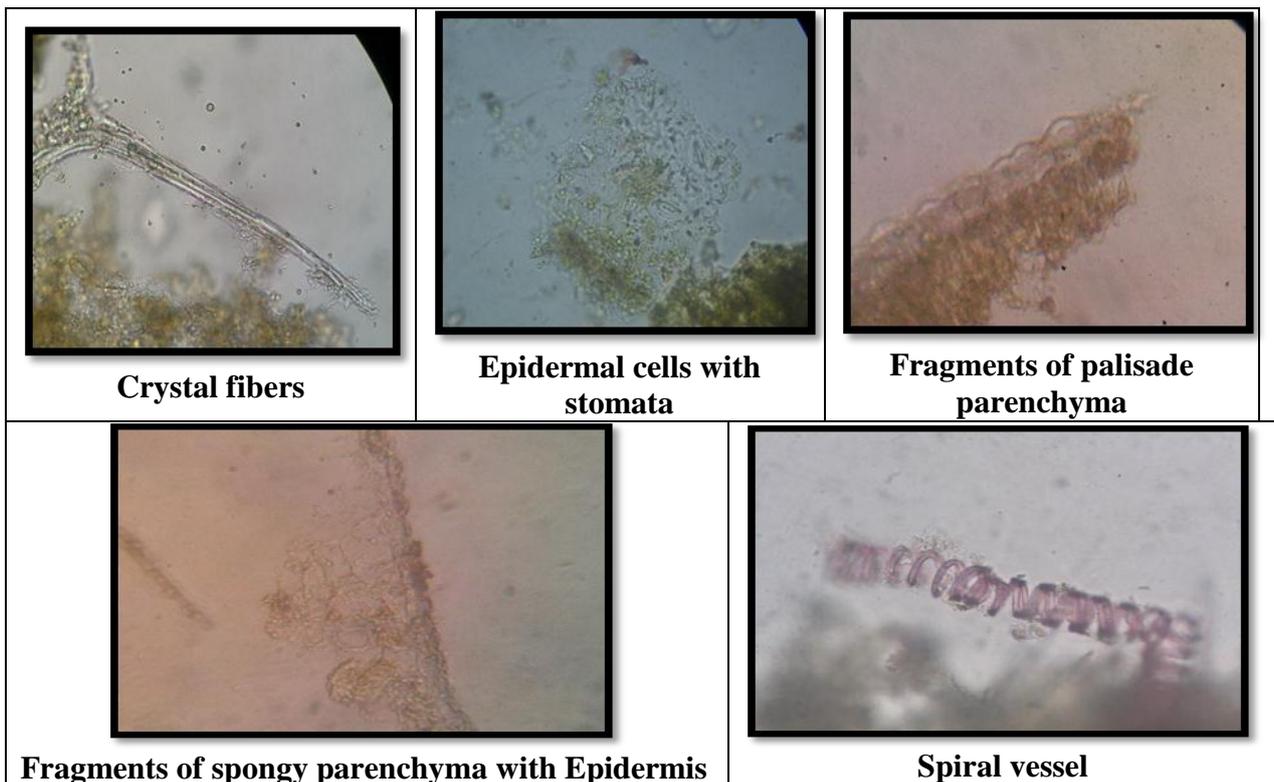


Fig. 6: Sub Rachis.

Surface preparation



Leaf powder character



DISCUSSION

Pharmacognostical and evaluation of *Caesalpinia pulcherrima* Linn. (Fabaceae) leaves provides scientific parameters that will be useful in assessment of identification and authentication of the drug. Prismatic crystals of calcium oxalate, spiral vessels Anomocytic stomata, crystal fibers etc, serves as an important microscopic diagnostic characters for further reference.

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