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Albizia Odoratisima: Review on Morphology, Pharmacological Activity, Physicochemical, Phytochemical Study and Traditional Uses

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Abstract: ***A black Siri's belonging to the Fagaceae family and the Mimosaceae subfamily, Albizia odoratissima Bent (L.F.) is extensively grown in China, India, Bangladesh, Bhutan, Nepal, Myanmar, Thailand, Sri Lanka, and Vietnam. It is considered one of the best trees for nitrogen fixation. Albizia odoratissima Bent is used to treat a variety of diseases and conditions (L.F.). It has been used to treat a wide range of diseases such as antidiabetic action. All the Albizia species, Albizia odoratissima exhibits the best anti-diabetic properties. Historically, many plant parts have been used as remedies for conditions like diabetes, asthma, leprosy, bronchitis, cough, skin diseases, and inflammatory pathologies like burns and ulcers. There have been reports of a variety of pharmacological activity, including antidiabetic, antioxidant, antimicrobial, and anti inflammatory properties, for different prepared extracts of these plants and their parts. Providing a pharmacognostical description, pharmacological activities, therapeutic value, and uses is the aim of the current review study.***

Keywords: ***Traditional Use, Preliminary Phytochemical study, Pharmacognosticalprofile, Plant profile, Pharmacological Activities, Physicochemical properties.***

I. INTRODUCTION

Albizia Odoratissima Bents (L.F.) belongs to the category Fagaceae. This deciduous tree grows swiftly, reaching a diameter of 120–150 cm, grows quickly. It can ascend fifteen to twenty five meters. Not only that, but it is a widespread plant in India, Nepal, Bhutan, Bangladesh, Myanmar, Laos, Thailand, China, Sri Lanka, and Vietnam. Albizia odoratissima has dense, frequently striped heartwood that ranges in color from dark brown to black. It is used in furniture, structural lumber, and farming implements. It becomes shiny and performs nicely over time**[1][2].** Every portion of the plant exhibits depressive and anxious behaviors. The flower head contains diuretic, anthelmintic , sedative, oxytocin , and digestive properties. The stem portion is mostly used to treat diabetes and contains analgesics, stimulants, swelling, injuries, abscesses, diuretics, and anthelmintics**[3]**. Albizia odoratissima trees yield dead and damaged branches of shade trees, which constitute a substantial fuel supply. The gum produced by the tree is insoluble and is used as an extender when mixed with other gums. Albizia odoratissima leaves provide great cattle fodder, and monkeys consume the pods**[3]**. Because of its deep root system, which reduces soil erosion, the tree was planted with the intention of preserving soil. There are no published pharmacogenomic or preliminary phytochemical investigations on this plant's leaf portio**[4]**.

II. PLANT PROFILE

A. Albizia Odoratissima

1) The name of the plant: Albizia odoratissima Bents (L. F)
2) Biological source: It contains dries seeds of Albizia. English name : - Ceylon rosewood
3) Common name: Black Sirius, Fragrant Albania.
4) Family: Fagaceae-Mimosoideae.

Fig: 1 Albizia Odoratissima plant

III. MORPHOLOGY

The Tree of Albizia odoratissima Bent (L. F) is a fast-growing deciduous tree and the Tree has different parts which have different morphological characters. The Parts of a plant consist of root, stem, flower, leaves, and seeds**[5][6]**.

A. Leaves

The leaves are definitely complex, with three to nine pairs of pinnate and roughly ten to thirty pairs of pinnules. Pinnate is 2?8 Pairs, opposing, even pinnate, 5-13 Cm long; Racist is 20-30 cm long, stout, grooved above, brown pubescent, with a gland at the base. Bipinnate, alternate, stipulate leaves are stipple free, lateral, and caduceus[7] .

Fig:2 Albizia Odoratissima leaves

B. Flower

The fragrant blossoms are seen as huge clusters of terminals that become pale orange and white as they wither. Each head has 10 to 15 dimorphic, fragrant, pale yellowish white flowers **[7]**.

Fig :2 Albizia Odoratissima flower

C. Seeds

The seed or beans are thin, flattened, and dark brown or reddish brown. They are 13–20 cm (5.1–7.9) in length and 2-4 cm (0.79–1.57) in width. Within are 8–12 mature, reddish brown pods, each weighing roughly 0.5g **[8]**.

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Fig: 4 Albizia Odoratissima seeds

IV. PHARMACOLOGICAL ACTIVITIES

A. Antioxidant Activity

The extracts of Albizia odoratissima leaves in hexane, chloroform, ethyl acetate, and methanol were reported for their in vitro antioxidant activity using ferric reducing antioxidant power, hydrogen peroxide, 2,2- amino-bis –(3-ethyl benzothiazoline-6-sulphonic acid) ammonium salt, and 2-diphenyl-1-picrylhydrazyl (DPPH) analyzes**[9][10][11]**.

B. Antidiabetic Activity

The ethanol bark extract of Albizia odoratissima was found to have antidiabetic properties when administered to albino mice at a dose of 250–500 mg/kg body weight over the course of 28 days**[12][13]**.

V. PHYSIOCHEMICAL STUDY

1) *Moisture Content:* A 5g sample was put in an oven set to 150°C to determine the moisture content using the loss on drying approach until a stable weight was attained. The sample that was obtained after drying was utilized to determine the medication sample water or moisture content as a percentage [14][15] .
2) *Total Ash Value:* The Ash value of crude pharmaceuticals determines their purity and quality. Two grams of seed powder were placed within a silica crucible, which was then fired in a furnace at 600˚C until it turned white. Weighting the ash came after it had cooled in a desiccator. The total ash content was determined using the collected sample and was reported as a percentage[14][16].

VI. PRELIMINARY PHYTOCHEMICAL STUDIES

Preliminary phytochemical analyses using established procedures to determine the presence or absence of phytoconstituent such as gum's mucilage, proteins, amino acids, carbohydrates, steroids, saponins, tannins, flavonoids, and phenols**[17][18][19][20][21]**.

A. Tests for Alkaloids

1) Dragendroff's Test

Combine a few drops of the plant extract with 1 milliliter of Dragendroff's reagent. The production of an orange-red precipitate indicates the presence of alkaloids.

a) Wagner's test: To 1-2 ml of the plant extract, add 1 ml of Wagner's reagent. A reddish-brown precipitate that forms and signals the presence of alkaloids[22] .
b) Hager's test: Combine a milliliter of Hager reagent with a few drops of plant extract. Alkaloids are present when a yellow precipitate forms[23].

2) Test for saponins

After diluting 1-2 ml of the extract with distilled water, it was shaking. The continuous generation of foam signifies the existence of saponin.

3) Test for Tannins

The 1-2 ml plant extract was mixed with a few drops of a diluted ferric chloride solution; The dark blue hue that developed suggests the presence of tannins.

VII. TRADITIONAL USES

A. Barks

The conventional method for treating ulcers involves using the bark of Albania odoratissima (L.F.) Bent. In addition to being used to heal ulcers, the plant's bark is also used to treat leprosy. The bark is used externally and for ulcers that don't go away **[24]**. The bark of Albania odoratissima has a methanol extract that exhibits antidiabetic properties. In albino mice given Allan, this extract significantly lowers serum cholesterol, triglyceride levels, alkaline phosphate, and total proteins **[25][12]**.

B. Leaf

To heal ulcers, apply a poultice made from Albania odoratissima leaves. The leaves are applied to coughs**[24,26,27,28]**.

VIII. CONCLUSION

The review presents Albania odoratissima (L. F) Bent pharmacogenomic profile, phytochemical studies, pharmacological activities, and medicinal uses (Fagaceae). Around the world, Albania odoratissima (L.F.) Benthic is used to cure a variety of illnesses, including leprosy, diabetes, ulcers, and coughs. With antidiabetic, antiulcer, antioxidant, and antimicrobial properties, this plant is significant for medical use. Plant identification is aided by phytochemical analysis and pharmacognostical profiling.

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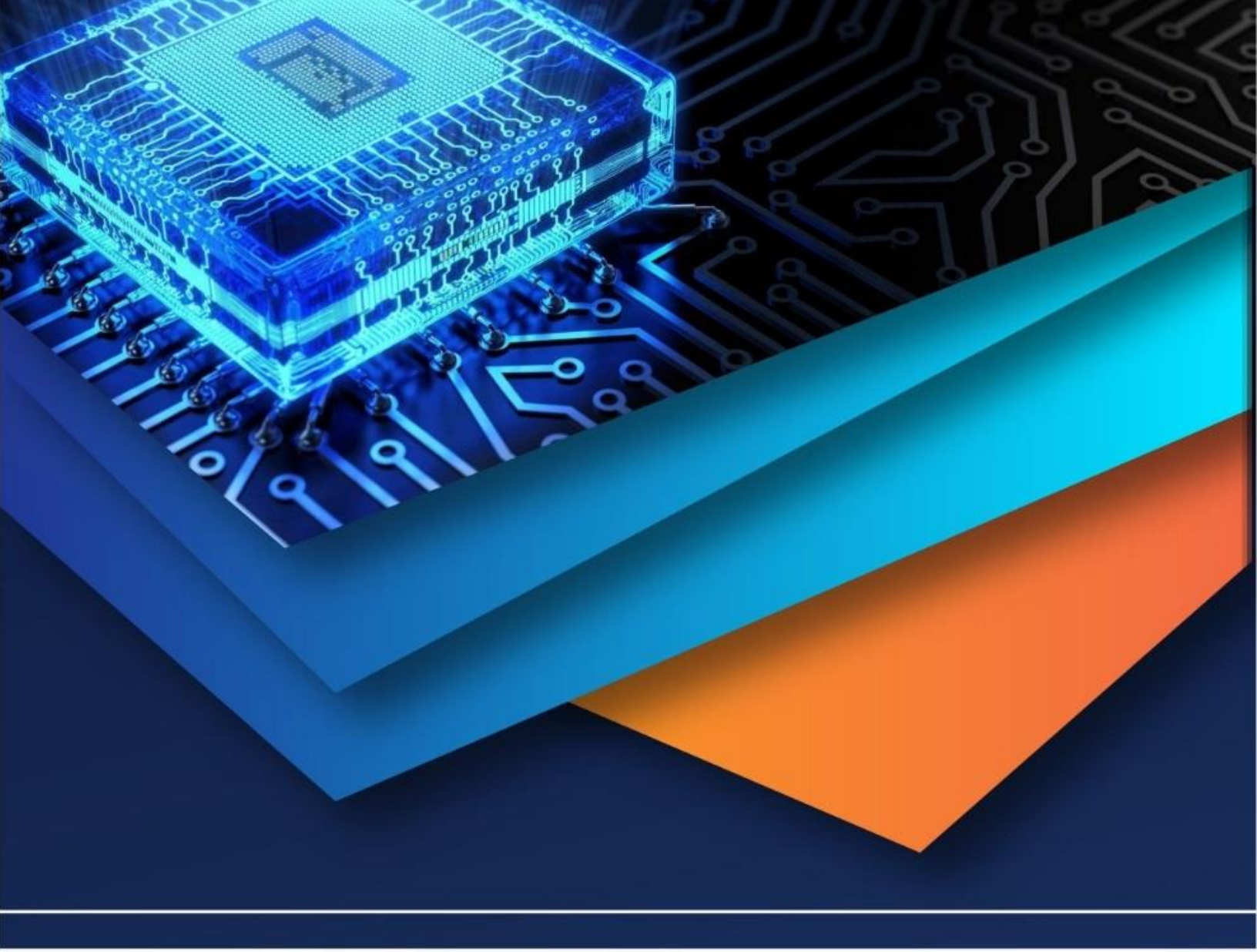

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