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Pithecellobium dulce: A Promising Plant for Future Medicine

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Pithecellobium Dulce (Roxb.) Benth is one of the traditional medicinal herbs whose pharmacological qualities have yet to be thoroughly studied. Species of *Pithecellobium*, belonging to the Mimosoideae subfamily and the Leguminosae family, are distributed throughout the tropics, primarily in Asia and America. (Among these, *P. dulce*, an evergreen tree with prickly leaves, can grow to a height of eighteen meters, making it one of the most recognized species. The herb is said to be used as a folk remedy for toothache, gastric ulcers, leprosy, and earaches and known to have the antibacterial and anti-inflammatory potential. Antidiabetic extracts from the root of the *P. Dulce* plant have shown potential antibacterial effects against *Staphylococcus aureus*, *Klebsiella pneumoniae*, and *Enterobacter aerogenes*.

P. Dulce works as Antiseptic, Lightens Skin, Prevents Hair Loss, Treats Oily Scalp, Aids Weight Loss, Good for Pregnant Women, Treat Biliary Disorders, Treats Fever, Cures Malaria, Treats Jaundice, Regulates Blood Circulation, Controls Blood Sugar Levels, Boosts Immune System, Relieves Inflammation, Cures Mouth Ulcers, Prevents Cancer, Eliminates pigmentation, Cures Acne and Pimples, Removes Dark Spot, Natural Skin Moisturizer, Used to treat Venereal diseases (sexually Transmitted Infection). Leaves - Remedy for indigestion, Bark - Curative for bowel movement/constipation, Manila tamarind is also prescribed for diabetics, which is rich in Vitamin C which contributes to the antioxidant property, Vitamin E - contributes to aging, Vitamin B1 - helps to nourish the nerves and the brain, Vitamin B2 - contributes to the skin, nails and hair health, Vitamin B3 (niacin) - contributes to decrease levels of cholesterol, Calcium- helps to give a boost to bones and enamel, Phosphorus - contributes to the expansion and restoration of body, Iron - contributes to the prevention of fatigue of the body (Sneha et al., 2020).



Traditional Application

Different parts of the *P. dulce* tree have been used for various purposes. Generally, it is used as an ornamental tree or to provide shade. The main branches of the tree are often used for cabin construction poles because of their strength, toughness and flexibility, as well as being easy to work with and ending in a smooth surface. The entire tree is sometimes used for making hedges (demarcation), protecting small crops from high winds, and for agroforestry on atolls. The small branches are less attractive for certain jobs, so they are usually used for

firewood or fences or disposed of as waste. The tree has been used as a fodder for various animals and some species of insects and birds feed on its fruits. Also, the fruit is usually consumed toasted or fresh with the seeds, as a dietary supplement owing to its high nutritional value. The pulp together with the seeds are used to make sweet or acidic drinks similar to lemonade, whereas the seed alone is used to make dishes such as curry. For example, the leaves have been used as a remedy for earache, leprosy, peptic ulcer, intestinal disorders and toothache, and as a treatment to decrease seizures. In addition, the leaves have antidiabetic and emollient properties. The leaves can be cut into strips to treat venereal sores. The extract of the leaves is used to treat gallbladder ailments and to prevent miscarriage. From the bark of the *P. dulce* tree, infusions can be prepared to combat dysentery, fever, dermatitis, gum ailments, toothache and hemorrhages and for ocular inflammation. Diarrhea and constipation can be treated with the extract of the bark. The tannin from the bark and the seeds is extracted to carry out softening in leather tanning. Furthermore, the seed has been used as a treatment to combat and heal ulcers. In addition, the oil extracted from the seed is edible and can be used to make soap (Aleman *et al.*, 2024).

Advantages

Works as antiseptic, lightens skin, prevents hair loss, treats oily scalp, aids weight loss, good for pregnant women, treat bilious disorders, treats fever, cures malaria, treats jaundice, regulates blood circulation, controls blood sugar levels, boosts immune system, relieves inflammation, cures mouth ulcers, prevents cancer, eliminates pigmentation

Disadvantages

Excessive consumption of the seeds or extracts may produce toxic effects at high doses. A toxicity study conducted by Megala and Geetha (2012) showed that prolonged intake of hydroalcoholic fruit extract could cause mild toxicological changes in experimental animals when used in higher concentrations. The study emphasized that although the plant has therapeutic potential, safe dosage is important because overconsumption may affect liver and kidney function. In addition, the plant contains tannins, saponins, and other antinutritional compounds that may interfere with nutrient absorption if consumed excessively. Some reports also mention the presence of sharp thorns on the tree and possible allergic or gastrointestinal irritation in sensitive individuals. Therefore, proper processing and moderate consumption are recommended before using it as a medicinal or functional food ingredient.

Conclusion

Pithecellobium dulce (Roxb.) Benth is an underutilized medicinal plant with significant therapeutic potential. Scientific studies have demonstrated its antioxidant, anti-inflammatory, antimicrobial, antidiabetic, and hepatoprotective properties, supporting many of its traditional medicinal uses. Toxicological investigations have also indicated the relative safety of its fruit extracts when used appropriately. Beyond its medicinal value, the plant offers ecological and economic benefits, making it a sustainable resource for future health and bioenergy applications. Although current findings are promising, further clinical studies and phytochemical investigations are required to identify its active compounds and establish its efficacy in human health. With continued research, *Pithecellobium dulce* has the potential to emerge as an important natural source for the development of future medicines and health-promoting products.

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