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International Journal For Research in  
Applied Science and Engineering Technology



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# **INTERNATIONAL JOURNAL FOR RESEARCH**

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

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**Volume: 8      Issue: IV      Month of publication: April 2020**

**DOI:**

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# A Review on Medicinal Role of Jangal Jalebi (Pithecellobium Dulce)

Jacob Vincent<sup>1</sup>, N. Chandra Lekha<sup>3</sup>, V. Parthiban<sup>4</sup>

<sup>1</sup>Assistant Professor, Dept. of Chemistry, Kamaraj College, Tuticorin

<sup>1</sup>Reg.No.11929, Department of Chemistry, Kamaraj College, Affiliated to Manonmaniam Sundaranar University, Thoothukudi, Tamil Nadu, India

<sup>3</sup>Assistant Professor, Department of Chemistry, Kamaraj College, Tuticorin

<sup>4</sup>Reg No: 19112102032001, Department of Chemistry, Kamaraj College, Affiliated to Manonmaniam Sundaranar University, Thoothukudi, Tamil Nadu, India

**Abstract:** *Pithecellobium dulce* is a medium evaluated sharp tree upto 18m stature, local of tropical America and developed all through India. It is known as 'Vilayati Babul' in Hindi and 'Kodukkapuli' in Tamil. The bark of the plant is accounted for to be utilized as astringent in looseness of the bowels, antipyretics and is likewise helpful in dermatitis and eye aggravation. The leaves have been accounted for to groups astringent, emollient, abortifacient and antidiabetic properties. The availability of steroids, saponins, lipids, phospholipids, glycosides, glycolipids and polysaccharides have been accounted for in the seeds. The bark contains 37% of tannins of catechol type. Quercetin, kaempferol, dulcitol and afezilin have been revealed from the leaves. Roots have been accounted for to have estrogenic action. The current examination was centered on the therapeutic job of *Pithecellobium dulce*.

**Keywords:** *Pithecellobium dulce*, treatment for constipation, fever, sore throat, anti-bacterial, abortifacient

## I. INTRODUCTION

*P. dulce* is one of the recognizable species, normally alluded as manila tamarind, as its harsh taste takes after tamarind. The nonexclusive name is gotten from the Greek word as 'Pithekos' which means a chimp and lobos alluding to a unit and the animal categories name as 'dulce' in Latin methods sweet in inference to the consumable mash of the case. Due to the likeness of the natural products to the Indian sweet 'jalebi', the plant additionally is given the name 'jungli jalebi' [1]. The bark and mash of Manila Tamarind is utilized as a conventional cure against gumailments, toothache, and discharge. Bark remove is additionally utilized against looseness of the bowels, the runs, and stoppage of stools [2].

A concentrate of leaves is utilized for nerve bladder illnesses and to forestall miscarriage. Seeds when grounds are utilized to wash down ulcers. Various examinations have been performed on against oxidant, calming, hostile to diabetic, hostile to malignant growth properties of Manila tamarind. It gives help from torment, skin inflammation, fever, chilly, sore throat, pigmentation, skin break out and pimples.

Today, purchasers are getting progressively aware of the wellbeing and dietary parts of their nourishment container. There is inclination to keep away from synthetic substances and engineered nourishments and inclination for sustenance through regular assets. Different looks into have announced helpful and nutritive estimation of locally accessible natural products which are lesser known and can fulfill the requests of the wellbeing cognizant purchasers.

Subsequently, there is a need to pack look into endeavors in enhancement and promotion of such underutilized natural product crops. This examination was along these lines under taken with a target to look at the product of Jangal jalebi for its proximate supplement sythesis and decide impact of preparing, for example whitening. This work has given fundamental data and has likewise given premise to their more extensive use.

### A. Scientific Detail

- 1) Kingdom: Plantaceae
- 2) Order: Fabales
- 3) Family: Leguminasae
- 4) Genus: *Pithecellobium*
- 5) Species: *dulce*

### B. Biological Source

- 1) Botanical Name: *Pithecellobium dulce*
- 2) Family Name: Leguminosae
- 3) Parts Used: Bark, leaves, seeds, flowers, pulp

### C. Common Names [3]

- 1) Hindi: Vilayati imli, Jungli jilebi
- 2) Marathi: Ingraji chinch
- 3) Tamil: KodukkaPuli
- 4) English: Manila Tamarind, Monkey pod, Madras thorn

## II. CHEMICAL CONSTITUENTS

The lists of phytochemical constitutions and their structures are shown in Table 1

Table 1. List of bioactive compounds reported in *Pithecellobium dulce*.

S. No	Phytochemical name	Molecular formula	Molecular weight (g/mol)	Part of the plant	Reference
1	Pitheduloside A	C <sub>41</sub> H <sub>66</sub> O <sub>13</sub>	766.96	Seeds	[3]
2	Pitheduloside B	C <sub>46</sub> H <sub>74</sub> O <sub>16</sub>	883.08	Seeds	
3	Pitheduloside C	C <sub>46</sub> H <sub>74</sub> O <sub>16</sub>	883.08	Seeds	
4	Pitheduloside D	C <sub>46</sub> H <sub>74</sub> O <sub>17</sub>	899.08	Seeds	
5	Pitheduloside E	C <sub>46</sub> H <sub>74</sub> O <sub>17</sub>	899.08	Seeds	
6	Pitheduloside F	C <sub>52</sub> H <sub>84</sub> O <sub>21</sub>	1045.22	Seeds	
7	Pitheduloside G	C <sub>52</sub> H <sub>84</sub> O <sub>21</sub>	1045.22	Seeds	
8	Pitheduloside H	C <sub>100</sub> H <sub>158</sub> O <sub>49</sub>	2144.31	Seeds	[4]
9	Pitheduloside I	C <sub>30</sub> H <sub>48</sub> O <sub>5</sub>	488.69	Seeds	
10	Pitheduloside J	C <sub>30</sub> H <sub>48</sub> O <sub>5</sub>	488.69	Seeds	
11	Pitheduloside K	C <sub>52</sub> H <sub>84</sub> O <sub>22</sub>	1061.21	Seeds	
12	Octacosanol	C <sub>28</sub> H <sub>58</sub> O	410.76	Leaves	[5]
17	Pithogenin	C <sub>28</sub> H <sub>44</sub> O <sub>4</sub>	444.62	Seeds	[6]
18	Ellagic acid	C <sub>14</sub> H <sub>6</sub> O <sub>8</sub>	302.19	Fruits	[7]
19	Gallic acid	C <sub>7</sub> H <sub>6</sub> O <sub>5</sub>	170.12	Fruits	
20	Mandelic acid	C <sub>8</sub> H <sub>8</sub> O <sub>3</sub>	152.14	Fruits	
21	Ferulic acid	C <sub>10</sub> H <sup>10</sup> O <sub>4</sub>	194.18	Fruits	
22	Vanillic acid	C <sub>8</sub> H <sub>8</sub> O <sub>4</sub>	168.14	Fruits	
23	Coumaric acid	C <sub>9</sub> H <sub>8</sub> O <sub>3</sub>	164.16	Fruits	
24	Rutin	C <sub>27</sub> H <sub>30</sub> O <sub>16</sub>	610.52	Fruits	
25	Naringin	C <sub>27</sub> H <sub>32</sub> O <sub>14</sub>	580.54	Fruits	
26	Daidzein	C <sub>15</sub> H <sub>10</sub> O <sub>4</sub>	254.23	Fruits	
27	Dulcitol	C <sub>6</sub> H <sub>14</sub> O <sub>6</sub>	182.17	Leaves	
28	Quercetin	C <sub>15</sub> H <sub>10</sub> O <sub>7</sub>	302.23	Leaves, fruits, fruit peel	
29	Stigmasterol	C <sub>29</sub> H <sub>48</sub> O	412.69	Seeds, fruit peel	[8]

### III. MEDICINAL USES

The lists of medicinal uses are shown in Table 2.

S. No	Biological activity	Part of the plant	Extraction	Reference
1.	Adultical	Leaf and seed		
2.	Antidiabetic	Seed		
3.	Hypolipidemic	Seed		
4.	Anti-oxidant	Seed, Wood bark, leaf,	Methanol, acetone,	
		Fruits	Aqueous, hydro alcoholic	
5.	H <sup>+</sup> , K <sup>+</sup> -ATPase inhibition	Fruits	Aqueous, hydro alcoholic	[9]
	Anti-ulcer	Fruits	Hydro alcoholic	[10]
6.	Anti- venom	Bark	Hexane	[11]
7.	Nephroprotective	Fruit	Aqueous	[12]
8.	Anti-diarrheal	Leaves	Ethanol	[13]

- 1) *Antioxidant*: Study of the aqueous extract of *Pithecellobium dulce* leaves revealed phenolics including flavonoids and showed potent free radical scavenging activity [14, 15].
- 2) *Anti-Inflammatory / Antibacterial*: Study of the fresh flowers of *Pithecellobium dulce* yielded a glycoside quercetin. The activity of the flavonol glycoside confirmed its anti-inflammatory and antibacterial properties [16, 17]
- 3) *Hypolipidemic*: Study evaluated the anti-hyperlipidemic activity of an aqueous extract of leaves against triton induced hyperlipidemia in rats. Results showed lipid effects with a decrease in total serum cholesterol, LDL, and an increase in serum HDL cholesterol level. [18]
- 4) *Hepato Protective*: Study of an aqueous extract of *P. dulce* in a murine model showed hepato protection against CCl<sub>4</sub>-induced oxidative impairments probably through its anti oxidative property. Results were supported by histological findings [19].
- 5) *Larvicidal & Ovicidal against Mosquito Vectors*: Study evaluated various extracts of *P. dulce* for larvicidal and ovicidal potential against mosquito vectors, *Anopheles stephensi* and *Aedesaegypti*. All leaf and seed extracts showed moderate larvicidal and ovicidal effects; however, the methanol extract of leaf showed the highest larval activity. Results suggest the seed and leaf extracts have potential as an eco-friendly option for mosquito vector control [20].

### IV CONCLUSION

*Jangal jalebi* an underutilized edible fruit was evaluated for its nutritional composition. The fruit contained considerable amount of protein and carbohydrate and can be looked at as an alternative food source for human consumption.

### REFERENCES

- [1] Nadkarni, K.M. Indian Materia Medica, 3<sup>rd</sup> Rev Edition 1982.
- [2] <http://www.stuartxchange.com/Kamatsile.html>
- [3] Nigam SK, Misra G, Uddin R, Yoshikawa K, Kawamoto M, Arihara S. Pitheculosides A-G, Oleanane glycosides from *Pithecellobium dulce*. *Phytochem*, 1996; 44:1329–34.
- [4] Yoshikawa K, Suzuki Y, Tanaka M, Arihara S, Nigam SK. Three acylated saponins and a related compound from *Pithecellobium dulce*. *J Nat Prod*, 1997; 60:1269–74.
- [5] Nigam SK, Mitra CR. *Pithecellobium dulce*. V. Chemistry of the seed saponin and constituents of the leaves. *Planta Med*, 1970; 18:44–50.
- [6] Nigam SK, Gupta RK, Mitra CR. *Pithecellobium dulce*. I. Isolation and characterization of the constituents of the legume. *J Pharm Sci*, 1962; 52:459–62.
- [7] Megala J, Geetha A. Free radical- scavenging and H<sup>+</sup>, K<sup>+</sup>- ATPase inhibition activities of *Pithecellobium dulce*. *Food Chem*, 2009; 121:1120–8.
- [8] Sukantha TA, Subashini KS. Isolation and characterization of secondary metabolites from *Pithecellobium dulce* benth fruit peel. *Int J Pharm Pharm Sci*, 2015; 7:199–203
- [9] Megala J, Geetha A. Free radical- scavenging and H<sup>+</sup>, K<sup>+</sup>- ATPase inhibition activities of *Pithecellobium dulce*. *Food Chem*, 2009; 121:1120–8.
- [10] Megala J, Geetha A. Antiulcerogenic activity of hydroalcoholic fruit extract of *Pithecellobium dulce* in different experimental ulcer models in rats. *J of Ethnopharmacol*, 2012; 142:415–21.
- [11] Pithayanukul P, Ruenraroengsak P, Bavovada R, Pakmanee N, Suttisri R, Saen-oon S. Inhibition of *Naja kaouthia* venom activities by plant polyphenols. *J Ethnopharmacol*, 2005; 97:527–33.



- [12] Pal PB, Pal S, Manna P, Sil PC. Traditional extract of *Pithecellobium dulce* fruits protects mice against CCl<sub>4</sub> induced renal oxidative impairment and necrotic cell death. *Pathophysiology*, 2012; 19:101–14.
- [13] Rashid MH, Biswas SU, Abdullah-AL-Mamun MO, huque A, Bhuiyan JR. Phytochemical screening and analgesic, anti-bacterial and cytotoxic activity evaluation of ethanol extract of *Pithecellobium dulce* (Roxb.) benth leaf. *Asian J Pharm Clin Res*, 2015; 8:451–6.
- [14] Watsika Vichaidrt, Panumart Thongyoo. Antioxidant & antibacterial properties of leaf extract of *Pithecellobium Dulce*, available at [www.natpro5.psu.ac.th](http://www.natpro5.psu.ac.th), 66-68.
- [15] Shankar D Katekhaye, Maheshkumae S Kale. Antioxidant & free radical scavenging activity of *Pithecellobium Dulce* (Roxb). Benth wood bark & leaves, free radicals & antioxidants. 2012; 2(3):47-50.
- [16] Atul Selvan S, Muthukumatan P. Analgesic & Antiinflammatory activity of leaf extract of *Pithecellobium Dulce* Benth, *International journal of PharmaTech research*. 2011; 3(1):337-341.
- [17] Hepziban W, Vajida J, Balaji M. Studies on antibacterial activity of *Pithecellobium Dulce* (Roxb.) Benth against food pathogens – Gram negative bacteria. *International journal of novel trends in pharmaceutical science*. 2017;7(3):76-80.
- [18] Sundarajan T, Raj Kumar T et al. Hypolipidemic activity of *Pithecellobium Dulce* Benth. in Triton Wr-1339 Induced Hyperlipidemic Rats. *International Journal of Chemical and Pharmaceutical Sciences*. 2010; 1(2):50-53.
- [19] Kasarla Raju, Jagadeshwar K. Photochemical investigation & hepatoprotective activity of ripe fruits of *Pithecellobium Dulce* in albino rats. *Scholar's academic journal of pharmacy*. 2014; 3(6):449-454.
- [20] Govindarajan Marimuthu, Rajeswary Mohan. Mosquito larvicidal & ovicidal properties of *Pithecellobium Dulce* (Roxb) Benth. (Fabaceae) against *Culex quinque fuscatus* say (Diptera: Culicidae) *Journal of Coastal Life medicine*. 2014; 2(4):308-312



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