



Journal of Medicinal Plants Studies

Dalbergia sissoo - An Important Medical Plant.

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Nature has been provided a good source of medicinal plants for thousands of years and an impressive number of modern drugs have been isolated from those medicinal plants. Various medicinal plants have been used for years in daily life to treat diseases all over the world. The present review is, therefore, an effort to give detailed survey of the literature *Dalbergia sissoo*. The plant is widely growing plant at different parts of country. It is used as traditionally to cure many diseases. The present study reveals the phytochemistry and its applications in treatment of various ailments. The genus consists of 300 species among which 25 species occur in India. The plant is used for analgesic and antipyretic activity.

Keyword: *Dalbergia sissoo*; phytochemistry; analgesic, antipyretic.

1. Introduction

Medicinal plants have been the part and parcel of human society to combat disease since from the human civilization. The earliest description of curative properties of medicinal plants were described in Rigveda (2500-1800 BC), Charak Samhita and Sushruta Samhita. Herbal medicines are still used to cure many diseases and a way of most common forms of therapy widely available throughout the world ^[1]. Herbal medicines are good ways to cure many disease in developing countries. The traditional medicines usually derived from medicinal plants ^[2]. The use of plants as a source of medicines has been inherited and is an important component of the health care system in India also ^[3].

The genus, *Dalbergia*, consists of 300 species out of which nearly 25 species occur in India. Many species of *Dalbergia* are important timber trees, valued for their decorative and fragrant wood, rich in aromatic oils ^[4].

The generic name *Dalbergia* honours the Swedish brothers, Nils and Carl Dalberg, who lived during the 18th century ^[5].

2. Taxonomical classification ^[6]

Kingdom	:	Plantae
Division	:	Magnoliophyta
Class	:	Magnoliopsida
Order	:	Fabales
Family	:	Fabaceae
Sub Family	:	Faboideae
Genus	:	<i>Dalbergia</i>
Species	:	<i>D. sissoo</i>
Scientific Name	:	<i>Dalbergia sissoo</i>

3. Botanical Description

Dalbergia sissoo is a medium to large tree of about 25 meters high with grey yellow trunk, 2-3 meters in diameter. Leaves are leathery, pinnately compound, leaflets are alternate. They are broad, ovate, acuminate, glabrescent, petiolate with fine pointed tip ^[7].

Flowers are whitish to pink, fragrant nearly sessile, they are 5-8 mm long racemes 2.5 - 3.7 cm long in short axillary panicles. It's crown is oval in shape. Pods are oblong, flat, thin, strap like 4-8 cm long and 1 cm in wide with 1-4 seeds.

Seeds are 4-5 mm kidney shaped, thin and flat, light brown. They have long taproot and numerous surface roots which produce suckers. The sapwood is white to pale brown is dark brown in colour. The flowering period is March-May^[8].

4. Geographical Distribution

- **Exotic range:** Afghanistan, Bangladesh, Bhutan, India, Malaysia, Pakistan.
- **Native Range:** Cameroon, Cyprus, Ethiopia, Indonesia, Iraq, Israel, Kenya, Mauritius, Nigeria, Sudan, Tanzania, Thailand, Togo, US, Zimbabwe^[9].

5. Traditional Uses^[10]

Various parts of *Dalbergia sissoo* are traditional used in treating different diseases and are mentioned below.

Bark: Ayurveda describes the bark and wood as bitter, hot and acrid used as aphrodisiac abortifacient expectorant, antihelmintic, antipyretic and diseases of the blood, leucoderma, dysentery.

Seeds: *D. sissoo* oil is used to treat burning and scabies.

Leaves: A decoction of the leaves are given in acute stage of gonorrhoea. Its use in removing pus in urine, as alleviates profuse menstruation. To cure boils and pimples. The leaves extract has been reported to have antipyretic, antihelmintic and analgesic properties of pharmacology.

6. Chemical Constituents^[11]

Leaves: Isoflavone -O- glycoside.

Pods: Mesoinisited, 7 - 0 - methyle tectorigenin and 4'- rhamnoglycoside.

Mature pods: Isocaviumin, tetorigeni dalbergin, caviumin and tanniuns.

Steam bark: Dalberginone, dalbergin methyl dalbergin and dalberichromene.

Form used	Pharmacological Activity
Extract of aerial parts	Showed bronchodilation as well as significant antipyretic, analgesic and estrogen like activities ^[12] .
Leaf Dried	Anti-bacterial, anti protozoal anti-inflammatory activities ^[13] .
Leaf Juice	Used in gonorrhoea ^[14] .
Oil	Shows repellent activity ^[15] .
Wood and active extract of bark.	Ayurvedics: Abortifacient, anthelmintic, antipyretic a phrodisiac, expectorant refrigerant and skin ailments ^[16] . Yunani : Wood useful for blood disorders, scabies eye and nose disorders, burning sensations, scalding urine, stomach problems and syphilis, boils, leprosy and nausea ^[17] .
Wood Paste	Used in wound itches, abscess and vomiting ^[18] .

7. Folk medicine and medicinal uses

Dalbergia sissoo is reported to be a stimulant used in folk medicine and remedies. It is a folk remedy for gonorrhoea and skin ailments. Ayurvedics prescribe the leafy juice for eye ailments, the woody bark paste as anthelmintic, antipyretic and analgesic. The wood is also used in India for boils, leprosy and nausea. The alcohol extract of green branches of aerial parts showed an inhibitory effect on the mobility of rabbit duodenum, pronounced bronchodilation, as well as significant antiinflammatory antipyretic, analgesic and estrogen-like activities. An aqueous extract of wood has been used for the treatment of gonorrhoea in Arabic countries. The species of *Dalbergia* has been reported to have isoflavones, norartocarpotin, stigmasterol and neoflavonoids^[19].

8. Leaves and young shoot uses

The leaves, young shoots and green pods are used as good fodder for livestock and grazing animals; April to May is the best time for the production of high quality fodder. The dry weight of leaves of *D. sissoo* contains up to 24.1% crude protein, 4.9% fat, 26.1% crude fiber and 12.0% ash.

9. Ecological importance

Dalbergia sissoo provides numerous services to environment and agro-forestry. It is used as a

wind break and shelter belt and as a shade tree in intercropping of orchards, mango, tea and coffee plantations. The root system has suckers, it is commonly used for soil-erosion control and soil stabilization along stream and river banks. It is widely used as plant for nitrogen fixation and reforestation. Due to its fragrant flowers and shade, it is planted along the road side and in gardens as an ornamental plant ^[20].

10. List of species of in Dalbergia Genus ^[21-22]

1	(Rosewood) <i>D. abrahamii</i>	26	(Bombay Blackwood) <i>D. latifolia</i>
2	(Burmese Rosewood) <i>D. bariensis</i>	27	(Bois de Rose) <i>D. maritima</i>
3	(Palisander) <i>D. baronii</i>	28	(African Blackwood) <i>D. melanoxylon</i>
4	(Caroba-Brava) <i>D. brasiliensis</i>	29	(Canela-De-Burro) <i>D. miscolobium</i>
5	(Brown's Indian Rosewood) <i>D. brownei</i>	30	(Rosewood) <i>D. mollis</i>
6	(Granadillo) <i>D. calycina</i>	31	(Bejuco De Peseta) <i>D. monetaria</i>
7	(Dalbergia) <i>D. candenatensis</i>	32	(Bahia Rosewood) <i>D. nigra</i>
8	(Jacarand) <i>D. catingicola</i>	33	(Fragrant Rosewood) <i>D. odorifera</i>
9	(Brazilian Kingwood) <i>D. cearensis</i>	34	(Burma Rosewood) <i>D. oliveri</i>
10	(Rose Wood) <i>D. cochinchinensis</i>	35	(Dalbergia) <i>D. palauensis</i>
11	(Granadillo) <i>D. cubilquitzensis</i>	36	(Dalbergia) <i>D. palauensis</i>
12	(Burma Blackwood) <i>D. cultrata</i>	37	(Akar Laka) <i>D. parviflora</i>
13	(Burma Blackwood) <i>D. cultrata</i> var. <i>cultrata</i>	38	(Nambar) <i>D. retusa</i> var. <i>retusa</i>
14	(Bastiao-De-Arruda) <i>D. decipularis</i>	39	(Rabo-De-Guariba) <i>D. riparia</i>
15	(Bejuco De Peseta) <i>D. ecastaphyllum</i>	40	(Malabar Blackwood) <i>D. sissooides</i>
16	(Mussuta) <i>D. elegans</i>	41	(Indian Rosewood) <i>D. sissoo</i>
17	(Jacarand -Rosa) <i>D. foliolosa</i>	42	(Sabuarana) <i>D. spruceana</i>
18	(Jacarandá-Rosa) <i>D. frutescens</i>	43	(Rosewood) <i>D. stevensonii</i>
19	(Pau-De-Estribio) <i>D. frutescens</i> var. <i>frutescens</i>	44	(Ver'nica) <i>D. subcymosa</i>
20	(Jacarand -Rosa) <i>D. frutescens</i> var. <i>tomentosa</i>	45	(Rosewood) <i>D. trichocarpa</i>
21	(Ebano) <i>D. funera</i>	46	(Dalbergia) <i>D. tucurensis</i>
22	(Tripa-De-Galinha) <i>D. gracilis</i>	47	(Heliotropio) <i>D. villosa</i>
23	(Sebastiao-De-Arruda) <i>D. hortensis</i>	48	(Heliotropio) <i>D. villosa</i> var. <i>barretoana</i>
24	(Jacaranda) <i>D. inundata</i>	49	(Rosewood) <i>D. xerophila</i>
25	(Shisham) <i>D. lanceolaria</i>	50	(Yucatan Rosewood) <i>D. yucatensis</i>

11. Conclusion

Compounds obtained from *D. sissoo* like an isoflavone, biochanin is a potent chemotherapeutic cancer preventive agent. Also reported the estrogenic activity from the fresh flowers of *D. sissoo*. Querection was also isolated

in a low yield research is still need to prove these effects ^[23].

In recent years, ethno-medicinal studies has received much attention towards *Dalbergia sissoo*. It possesses various Pharmacological activities to be conducted to investigate the unexploited potential of the plant.

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