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Leucas aspera: FROM WEED TO MEDICINAL HERB

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Abstract: *Weeds are the plants growing where these are not desired and interfering with the intended use of land. A number of weeds have medicinal values of great importance, Leucasaspera is one of them. Leucasaspera is a species within the Leucas genus and the Lamiaceae family distributed throughout India and in the plains of Mauritius, Java and Philippines. It is a small erect, much branched annual herbconsidered as a precious plant for its medicinal value. Steam of the crushed roots is used for inhalation in conditions like nasal congestion, cough, cold, fever and headache. The juice of leaves is used as nasal drops for snake bites.The juice of the flowers can also be used to treat intestinal worms in children. In addition, it has manyantifungal, prostaglandin inhibitory, antioxidant, antimicrobial, antinociceptive and cytotoxic properties.*

Keywords: *Weeds, Leucasaspera, Lamiaceae, Antimicrobial activity, Medicines.*

Introduction: Weeds are the plants growing where these are not desired and interfering with the intended use of land. Weeds in the history of agriculture have been a mixed blessing. A number of weeds have medicinal values of great importance, *Leucasaspera* is one of them. *Leucasaspera* is a species within the *Leucas* genus and the Lamiaceae family distributed throughout India and in the plains of Mauritius, Java and Philippines. It is a small erect, much branched annual herbconsidered as a precious plant for its medicinal value.

Common Names

Sanskrit : *Dronapushpi, Chitrapathrika, Chitrakshup*
Punjabi : *Guldor*
Gujarati : *Kulnnphul*
Bengali : *Darunaphula, Hulkasha*
Hindi : *Gomamadhupati*
Telugu : *Thummichittu*
Sindhi : *Kubo*
Maharashtra : *Bahuphul*

Plant Botany: *Leucasaspera* is an annual, branched, herb erecting to a height of 15-60 cm with stout and hispid acutely quadrangular stem and branches. Leaves are sub-sessile or shortly petiolate, linear or linearly lanceolate, obtuse, pubescent up to 8.0 cm long and 1.25 cm broad, with entire or crenate margin; petiole 2.5-6 mm long; flowers white, sessile small, in dense terminal or axillary whorls; bracts 6 mm long, linear, acute, bristle-tipped, ciliate with long slender hairs; calyx variable, tubular, 8-13 mm long; tube curved, contracted above the nutlets, the lower half usually glabrous and membranous, the upper half ribbed and hispid; mouth small, very oblique, not villous, the upper part produced forward; teeth small, triangular, bristle-tipped, ciliate, the upper tooth being the largest. Corolla 1 cm long; tube 5 mm long and pubescent above, annulate in the middle; upper lip 3 mm long, densely white-woolly; lower lip about twice as long, the middle lobe obviate, rounded, the lateral lobes small, subacute. Fruit nutlets, 2.5 mm long, oblong, brown, smooth, inner face angular and outer face rounded [1,2].

Medicinal Values: Traditionally, *Leucasaspera* is in use for many remedies in various forms. The whole plant parts are suggested for curing a number of diseases.

Table.1: Trditional uses of *Leucasaspera* [3]

Species	Part	Mode	Indications	Country
L. aspera	Leaf	Leaf extract stored overnight in hollow chilly fruit case	Madras eye conditions [4]	India
	Root	Paste	Antidote of snakebite, in fever, headache and insect-stings [5]	India
	Leaf	Warmed leaf juice	Earache and arthritic pain [6]	Bangladesh
	Leaf	Juice instilled into eyes	Burning sensation and redness of eyes [7]	India
	Leaf	Boiled leaves vapours	Inhaled to relieve cough and cold [8]	India
	Leaf	Paste	Skin diseases, dhobi itches and ringworm [9]	India
	Leaf	Crushed leaf	Snake bite, one side headache [10]	India

Antifungal Activity: *In vitro* study of chloroform and ether extracts of *L. aspera* revealed its antifungal activity against *Trichophyton* and *Microsporumgypseum*. The minimum inhibitory concentration was found to be 5mg/mL.*Leucasaspera* had both fungistatic and fungicidal actions [11].

Prostaglandin Inhibitory and Antioxidant Activities: *Leucasaspera* was tested for its prostaglandin (PG) inhibitory and antioxidant activities. The ext. showed both activities, that is, inhibition at 3-4 g/mL against PGE1- and PGE2-induced contractions in guinea pig ileum and a 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging effect. Phytochemical investigation suggested the presence of nectandrin B, meso-dihydroguaiaretic acid, macelignan, acacetin, apigenin 7-O-[6'-O-(p-coumaroyl)-3-D-glucoside], chrysoeriol, apigenin, erythro-2-(4-allyl-2,6-dimethoxyphenoxy)-1-(4-hydroxy-3-methoxyphenyl)propan-1-ol, myristargenol B and machilin C, (-)-chicanine, (7R,8R)- and (75,85)-licarin A [12].

Toxicity Evaluation of Herbal Smoke and Synthetic Mosquito Mat on *Culexquinquefasciatus*: The smoke of leaves of *Vitexnegundo* and *L. aspera* are more toxic to the filarial vector mosquito, Culexquinquefasciatus than the synthetic mosquito mats, which contain 4% d-allethrin [13].

Antimicrobial Activity of *Leucasaspera* Flowers: The methanol extract of *L. aspera* flowers, its fractions, the alkaloidal residue and the expressed flower juice showed good antibacterial activity for methanol extract and methanol fraction with maximum activity for the alkaloidal residue [14].

Antimicrobial Action of Some Essential Oils: The essential oils from *L. aspera* possessed bacteriostatic activity against *Staphylococcus aureus, Vibrio cholerae, Salmonella typhi, Klebsiellaaerogenes, Escherichia coli, Proteus vulgaris, Pseudomonas pyocyanea* and *Dys. Flexneri* [15].

Antinociceptive, Antioxidant and Cytotoxic Activities of Leucasaspera Root: The ethanolic extract was subjected to acetic acid induced writhing inhibition, 1,1-diphenyl-2-picryl hydrazyl (DPPH) free radical scavenging assay and brine shrimp lethality bioassay for screening of antinociceptive, antioxidant and cytotoxic activity, respectively. The ethanolic extract of *L. aspera* root produced significant inhibition in acetic acid induced writhing in mice at the doses of 250 and 500 mg/kg. The extract showed a significant free radical scavenging activity with an IC_{50} of 8 µg/ml. The extract showed significant lethality to brine shrimp [16].

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