



## A REVIEW ON MEDICINAL VALUES OF LEUCAS ASPERA (L.)

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### ABSTRACT

Herbal plants are integral parts of the traditional medicine worldwide and most of the rural and urban population uses herbal plants in many of their regular needs even today. Medicinal plants have been used to cure and treatment of diseases and they find application in food, agriculture, cosmetic and pharmaceutical industry. *Leucas aspera* (L.) is member of family lamiaceae and widely distributed in all parts of India. Conventionally, it is also used as an anti-pyretic and insecticide. *Leucas aspera* (L.) contains various types of medicinally important phytochemicals such as terpenes, sterols, glycosides, alkaloids, flavonoids and its extract shows therapeutic actions like antimicrobial, antioxidant, anti-inflammatory, anticancer, antidiabetic activities. It is being suggested to use as larvicidal, antivenom and phytotoxic agent. A diverse range of bioactive compounds and their promising biological activities raise the significance of medicinal plants and promoted for further research.

**KEYWORD:** *Leucas aspera* (L.), Medicinal plants, Bioactive compounds, Herbal plants.

### INTRODUCTION

Human beings have used plants as medicine for diverse health issues for thousands of years (Kumar & Devanna, 2016) In traditional medicine plants are widely used in different countries (mostly in India) and are a source of various potent and powerful drugs (Srivastava *et al.*, 1996).

Herbal plants are integral parts of traditional medicine worldwide, and most of the rural and urban population uses these plants in many of their regular needs even today (Kumar *et al.*, 2019). Medicinal plants as a group comprise approximately 8000 species and account for around 50% of all the higher flowering plant species of India. Millions of rural households use medicinal plants in a self-help mode. The members of the family Lamiaceae are of great importance as the source of volatile aromatic oils, medicines and ornamentals (Pandey and Mishra, 2008). Over one and a half million practitioners of the Indian System of Medicine in the oral and codified streams use medicinal plants in preventive, promotive and curative applications (Tewari, 2000). According to World Health Organization (WHO), medicinal plants would be the best source to obtain variety of drugs. About 80% of individuals from developed countries use traditional medicines, which has compounds derived from medicinal plants. However, such plants should be investigated to better understand their properties, safety, and efficiency (Arun kumar & Muthuselvam, 2009).

*Leucas aspera* (L.) is one of the herbs found momentous due to its overriding medicinal outcomes. *Leucas aspera*, (L.) a species within the *Leucas* genus and the Lamiaceae family, is an aromatic herb widely distributed in tropical Asia, Africa and grows as a competitive weed in highland crop fields, homesteads, fallow lands and roadsides (Khare, 2007). Many phytochemicals belong to the classes of terpenes, terpenoids, sterols and fatty compounds, glycosides, long-chain compounds, flavonoids, lignans, alkaloids and others were identified and isolated by different extraction methods. (These extracts were being investigated for their biological activities such as antimicrobial, antioxidant, anticancer, phytotoxic, antivenom, thrombolysis, hepatoprotective, anti-inflammatory, analgesic, ant nociceptive, antiulcer, antimalarial, antipyretic and antidiabetic activity. (Ravi Kumar *et al.*, 2012; Sakthivadivel & Daniel, 2008; Antony *et al.*, 2013; Islam *et al.*, 2014.

**Taxonomic Description of *Leucas aspera* (L.)****Fig. 1: *Leucas aspera* (L.)**

*Leucas aspera* (L.) is an annual herb found throughout India as a weed in cultivated fields, wastelands and roadsides. *Leucas aspera* (L.) is an annual, branched, herb erecting to a height of 15-60 cm with quadrangular stem and branches. Leaves are sub-sessile or shortly petiolate, linear or lanceolate, 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. Fruit nutlets, 2.5 mm long, oblong, brown, smooth, inner face angular and outer face rounded. (Kumar & Devanna, 2016; Srivastava *et al.*, 1998; Sabri *et al.*, 2015; Srinivasan *et al.*, 2011).

**Phytochemical compounds & Medicinal Properties of *Leucas aspera* (L.):**

*Leucas aspera* (L.) is a medicinal plant which is traditionally important. Leucas genus has many species like *Leucas cephalote* (L.), *Leucas indica* (L.), *Leucas lanata* (L.), *Leucas lavandulaefolia* (L.), *Leucas martinicensis* (L.), *Leucas mollissima* (L.), *Leucas plukenetii* (L.), *Leucas stelligera* (L.) etc. The bioactive compounds such as diterpenes, lignans, flavonoids, squalene of this plant has many therapeutic values. *Leucas aspera* (L.) plant shows various medicinal activities like antimicrobial, antioxidant, anticancer, phytotoxic, antivenom, thrombolysis, hepatoprotective, anti-inflammatory, antiulcer, analgesic, antinociceptive, antimalarial, antipyretic and antidiabetic activity (Thakur *et al.*, 1987; Harborne *et al.*, 2005; Evans, 2005; Kripa *et al.*, 2010; Gangadharan *et al.*, 2014; Augustine *et al.*, 2014;).

*Leucas aspera* (L.) has the bioactive compounds compounds such Flavonoids, alkaloids, phenolic acids, stilbenes, lignans, lignin and tannins are phenolic compounds found in plants, which is well known as

scavengers of free radicals that have multiple biological effects, including antioxidant activity (Hartwell *et al.*, 1982). Table 1 shows the presence of various types of bioactive compounds present in *Leucas aspera* (L.) (Harborne *et al.*, 2005; Evans, 2005).

**Table 1: Preliminary phytochemical screening of extracts of *Leucas aspera* (L.).**

Name of constituents	Result
Alkaloids	++
Anthraquinones	--
Fatty acids	++
Steriods	++
Terpenes	++
Glycosides	++
Flavanoids	++
Carbohydrates	++
Tannins	++

(+) presence of bioactive compound & (-) the absence of bioactive compound)

**CONCLUSION**

*Leucas aspera* (L.) is a wild herb or shrub which is having medicinal value to a great extent and is available abundantly in field of India, Bangladesh and also adjoining areas in India. It is easily available at a very low cost. It can be used in crude form as well as in extract form and also in the refined form as a medicine.

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