



A COMPREHNSIVE REVIEW ON MEDICINAL HERB: LEUCAS ZEYLANICA

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ABSTRACT

Many human diseases have been treated with traditional medicines in the past. Plant-based medicines are widely available, inexpensive, safe, and rarely have negative side effects. Peoples and animals can greatly benefit from highly beneficial compounds found in plants, which were the primary sources of food and medicine. A review of *Leucas zeylanica*, also known as Ceylon slitwort, was presented here. It was a perennial, herbaceous, often aromatic, hispid, and tufted plant of the Lamiaceae subfamily Lamioideae. The ancient practices were resembling many modern practices, such as treating pains, inflammation, gout-associated pains, thrombosis, and damage caused by sunlight. Phytochemicals from this plant have been studied for their anti-fungal, anti-oxidant, anti-bacterial, anti-diabetic, larvicidal and anti-helminthic properties, among others. A variety of disease in humans can be treated using these phytochemicals, which require extensive scientific research and commercial in the future. This article provides a comprehensive review of the complete profile of a vital plant, *Leucas zeylanica*.

Key words: *Leucas zeylanica*, traditional medicines, anti-oxidant properties, medicinal herbs

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INTRODUCTION

A wealth of effective and reliable medicinal plants was found in nature, which can be used either in their natural form or chemically modified in order to treat many diseases. Nature has given us medicinal plants, which were of great importance to human health (Rafe MR, *et al.* 2017). Human beings all over the world had used them to treat a wide range of disease. It used to be that plant parts were the only hope for healing a diseased condition before the advancement of medical sciences (Prabhadevi V, *et al.* 2012)

It always the goal of researchers to verify and rationalize traditional practices of natural substances to develop new pharmaceuticals based on scientific evidence. The use of herbs and different drugs derived from plants was widespread throughout the world as traditional medicines, and new natural drugs for many aggressive diseases were becoming more popular every day (Muhammad A. 2014). Researchers have identified phytochemicals in a plant extract that may lead to the development of new lead medicinal compounds. Nearly 70,000 plant species were used for some aspect of primary healthcare by approximately 80% of the world's population, according to the world health organization. A species of the genus *Leucas* containing 80 species, *L.zeylanica* was commonly called Ceylon slitwort. It was usually found in East Africa and Asia, such as India, Bangladesh, Nepal, Srilanka, and china. In the Lamiaceae family, *L.zeylanica* was a plant that grows erectly and can reach a height of 50 cm (Dhar

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AS, et al. 2020). In general, it grows in dry, sunny places such as sea beaches, waste sites, paddy fields and roadside areas. The development and distribution of antibiotic resistant microorganisms prompted researchers to explore plant sources of antimicrobial agents (Chouhan HS, Singh SK. 2011). As a remedy for worms and abdominal pain, it is used to treat colds, toothaches, and rheumatic diseases. As a wound healer, *L.zeylanica* act as vulneraries, stimulants, diaphoretics and anthelmintics. Vertigo, headaches, and itching are treated with poultices made from *Leucas zeylanica*'s leaves.



Figure1: Plant profile

Microscopic characteristics

The trichomes has long lignified and multicellular filaments, anisocytic upper stomata, paracytic lower stomata, absence of starch grains, vascular tissue such as xylem and phloems (Prabhadevi V, et al. 2012).

Phytochemistry of *L.zeylanica*

It has been reported that this genus contains a large number of chemicals. As with other species, *L.zeylanica* may also provide pharmaceutically relevant phytoconstituents. Phytochemical screening of alkaloids, glycosides, tannins, flavonoids, carbohydrates, and steroids has produced positive results for some research groups (Muhammad A. 2014).

Physiochemical characteristics

Various parameters such as LOD, moisture content, ash values, were shown in the table. 1

Table1: Physiochemical characteristics

S. No	Parameters	Values (%w/w)
1	LOD	67.8
2	Moisture content	15
3	Total Ash	33
4	Water soluble ash	7
5	Acid soluble ash	12

Ethnobotanical significance

In addition to treating chronic disease, infections of the eyes and nose, wounds, and sores such as scabies and psoriasis, blended leaves of *Leucas* species were also used in the treatment of scabies and psoriasis (Malik, M. N. H, 2012). Additionally, they were used for making decoctions for treating roundworm infestations and malaria, particularly in children. Indigestion can be treated with a decoction of the whole plant. Poultices made from roots and leaves can be applied to wounds, sores, and itches to treat skin diseases.

Pharmacological importance

Medicinal plants were abundant throughout the world. Thousands of years ago, humans used plants directly or with slight modifications to treat a variety of health issues. Traditional medicine worldwide involves herbal plants, and researchers were more concerned with the environmental, economic, and health benefits of natural chemicals in plants than synthetic chemicals (Jain, D. L, et al. 2010. Numerous phytochemicals were found in herbal plants and were used extensively in many of pharmaceutical industries worldwide. Headaches and colds could be treated with the juice of leaves. Traditionally and ayurvedically, it was effective in treating worm infections. Additionally, a decoction of *L.zeylanica* can protect the human digestive system from the parasite *Enterobius vermicularis*. Medicinal uses for the leaves include wound healing and sedation (Kumar GV & Devanna N. 2016).

Biological significance

Anti-oxidant properties

A number of diseases develop and progress in humans were increasingly associated with oxidative stress, including Parkinsonism, Alzheimer, amyotrophic lateral sclerosis, multiple sclerosis, memory loss, hepatomegaly, nephropathy etc. In the phytochemical analysis of the leaf and whole plant extracts of *L. zeylanica* a variety of phytochemicals were identified (Geethika K & Kumar PS. 2017).

Anti-bacterial properties

In Malaysia, the Kelantanese regularly consume *Corbicula fluminea* as a snack because of its potential to eliminate *E. coli* and *S.aureus*. By using disc diffusion assay, *L.zeylanica* leaf extract was evaluated for its anti-bacterial properties (Rai V, et al. 2005). Based on the results obtained from the study, 70µg/µl of *L.zeylanica* extract produced an inhibition zone of 9.96mm and 13.2mm for *E.coli* and *S. aureus*.

Anti-fungal properties

In agar streaking assays, ethanolic extracts of leaves, stems and seeds of *L. zeylanica* were found to be anti-fungal against *Aspergillus sp.*, *Penicillium sp.*,

Trichoderma sp., *Mucor sp.*, and *Rhizopus sp.* Seed and stem extracts exhibited anti-fungal activity against *Mucor sp.*

Anti-Diabetic properties

The effects of an aqueous extract of leaves of *L. zeylanica* on blood glucose were assessed in diabetic rats induced by alloxan and compared to control rats and anti-diabetic medication (glibenclamide). In alloxan-induced diabetic rats, the extracts of *L. zeylanica* significantly decreased serum glucose and cholesterol levels. When leaf extracts were applied for a prolonged period of time, blood glucose levels consistently decreased. After 10 days of continuous leaf extract treatment, the blood glucose levels of diabetic rats decreased significantly but those of normal rats did not (Davis J. 1994).

Helminthicide properties

Petri dishes containing ethanolic or acetone extracts of leaves of *L. zeylanica* were placed in which earthworms were placed at two different concentrations (10, 20 mg/ml). A timer was kept to note when paralysis or death occurred. A comparison of ethanol extract and acetone extract revealed that ethanol extract had greater anti-helminthic activity. Comparing the ethanol extract to the reference drug albendazole at 20 mg/ml concentration, the earthworms were more sensitive to the ethanol extract (Edeoga HO, et al. 2005). This study evaluated the worm infection potential of a decoction prepared from the *L.*

zeylanica plant, focusing on *Enterobius vermicularis*, a parasite that resides in the human digestive system and was universally prevalent, especially among children. For seven days, 120 ml of a decoction of *L. zeylanica* was administered twice a day to 100 patients with *E. vermicularis* infections. In the remaining fifty patients, 120ml of placebo was given twice a day for 7 days as a control. A decoction of *L. zeylanica* was found to be an efficient, low cost, and indigenous treatment for humans infected with *Enterobius vermicularis* based on the results obtained in this study (Yusuf M, et al. 2007).

CONCLUSION

Leucas zeylanica has been used traditionally for treating a number of ailments of the human race. *Leucas zeylanica* plants contain a variety of phytochemical compounds that are dependent upon the extracting method and solvent used for extraction. Ethanol and methanol were considered to be the most appropriate solvents. In pharmacological and phytochemicals studies, various chemical constituents were identified, including alkaloids, phenolic derivatives, steroidal constituents, flavones, flavanols as well as terpenoids. All of which possess anti-bacterial, anti-fungal, anti-diabetic and anti-helminthic properties. There is a need for further scientific exploration and commercial use of these phytochemicals for the treatment of a variety of disease conditions in humans in the future.

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