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Exploring the Importance of *Vernonia zeylanica:* An Endemic Medicinal Plant for Conservation, through Phytochemical Analysis

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Abstract

Vernonia zeylanica known as "*Kupillay*" in Tamil, "*Pupula*/*Heen botiya*" in Sinhala, an endemic species of Sri Lanka is an important medicinal plant. Its leaves are used specially for skin disease in Indigenous medicine. Similarly, the stems are recommended to be used in the treatment of boils and fractures of bones. This plant has a dense distribution in the dry-wet zone of Sri Lanka. It is a shrub which grows about 1 to 2.5 m tall. Young stems are densely pubescent. It has small leaves with petioles. Flowers are found as 6 to 8 in per capitulum. Recent data reports that the scientific name of *Vernonia zeylanica* has been changed to *Jeffreycia zeylanica* and it was mentioned in the National red list of Sri Lanka (2020), as least concerned. Its anti-inflammatory, anti-proliferative, anti-bacterial and anti-nociceptive activities have been reported previously. There is a strong possibility that this endemic plant of Sri Lanka could possess a lot of useful phytochemicals which are responsible for its pharmacological action. But this has not been scientifically tested yet. The aim of this study was to identify the phytochemicals in the leaves of the *Vernonia zeylanica* and to find out the phytochemicals present in the leaves and to compare them with the pharmacological action mentioned in past research papers. The leaves of *Vernonia zeylanica* were collected from the Kaithady in the Northern Province of Sri Lanka in August 2024 as it a medicinal plant, the leaves are crushed in mortar and pestle without adding water, as mentioned in the traditional method of Indigenous medicine, then sent to the Department of Chemistry, Faculty of Science, University of Jaffna for phytochemical analysis. *Vernonia zeylanica* leaf extract was tested for phytochemicals like alkaloids, flavonoids, phenolic compounds, tannin, glycoside, saponins, terpenoids, reducing sugar, protein and steroids using different test methods for qualitative analysis. The test result revealed that the leaf extract contains phytochemicals like alkaloids, flavonoids, phenolic compounds, tannin, saponins, terpenoids and reducing sugar. The results revealed that the presence of many beneficial phytochemicals justifies its therapeutic action. Such endemic plants may face significant threats such as habitat loss, climate change and invasive species. Conserving endemic plants helps to maintain biodiversity and ecosystem stability. Efforts typically include establishing protected areas, habitat restoration and raising awareness about their importance. Such an important endemic plant should be conserved for future use.

Keywords: *Endemic, Medicinal plant, Vernonia zeylanica, Phytochemical analysis*