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ENDEMIC MEDICINAL PLANTS FOR THE FUTURE: A STUDY ON DISTRIBUTION, PROPAGATION AND CONSERVATION OF ENDEMIC MEDICINAL PLANT SPECIES IN SRI LANKA

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The Sri Lankan traditional medicine system is composed of Ayurveda, Siddha, Unani, and Desiya Chikitsa, and it utilizes a diverse range of plant species owing to their therapeutic potential. The main objective of this study was to establish a comprehensive inventory of endemic medicinal plant species (EMPSs) and to investigate their distribution, propagation, and conservation. Through a meticulous examination of botanical literature and authoritative online resources, an inventory of 184 EMPSs was compiled. Conservation of these plant species is crucial as 129 EMPSs (70%) are highly threatened; 7% critically endangered, 30% endangered, and 33% vulnerable. Mainly, Sri Lanka's legislative framework for biodiversity conservation resides in the Fauna and Flora Protection Ordinance (2009) operates through two principal strategies; the establishment and regulation of Protected Areas (PA) and the listing of Protected Species. This approach ensures the in-situ conservation of EMPSs within the PA. However, relying solely on in-situ conservation is inadequate for ensuring the longevity of EMPSs. The promotion of ex-situ conservation measures becomes imperative to complement these efforts. The findings of this study revealed that 61% of the EMPSs were ex-situ conserved, and the highest conservation efforts were recorded at the Royal Botanical Garden-Peradeniya and the Ayurvedic Herbal Garden-Pinnaduwa. Investigations on optimal propagation method for a specific plant species and the potential extent of its distribution are imperative for ensuring its conservation. The distribution of these EMPSs with respect to different climatic zones of Sri Lanka was analyzed using the software ArcMap (v10.8): distribution analysis revealed that the majority of EMPSs are distributed within Sri Lanka's wet zone, while the lowest species distribution was in the semi-arid and dry zones. Previous records on the propagation of EMPSs were minimal and attempts at in vitro propagation were limited to a very few such as, *Garcinia quaesita*, *Impatiens repens*, and *Osbeckia octandra*. Hence, it becomes crucial to conduct investigations on suitable propagation methods to promote the conservation of EMPSs. This study revealed the current status of EMPSs used in traditional medicine, further providing crucial insights into their conservation.

Keywords: Traditional Medicine, Endemic, Medicinal plant species, conservation, Protected areas