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Potential of Extra Income Generation for the Rural Sector by Medicinal Plant Cultivation**Munugoda K.D.¹, Subasinghe S.M.C.U.P.^{1*}, Hettiarachchi D.S.², Cooray A.T.³, Hapugoda M. D.⁴**¹*Centre for Forestry and Environment, Department of Forestry and Environmental Science, University of Sri Jayewardenepura, Nugegoda, Sri Lanka*²*School of Science, Edith Cowan University, Australia*³*Department of Chemistry, University of Sri Jayewardenepura, Nugegoda, Sri Lanka*⁴*Molecular Medicine Unit, University of Kelaniya, Dalugama, Sri Lanka***upuls@sjp.ac.lk***Abstract**

Sri Lanka is very rich in plant diversity ensuring the supply for resources for local folk remedies and ayurvedic treatments. Among those plants, some bear volatile oils in the leaves with the ability to repel mosquitoes. However, most such plants were underexploited and underutilised. Hence, this study aimed to compile information on plant species which are commonly found in homegardens in Kurunegala district of Sri Lanka and to find strategies to help rural economic development. For this purpose, indigenous knowledge was gathered through interviewing 50 traditional ayurvedic practitioners and 30 subject experts. This survey revealed the availability of 127 volatile oil-bearing plant species with mosquito repellent properties. Those plants were cross-referenced with the IUCN conservation status to eliminate the ones in the high risk categories. Finally, 29 plant species (*Ocimum tenuiflorum* Sub-type Rama, *O. gratissimum*, *Hyptis suaveolens*, *Atalantia ceylanica*, *Citrus aurantifolia*, *Cinnamomum verum*, *Cymbopogon citratus*, *O. tenuiflorum* Sub-type Krishna, *Plectranthus barbatus*, *P. zatarhendi*, *Acronychia pedunculata*, *Ageratum conyzoides*, *Acorus calamus*, *Citrus madurensis*, *Eryngium foetidum*, *Citrus sinensis*, *Citrus reticulata*, *Aegle marmelos*, *Anisomeles indica*, *Vitex negundo*, *Tithonia diversifolia*, *Croton laccifer* L., *Toddalia asiatica*, *Piper betle*, *Clausena indica*, *Ruta chalepensis*, *Limonia acidissima*, *Michelia champaca* and *Evolvulus alsinoides*) were identified out of 123, by following a weighted ranking system based on the priority given by both ayurvedic practitioners and subject experts. Identification of the availability and willingness to supply of those top ranked plant species was tested via a structured questionnaire survey conducted for 80 participants in four villages (Hulugalla, Randenigama, Porawewa and Papolegama) in two agro-ecological regions (IL1 and IL3) of Kurunegala district. Selected 20 households from each village had the land extent equal or greater than 1 acre (0.4 ha). According to the results, *Citrus aurantifolia*, *Citrus sinensis*, *Citrus reticulata*, *Aegle marmelos* and *Ocimum tenuiflorum* Sub-type Rama were the top 5 ranked plant species that were commonly available. Further, this study demonstrated that on an average a family could earn between Rs. 500.00 and Rs. 3,000.00 by selling 1 kg of air-dried leaves. Thus, encouragement of medicinal plant cultivation in rural areas will help to generate financial returns and to conserve these plants in the wild.

Keywords: Mosquito repellence, Volatile oils, Medicinal plants, Rural economy, Indigenous knowledge