

IMPACTS OF CARDAMOM CULTIVATION ON FLORAL DIVERSITY OF SUB MONTANE FORESTS OF KNUCKLES RANGE

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Knuckles Forest Range is a unique ecosystem and extending to 160 km² in Matale and Kandy Districts of Central Province. Together with the landscape and the climate it has resulted a variety of natural vegetation types. Among these, sub montane forests are highly affected by commercial planting of cardamom by villagers and also by large scale companies.

This research was conducted in Riverston area of Knuckles Forest Range. Selective sampling was done in the natural forest and in the areas where the undergrowth is dominated with cardamom. Within the areas, three 20 x 20 m plots were established and following measurements were done; no. of species/area, no. of individuals/area and per species, vertical stratification in the two types of areas. DBH was measured in trees with more than 1m height.

The results depict 48 plant species in natural forest and 31 species in cardamom planted areas, with a high number of genera and families in natural forest. 29 species out of 48 species were only confined to the natural forest areas. Height and diameter distribution patterns were different in two conditions. Species diversity (Shannon's diversity index) was significantly different and it was 1.1300 in natural forest areas and 0.5678 in cardamom plantation. Density of trees (number of stems per ha) also showed such pattern and the values were 6433 and 537 respectively. Dominance of species according to the Importance Value Index (IVI) in the two conditions was also different. Comparison of endemism in two conditions showed 45.83% in natural forest and 29.03% in cardamom plantation.

The results of the present study also provide evidence as to the detrimental effects of cardamom planting on the ecology of the sub montane forests of Knuckles Range.