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Floristic composition of homegarden systems in some villages in northern flank of Dumbara: with a special emphasis on endemic homegarden plant species

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Abstract

A study was carried out in 55 home gardens in six peripheral villages in the Northern flank of Dumbara Conservation Area (Knuckles) from January to April 2012. Two large (10x10 m^2) quadrates and 4 small (1x1 m^2) quadrates were studied in each randomly selected home garden. Individuals ≥ 2 m height and ≥ 1 cm DBH were measured and identification was done on site and further with the help of National Herbarium, Peradeniya.

Total of 1,335 individual woody-perennials, 4,603 herbs were found in 11,000 m^2. 152 woody-perennial species (19 endemic, 44 naturalized exotics, 35 cultivated and 52 timber) under 54 families and 56 herb species (46 medicinal) belonging to 33 families were recorded. Euphorbiaceae was the dominant family with 15 species, followed by Fabaceae (11 species), Anacardiaceae (10 species), Rutaceae (10 species), Myrtaceae (7 species), Rubiaceae (6 species), Arecaceae (6 species), Moraceae (5 species), Sapindaceae (4 species) and Zingiberaceae (4 species). Highest number of plant families (43) was recorded in Pitawala, while the lowest number of plant families recorded in Polommana (24).

Based on the Important Value Index (IVI), the dominance, some species were selected to pay high priority for conservation. According to Shannon diversity values for different villages, Rathninda is the most stable and less disturbed, whereas Polommana is the most unstable and highly disturbed village. There were five endemic Anacardiaceae (56%) species (*Campnosperma zeylanicum, Mangifera zeylanica, Semecarpus coriaceae, Semecarpus nigro-viridis, Semecarpus walkeri*). *Callophyllum trapezifolium, Garcinia quaesita* (Clusiaceae), *Dipterocarpus zelanicus, Shorea hulanidda* (Dipterocarpaceae), *Agrostistachys hookeri, Phyllanthus myrtifolius* (Euphorbiaceae), *Aidia gardneri, Diplospera erythrospora* (Rubiaceae), *Strobilanthes anceps* (Acanthaceae*), Canarium zeylanicum* (Burseraceae), *Diospyros oppositifolia* (Ebanaceae); *Scolopia crassipes* (Flacourtiaceae) and *Pandannus ceylanicas (*Pandanaceae) were the other endemics reported.

Preference of plant to grow in their homegardens was varied from household to household. Most are preferred on *Cocus nucifera* (57%) and 24% of people were interested in timber trees such as *Tectona grandis, Melia azedarach, Swietenia macrophylla* and *Chloroxylon swietenia*. Twelve percent of the studied population was preferred in fruit trees while 5% were interested in some medicinal plants. Preference of this nature indicates that the deprivation of plant diversity in the homegadens in near future. Therefore, people in northern flank of Dumbara area should be encouraged to incorporate multipurpose endemic plants and plants with less IVI values in their home gardens in order to conserve of endemic and relatively rare plants, with the facilitates of relevant authorities.

Key words: Homegardens, woody-perennials, endemic species