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Determination of the scale of pattern and distribution in *Helicteres isora* L. (Sterculiaceae)

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Helicteres isora L. is a traditional multipurpose plant used by indigenous community and villagers in all the three major climatic zones in Sri Lanka. It naturally occurs in the edges of forests and in disturbed secondary vegetation. It is fastly disappearing in the wet zone due to land clearing and high extraction rates. The present study was conducted to understand the pattern and the scale of distribution of *H. isora* in order to provide information for biodiversity conservation and further to enable the sustainable use.

Twelve natural populations were identified in wet, intermediate and dry zones and the distribution of individuals was studied using gradient directed transect method. The *t* test was performed for each population to detect the pattern of distribution and pattern analysis was carried out to determine the scale of pattern.

Out of twelve populations surveyed, only five populations showed contagious distribution ($p < 0.05$) while seven populations showed random pattern of distribution. This indicates that the populations of *H. isora* do not fall into a particular pattern of distribution in nature. This may be due to the high disturbance present in and around the populations.

The results of the pattern analysis reveal more peaks in smaller block sizes (2m²) and larger block sizes (32m²) indicating aggregated pattern in respective block sizes. Peaks in smaller block sizes are due to the morphology of the plant as it produces new plants from roots. Peaks at larger block sizes are due to the extrinsic factors and these results could be utilized in the in-situ conservation of *H. isora*.

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Eco-geographic survey of wild species of *Vigna* in Sri Lanka

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The eco-geographic survey of plant genetic resources is essential for effective *in situ* and *ex situ* conservation of plant genetic resources. Results of eco-geographic survey could be used to predict new areas for survey and to assist in the formulation of collection and conservation priorities. An eco-geographic survey was conducted in Sri Lanka during August 2005 to February 2006 in some protected areas and other target areas of Sri Lanka to locate wild species of *Vigna*, map their localities, identify threatened areas and find out suitable locations for in-situ conservation.

Habitats and taxonomic characteristics data were recorded. Locations of wild species of *Vigna* were noted by using Global Positioning System (GPS). The distribution of six wild species of *Vigna* occurring in Sri Lanka is depicted in the maps. GPS data were analyzed by Flora map distribution modelling and probable localities of *Vigna* wild species were mapped. Six species of *Vigna* recorded by the survey are distributed from 0 MSL to 1630 m MSL. However, *V. stipulacea*, *V. trilobata* and *V. aridicola* were found only lower latitudes (0 to 130 m MSL) and *V. dalzilliana* and *V. trinervia* are limited to higher elevation (790m to 1630m MSL). *Vigna radiata* var. *sublobata* was found only in one location Dambana in Badulla district. *V. stipulacea*, and *V. trilobata* are mostly found near sea shore and *V. aridicola* is found in inland dry areas. Difference in leaf shape of *V. trilobata* is observed in different populations. The probable areas that were identified using flora map modelling are located in Puttalam, Polonnaruwa, Ampara, Kurunagala and Batticola districts. Surveys in these areas are needed to identify new populations of wild *Vigna* species.