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**STAND DYNAMICS OF *Dipterocarpus zeylanicus* Thw.
PLANTATION AT KIRIGALA, INGIRIYA**

by

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Thesis submitted to the University of Sri Jayewardenepura for the award of the Degree
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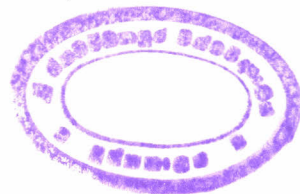
PLANTATION AT KIRIGALA, INGIRIYA

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ABSTRACT

The taxon *Dipterocarpus zeylanicus* Thw. is an endemic tree found mainly in lowland rain forest of the south western part of Sri Lanka. The Kirigala Hora Plantation of the Bope Forest Beat is situated in the Ingiriya Forest Range in Kalutara District. This plantation has been established in 1940 by the Forest Department.

Attygalle P.R. in 1998 has carried out an Ecological Assessment and Management Aspect of a *D. zeylanicus* plantation at Kirigala, Ingiriya. The present study could be considered as a continuation of the study conducted by Attygalle in establishing the Stand Dynamics of the taxon. The main objective of the present study was to investigate the Stand Dynamics of *D. zeylanicus* and its regeneration pattern. For this purpose 31 square sample plots of 25m x 25m were systematically established. Within each of these sample plots, sapling plots of the size 5m x 5m were placed at each corner and seedling plots of the size 2m x 2m were placed at each corner of each sapling plot. The dbh 10 cm or above and the height of each *D. zeylanicus* trees within each sample plot were recorded for further analysis. The numbers of saplings (dbh < 10 cm and height 1 m or above) and seedlings (dbh < 10 cm and height < 1 m) in each sapling plot and seedling plot were recorded, respectively. Since it was observed *Ochlandra*



stridula has some influence on the regeneration patterns of the endemic *D. zeylanicus* the percentage cover of this taxon was also recorded within each sample plots.

The number of *Dipterocarpus zeylanicus* trees within the study site were recorded to be 515 while the number of saplings and seedlings were recorded to be 789 and 551, respectively. The data were analyzed by one way ANOVA test of Minitab (13.1) statistical package. The mean height of *D. zeylanicus* trees within the study site was 22 m while the mean dbh was 31.4 cm and mean basal area was 0.1032 m². A significance increase in height of *D. zeylanicus* trees and the significance reduction in *D. zeylanicus* seedlings were observed. The percentage cover of *Ochlandra stridula* within nine sample plots were recorded to be greater than 75 % and within ten sample plots 40-75 % and it was less than 40 % within twelve sample plots.

D. zeylanicus trees, saplings and seedlings in the plantation has a continues reducing trend due to the invasion of *Ochlandra stridula*, Illicit felling and the lack of plantation management by the Forest Department. Therefore, the Kirigala Hora Plantation should be immediately brought under proper management.

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