Defoliation symptoms on trees planted at a restoration site in Sabah, Malaysia

ABSTRACT

A study on defoliation of selected tree species was conducted at a forest restoration site located at Species Demo Plot in Luasong, Tawau Sabah. The study site is part of the INIKEA Forest Rehabilitation Project managed by Yayasan Sabah. The objective of this study was to determine the type and variation of defoliation symptoms observed on the foliage of eight to ten years old trees of Dipterocarpus conformis (KBK), Diospyros sp. (KMLM), Dryobalanops lanceolata (KPJ), Pentace laxiflora (TDH), Pentace adenophora (TDB) and Hopea ferruginea (SMKU) that were planted by line planting method. Sampling was conducted in July 2017 for a period of one week. Four replicates for each tree species was sampled. Defoliation symptoms were assessed on the crown of the trees. The mean defoliation symptom occurrence was calculated to represent each tree species. The mean defoliation symptoms among the six tree species were tested by using the Chi-square statistical analysis. Defoliation symptom occurrence across the six species of trees was categorized as herbivory, egg cases, leaf miners, leaf rollers, and galls. The highest percentage of defoliation symptom was herbivory (44.71%), followed by both egg cases and leaf miners (24.71% respectively), and only 1.18% of galls, which was the lowest. The highest mean defoliation symptom occurrence was recorded on D. lanceolata, with a mean of 4.75 occurence, while the lowest mean defoliation symptom occurrence of 3.00 was recorded on both Diospyros sp. and H. ferruginea. Results of the Chi-square analysis indicated no significant difference ($p>0.05$) in the mean occurrence of defoliation symptoms across the six species of trees.