COMPARISON OF PLANTS BIODIVERSITY BETWEEN OIL PALM (*Elaeis guineensis*) & TEA LANDS (*Camellia sinensis*) IN WATAWALA PLANTATIONS PLC

This dissertation is submitted as a partial fulfillment of the degree Bachelor of Science Honors in Tea Technology & Value Addition

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ABSTRACT

There was an obligatory requirement to conduct a comparative research study about the difference in biodiversity of the plant species of oil palm and tea lands in the low country wet zone. It has been suggested that deforestation for oil palm cultivation is the main threat to biodiversity. Oil palm trees may have subjected to reduce the biodiversity & abundance of most native plant varieties. This research was done to identify the difference in plant biodiversity between the oil palm field and the tea field. This research was conducted between the oil palm field and the tea field which were existing at same mature stage at Carbeal Division, and Stockland Division, Homadola Estate, Watawala Plantations PLC. Existing individual plant species were identified into different growth levels such as overstory, understory, and midstory. After that, identified plant species were collected and counted by arranging 10 spots of 4 square meters (2 m × 2 m) in oil palm and five spots of 2.25 square meters (1 ½ m × 1 ½ m) in tea land separately. Plant biodiversity assessment under two crop environments was done at two various locations, and the comparison was well made. The relevant calculations to confirm the comparative difference of the diversity of plant species of two studied fields were done using diversity indicators such as Shannon diversity index, species evenness, and species abundance. There was no significant difference in plant family's availability on both oil palm and tea fields. Oil palm fields in Carbeal and Stockland division showed higher Shannon (0.13, 0.14) index values compared to tea (0.11, 0.12). Species evenness also was higher in oil palm (0.09) compared to tea field (0.07, 0.08). Species abundance also was higher in oil palm (1.70, 2.24) compared to tea field (1.44, 1.82). Between two crops environments in two divisions, 100 plant species and 24 plant families were identified. According to the overall results, it could be suggested that the diversity of the oil palm field is higher than the tea field.

Keywords: Abundance; Biodiversity; Plantation; Plant species