



**The impacts of a
Monoculture plantation (tea
plantation) on the soil in the
Low country wet zone of
Sri Lanka**

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ABSTRACT

In South East Asia, terraces were built several centuries ago in order to ensure that food crops could be grown. In many parts of the world, some forms of fallow such as grassland or woodland have provided a rest period for the recovery of soil.

Sri Lanka is an agricultural country with tropical climatic conditions. With the increase of the population most natural forests were destroyed for agriculture. During the time of British administration, plantation crops were introduced and tea is one such monoculture plantation introduced to the wet zone of Sri Lanka.

The pressure of anthropogenic activities on the soil has increased significantly due to these plantations and soils were subject to degradation. This situation could be clearly observed in many monoculture plantations. Therefore it was decided to carry out the present study to obtain the baseline data set to decide on extent of degradation and to decide on the necessity for further studies. The site selected for this study has both tea plantations and home gardens and is situated at Wanduramba, Baddegama AGA division in Galle district. Soil sampling was carried out according to the randomly stratified sampling technique to cover both dry and wet seasons. The results were analyzed using a one way ANOVA table.

It is observed in the present study that the most important physical and chemical parameters such as bulk density, pH, organic carbon and cation exchange capacity of tea soils are significantly different at 5% level compared to that of home garden indicating that tea soils are already in degraded status. Even though certain other soil quality parameters are not significantly different, their differences show that human interventions have caused a reasonable damage to soil under tea plants.

The results obtained from the study further indicated that the most of the soil quality parameters were negatively affected by establishing monoculture plantation such as tea. However further studies are needed to conform the validity and the consistency of these results.