

**INVESTIGATION ON UNDERLYING CAUSES FOR  
SUDDEN TEA BUSH DEATH AND THE FEASIBILITY  
OF APPLYING DECANTER CAKE OF OIL PALM  
(*Elaeis guineensis*) AS AN ORGANIC FERTILIZER ON  
TEA FIELDS AT WATAWALA PLANTATIONS PLC**

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## ABSTRACT

A series of experiments was carried out at the Nakiyadeniya estate, Galle of the Watawala Plantations PLC. in 2021 to investigate the underline cause for tea bush death with addition of Decanter cake of Oil Palm to tea field, the suitable decomposition level of DC to use as an organic fertilizer and the optimum rate of decomposed DC to be applied to soil. Three treatments such as, 2kg and 4 kg of DC decomposed over four weeks, and the control were tested with tea. Results showed that the plots applied with 4kg of DC decomposed over four weeks enhanced the total nitrogen, available phosphorus and total organic carbon content in soil. They were  $1.76 \pm 0.05\%$ ,  $321.51 \pm 12.39$  (mg/kg) and  $5.23 \pm 0.5\%$  respectively. In the other experiment where DC was heaped for four, six and eight weeks to decompose showed that most effective period of decomposition is eight weeks recording 4.2% total nitrogen, 1640.58 (mg/kg) of available phosphorus and 51.04% of total organic carbon with the lowest electric conductivity  $214.3(\mu\text{S}/\text{cm}^2)$  and. Furthermore, tea bush death was occurred as a result of direct application of fresh DC without allowing to decompose, to the base of tea plant thereby a high electrical conductivity was occurred. An overall analysis is showed decanter cake decomposed four 8 weeks is found to be more favourable to apply DC as an organic fertilizer on tea fields.

*Key words:* Decanter cake, total nitrogen content, organic carbon , available phosphorous , electric conductivity, Tea bush death.