Effect of applied concentration of tea waste on soil carbon mineralization

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Abstract

Alternative utilization methods of tea waste (TW) or refuse tea have been evaluated by researches conducted with different perspectives. The main objective of present experiment was to assess the carbon mineralization pattern of soil amended with TW. Four different levels (5, 10, 15, 20 and 25 %) of TW inoculated into the soil in a laboratory investigation conducted at the Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya. The control was free from TW. A completely randomized design was used with three replicates. Carbon mineralization was determined at 1, 3, 7, 14, 21, 28, 35and 42 days after the treatments (DAI). Data were statistically analyzed using SAS package. Carbon mineralization of the TW added soil was found to be reached to the peak at 3 DAI for control and 21 DAI for 5%TW, 10%TW and 15%TW treatments. As incubation time progressed, except 20%TW and 25%TW all other treatments reported significant ($P \leq 0.05$) reduction in carbon mineralization. It can be concluded that the carbon mineralization pattern of TW amended soil was depended on the application doses and duration of incubation.

Key words: tea waste, carbon mineralization, co-c evolution, incubation