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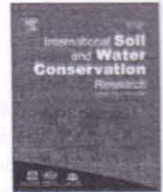


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Original Research Article

Farming methods impact on soil and water conservation efficiency under tea [*Camellia sinensis* (L.)] plantation in Nilgiris of South India



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ABSTRACT

Growing of tea on sloping land without any soil and water conservation measures causes enormous soil loss especially in the initial years. For sound soil and water conservation planning, there is a need to evaluate the various conservation measures as related to the amount of expected runoff and soil erosion. In this context, a field study was conducted in the farmer's field in Nilgiris of South India, for evaluating the impact of farming methods on soil and water conservation efficiency under new tea plantation. One year old B-6 tea clones were planted at double hedge spacing (135 cm × 75 cm × 75 cm) in two slopes (8–12% and 30–35%) with treatments viz., contour staggered trenches (CST), vegetative barrier (VB), CST alternate with VB, CST with cover crop of beans and farmers' practice of plantation. Minimum runoff (14.6%) was observed from CST with cover crop of beans followed by CST (15.4%) under 8–12% slope range with exactly similar trend in runoff from the plots under 30–35% slope. Contrary to runoff, minimum soil loss was observed from CST (4.9 and 6.9 t ha⁻¹ yr⁻¹) followed by CST with cover crop of beans (5.3 and 7.3 t ha⁻¹ yr⁻¹) under 8–12% and 30–35% respectively. Implementation CST and CST with cover crop of beans are resulted in better soil moisture under both the slope ranges in comparison to remaining measures as well as farmers' practice of plantation. Therefore, either CST alone or in combination with cover crop of beans are recommended for soil and water conservation under new tea plantation in the hill slopes.

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