

Research Article

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Impact of altitude and slope on soil textural characteristics of terrace lands in Darjeeling under eastern Himalayan region, India

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Summary

A textural property of soil plays an important role in determining its suitability for crop production. With such hypothesis, the study was undertaken during 2010-2012 in Darjeeling, under eastern Himalayan region. Four sample villages *viz.*, Sangsay (V_1), Dalapchand (V_2), Pudung (V_3) and Sindebong (V_4) located at approximately 5500, 4500, 3500 and 2500 ft. altitudes, respectively were selected for the study. Moreover, soil textural characteristic of terrace lands was greatly varies with altitudes and slope per cent. Results revealed that per cent sand, silt and clay content of surface soil at 0-15cm depth indicates that both bulk densities vary from 1.50-1.75 g/cm³. Particle density on the other hand was found to be relatively higher in V_3 (3.20 g/cm³) and V_4 (2.98g/cm³). As a consequence porosity of the soil of these two lower altitude villages were higher and varied from 53.12 - 44.60 per cent. The clay content, in general, was found to be increasing with the deposition of clay and/or silt at lower altitude through runoff water from the higher altitudes. The higher significant inverse correlation ($r = -0.848^{**}$) confirms the statement. Only V_4 had the soil clay loam in nature while in all the other villages was of sandy clay.

Key words : Altitude, Drainage, Porosity, Runoff, Terrace

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