



Appraisal of forest soils of Ranchi plateau, Jharkhand, India for increasing livelihood security through agroforestry

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Abstract

Forest soils of Ranchi plateau, Jharkhand developed on undulating upland were strong brown to dark red/ red in colour, medium to heavy in texture, very strongly to moderately acidic in reaction (pH 4.4 to 6.0), low to high in organic carbon (3.6 to 26.5 g kg⁻¹), low in CEC [3.4 to 9.6 c mol (p+) kg⁻¹] and medium to high in base saturation (42 to 79%). The translocation of clay and free iron oxide was prominent in these soils ($r = 0.57$, $P > 0.01$). The soils were highly weathered and the decrease in Fe_o/Fe_d ratio in soil with depth was a result of clay movement ($r = -0.72$, $P > 0.01$). Soil erosion, severe drought, soil acidity and poor fertility status are some of the major issues of this area. Restoration of this area through agroforestry interventions may help in enhancing livelihood security of the resource poor people.

Keywords: Agroforestry, Forest soil, Forest tree species, Livelihood security, Ranchi plateau