

Research Article

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# Physico-chemical properties of soils under different land uses in Longleng district soils of Nagaland

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## Summary

Land use effect on soil physico-chemical properties were studied in four villages, viz., Tamlu village, Tamlu town, Kangching and Namsang in Longleng district, Nagaland, under four land uses, viz., *Jhum*, lowland rice, forest and orange in each village. The soils were characterised by strong to moderate acidic in soil reaction (4.3 to 6.7), high in organic carbon content. The mean cation exchange capacity (CEC) ranged between 13.78 to 31.68 c mol (p<sup>+</sup>) kg<sup>-1</sup>. The mean bulk density and particle density ranged from 1.18 to 1.51 g cm<sup>-3</sup> and 2.2 to 2.34 g cm<sup>-3</sup>, respectively which generally increased with profile depth and were influenced by organic carbon content and mechanical composition of soils. Water holding capacity (WHC) varied from 40.20 to 54.20 per cent and was higher in the soils under cultivated lowland rice land use as compared to other land uses. The maximum per cent aggregates (WSA > 0.25 mm) and mean weight diameter in surface soils was found under *Jhum* land use. The bulk density, particle density, WHC and mean weight diameter had significant correlation with organic C.

**Key words :** Land uses, Soil properties, Surface soil, Sub surface soil

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