

COMPARATIVE STUDY OF MAPALANA SOILS IN RELATION TO THEIR PHYSICAL PROPERTIES

K. D. N. Weerasinghe *and* P. L. A. G. Alwis
(*Dept. of Agronomy, Div. of Agric. Engineering, Ruhuna
University College, Matara*)

Physical properties of Mapalana soil from 3 elevations (high, mid and low elevation levels) and soils under rubber, coconut and cinnamon cultivation were investigated. It was observed that red-yellow podzolic soils with soft laterite occur at high elevations and at lower mid slopes. Low humic clay soils occur at low elevations.

The soils showed decreasing infiltration capacity (8.6, 7.2, 5.4 cm/hr), decreasing field capacity in upper meter layers (23.83, 22.90, 18.17%), decreasing mean weight diameter of water stable aggregates (1.23, 1.32, 0.96 mm) and increasing bulk density of the subsurface horizons of 30-60 cm (1.49, 1.56, 1.59 g/cm³) with drop

SECTION B

in elevation. Surface layers of red-yellow podzolic soils were subjected to compaction under plantation crops (bulk density 1.7, 1.8 g/cm³). Here the water retention ability was decreased by 25 % compared to the undisturbed soils. A comparatively high infiltration rate of soil was observed under coconut cultivation (8.40 cm/hr). There was an apparent reduction of water stable aggregates in red-yellow podzolic soils under cinnamon cultivation (M.W.D. 1.25, 0.75 and 0.68 mm under rubber, coconut and cinnamon cultivations respectively).