

CHARACTERIZATION OF SOIL PHYSICAL CHARACTERISTICS ALONG AN UNDULATING TERRAIN OF THE REDDISH BROWN EARTH AND LOW HUMIC GLEY SOILS

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Great part of dry zone in Sri Lanka consists of reddish brown earth (RBE) and low humic gley (LHG) associations. The RBE occupies the upper and the middle slope of the landscape where as LHG soil occupies the lower part of the centenary sequence. The physical properties largely determine the stability of a soil and they usually control the suitability of the soil as growing medium.

Study on soil physical properties was carried out in the agriculture faculty farm at Bandara-Puliyankulama, Anuradhapura, which included texture, structure, color, bulk density, particle density and infiltration capacity of soil. Samples were collected to represent each drainage class namely well drained (WD), imperfectly drained (ID) and poorly drained (PD).

Structure and color were determined *in situ*, texture by sedimentation and decantation, bulk density by core sampler method, particle density by Pycnometer and infiltration using double ring infiltrometer.

Soil color varied as red, brown and dark brown in WD, ID and PD soils respectively. Two textural classes; sandy loam soils in the upper slope and sandy clay loam soils in the lower part were identified. WD soils were high in gravel and PD soils were high in organic matter content. Bulk density varied from 1.16 to 1.86 gcm⁻³ and the particle density varied from 2.47 to 2.70 gcm⁻³. Infiltration rate was high in WD soils than PD

soils. The upper slope of the land was subjected to high erosion and lower part was prone to water logging condition.

Key words: RBE and LHG soils, Colour, Texture, Structure, Bulk density, Particle density, Infiltration rate