B-46: Textural variation and its relation to field capacity and permanent wilting point of wet zone soils

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Soil texture is the relative proportion of sand silt and clay fractions. It is related to many physical and chemical properties. Textural data is scanty for Wet Zone soils. This region has a significant importance in proper soil management because of the cultivation of export crops. It is important to know the soil texture at soil series level. The most common soil series are Mawanella, Galigamuwa, Pallegoda, Kandy, Kiribatkumbura, Rathupasa, and Minuwangoda series. They belong to great soil groups of Red Yellow Podzolic, Reddish Brown Latosolic, Immature Brown Loam, Low Humic Gley (LHG), and Regosols. Objective of this study was to characterize the textural variations of Wet Zone soils and its relation to Field Capacity (FC) and Permanent Wilting Point (PWP).

Samples were collected from the representative soil profiles after identifying major horizons. Soil texture was determined using the pipette method. Moisture content at 0.1 bar (FC) and at 15 bar suction (PWP) was measured using sand box apparatus and pressure plate. Statistical analysis was done to see any correlation between clay content with soil water at FC and PWP.

The top horizons had the lowest clay percentage in each soil series and it varies from 3.8 to 13.8% in Pallegoda and Galigamuwa series respectively.

This indicates the clay migration from surface horizons due to high rainfall in this region. Galigamuwa, Kandy, Kiribatkumbura and Minuwangoda series showed higher clay content than the other soils. LHG showed relatively higher clay content and therefore it had higher FC and PWP. There was no significant correlation between clay content with water content at FC or at PWP.