

SOIL FERTILITY STATUS OF UPLAND FARMING AREAS IN *PALATUWA* SOIL SERIES IN MATARA DISTRICT

H.M.S. Dilrukshi¹, M.G.T.S. Amarasekara¹ and S.D.S. Yapa²

¹*Department of Agricultural Engineering and Soil Science, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka.*

²*Agriculture Research Station, Thelijjawila, Matara, Sri Lanka.*

Since *Palatuwa* soil series in Matara District contains potentially acidic substances, it has less potential for upland farming. The reason is when these soils are exposed to atmospheric oxygen, acid-forming substances get oxidized to create acidic conditions. However, some of the farmers have obtained substantial achievement in upland farming in *Palatuwa* soil series. Therefore, a study was carried out to investigate the present status of soil parameters of upland farm allotments in *Palatuwa* soil series in Matara District. Twenty locations were selected to represent *Palatuwa* soil series and samples were collected randomly from 0-15 cm depth. Collected samples were analysed for chemical parameters such as soil pH, EC, total N, available P, exchangeable K, soil organic matter (OM) and available Fe. Soil pH varied within the range of 2.3-7.9 but 90% of samples reported pH values less than 5. The soil EC varied from 0.015-3.4 dS m⁻¹ indicating a potential for salinity development in many locations. Total N percentage ranged from 0.02-0.9% and available P was reported within the range of 2.9 - 31.7 mg kg⁻¹. Even though soil N content was low, soil P status varied from low to moderately high with respect to vegetable-grown soils. The exchangeable K of analysed soil samples varied from 5.4-189 mg kg⁻¹. It indicated that soil K content is sufficient in some locations but needs to be added for deficient soils. The OM percentage was within a wide range of 1.5-15.2% indicating OM accumulation in some locations upon poorly drained conditions. Results revealed that agronomic practices presently adopted could enhance soil fertility status to a certain extent but more intensive management is needed to improve productivity.

Keywords: Acid soil, Acid sulfate soil, Half bog soil, *Palatuwa* series, soil pH