Variation of Microbial Biomass Carbon in paddy growing soils in Northern and Southern Sri Lanka

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Paddy cultivation plays the most important role in food production of Sri Lanka. In order to sustain paddy production, soil fertility should be managed properly. Microbial biomass plays an important role in maintaining soil fertility. The present study examines the Microbial Biomass Carbon (MBC) variation in paddy growing soils in Northern and Southern Sri Lanka in relation to some soil parameters. Twelve locations each from Southern and Northern Provinces were sampled for soil using conditional Latin hypercube sampling (cLHS) design to study the variation of MBC in the two different agro ecological zones. Soil MBC was determined using chloroform fumigation and extraction method. Soil pH, Electrical Conductivity (EC) and moisture content were also examined. The results revealed that, MBC content of the soils from the Southern Province was significantly higher than that from the Northern Province. Moreover, MBC showed a significant positive correlation with moisture ($r = 0.58$) and EC ($r = 0.50$), while a significant negative correlation with pH ($r = 0.50$) at 5% probability level. Study identified that soil pH, EC and moisture content controlled the MBC in soils. Further, the study concluded that an increased MBC can be maintained by managing the above soil parameters in the Northern Province.

Keywords: microbial biomass carbon, paddy soil, soil moisture, soil pH