

# SHORT TERM EFFECT OF CONVENTIONAL PADDY INPUT MANAGEMENT SYSTEM ON DIFFERENT SOIL PROPERTIES OF RICE GROWN IN ALFISOLS

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Synthetic fertilizers and agrochemicals have been widely used in conventional rice farming in Sri Lanka to obtain higher yields. Literature reveals that conventional rice farming creates adverse impacts on the environment and ecosystems. Hence, this field experiment was conducted to investigate and compare the characteristics of soil in continuously grown paddy in conventional input system over the last 3 years (2019, 2020, and 2022 *Yala* seasons) at the research field, Faculty of Agriculture, Rajarata University of Sri Lanka. Soil samples were collected from the surface (0-15 cm) and subsurface (15-30 cm) soil depths at just before land preparation in conventional input system with three replicates. Data were analysed by mixed procedure and mean comparison was performed by Tukey's method using SAS. Soil pH, biomass carbon, and total N and total Fe have shown a significant difference ( $p < 0.05$ ) among three seasons and two depths. Soil total K, Ca, and Na have shown a significant difference among three seasons ( $p < 0.05$ ) although there was no significant difference among depths ( $p > 0.05$ ). Soil organic carbon showed a significant difference ( $p < 0.05$ ) between the 2020 *Yala* and 2022 *Yala* seasons at two depths. Soil electrical conductivity (EC), available P, exchangeable K, cation exchange capacity (CEC), total Mg, Cd, Pb, As, Cu, Zn, and Mn have shown a significant difference ( $p < 0.05$ ) among only two seasons while no any significant difference ( $p > 0.05$ ) between depths. However, soil total N content increased gradually while soil microbial biomass content decreased among the three seasons and two depths. Therefore, the above results reveal that the continuous paddy growing in conventional input systems creates negative impacts on a few selected soil properties.

**Keywords:** Alfisols, Conventional input management system, Rice, Soil characteristics