

# **Comparative Effect of Organic and Inorganic Applications on Rice (*Oryza sativa*) Cultivation in Vavuniya District over Two Consecutive *Maha* Seasons**

**\*S. Sivaram, D.M.D. Dissanayake and A.M.K.R. Bandara**

Department of Plant Science, Faculty of Agriculture, Rajarata University of Sri Lanka

\*sivathassivaram3@gmail.com

Rice production in the Vavuniya district has increased over the last three decades due to high-yielding varieties, the use of plant nutrients and irrigation. The Sri Lankan government has supported stimulating rice production by introducing new policies on fertilizer subsidies. On May 6, 2021, the government restricted and banned the import of fertilizers and agrochemicals; however, the government lifted the restriction and ban before the onset of the *Maha* season of 2022/2023. This study attempted to evaluate the comparative effect of organic and inorganic applications on rice cultivation in Vavuniya district over two consecutive *Maha* seasons: *Maha* season of 2021/2022 and *Maha* season of 2022/2023. A paired t-test was used to analyze and compare the yield of rice estimated by the crop cut survey conducted in Vavuniya district. Meanwhile, GPS location was recorded, and locations were locked in the GIS system. The results of paired t-test showed that there was a significant ( $p < 0.01$ ) difference between yield under the organic application during *Maha* season of 2021/2022 (Mean yield = 1049.4 kg, SD = 263.2) and the inorganic application during *Maha* season of 2022/2023 (Mean yield = 1429 kg, SD = 298.6). This study also found that the farmers faced 4% loss to produce 1 kg of rice during the *Maha* season of 2021/2022 and the farmers received 4% to 19% profit to produce 1 kg of rice during *Maha* season of 2022/2023.

**Keywords:** Crop cut survey, *Maha* season, Organic and inorganic fertilizer, Rice cultivation