

Poster

**EFFECT OF DIFFERENT LEVELS OF CATTLE MANURE ON
IMPROVEMENT OF SOIL PROPERTIES IN ORGANIC
AGRICULTURE: A CASE STUDY WITH KIRI ALA
(*Xanthosoma sagittifolium*)**

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ABSTRACT

Organic agriculture is based on holistic production management system which promotes and enhances agro-eco system health including bio diversity, biological cycles and soil biological activities. Today, there is an increasing demand for organic edible products as home grown under garden and commercial scale systems. Cattle manure is one of the most popular organic manure for vegetable cultivation in Sri Lanka and it is freely available in the livestock sector. The nutrient content as well as pH, EC, microbial count of any organic manure are very much important factors to consider in organic farming systems because of soil health and sustainability of the production system. Therefore, this study was carried out to investigate the ability of cattle manure to improve the main soil properties that help to increase the crop yield. Four levels of cattle manure 15 t/ha, 30 t/ha, 45 t/ha and 60 t/ha were tested against 0 t/ha (Control) for different crops. There were no significant difference in physical and chemical parameters except soil moisture and organic carbon after four seasons over the control. However, a significant difference was observed in microbial biomass with different levels of cattle manure in top layer (0 - 10 cm) of treated soils. Crop yield of Kiri ala (*Xanthosoma sagittifolium*) had increased with the increasing rate of cattle manure up to 45 t/ha in organic vegetable cultivation and the yield was 14 t/ha compared to control.

Keywords: Cattle manure, Microbial biomass Organic farming, Soil health