

PERFORMANCE OF ECO-PLUS BIO-FERTILIZER ON GROWTH AND YIELD OF BIG ONION

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Big Onion (*Allium cepa L*) is a popular condiment in Sri Lanka. It is rich in vitamins and minerals and has several medicinal properties. Low soil fertility is a major constraint for vegetable production and soil fertility can be enhanced by application of fertilizers. Unlike chemical fertilizers, organic fertilizers improve soil structure and microbial biomass, which leads to increased crop yield and quality. An experiment was carried out in Rangiri Ranketha Ecological farm in Dambulla to find out the performance of Eco-plus bio-fertilizer with respect to big onion. Randomized Complete Block Design with three replicates was used in the experiment, where treatments were Eco-plus bio-fertilizer (T_1), Compost monthly (T_2), Compost + Chemical fertilizer monthly (T_3), and Department of Agriculture recommended Chemical fertilizer (T_4). There were significant ($p < 0.05$) differences in the height of plant, number of roots, root length, bulb width, bulb height and number of dropped leaves among different treatments. Higher growth rate was observed in the plants treated with chemical fertilizer (T_4) compared to Eco-plus bio-fertilizer (T_1) and Compost (T_2) in initial stages of the plants. However, in the middle and latter stages, the highest growth rate was observed in Eco-plus bio-fertilizer (T_1). There was no significant ($p > 0.05$) differences in the growth rates between T_3 and T_4 because Eco-plus bio-fertilizer and compost are slow-releasing fertilizers. Therefore, it can be concluded that Eco-plus bio-fertilizer is a cost effective and environmental friendly alternative to chemical fertilizers.

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