

THE POTENTIAL OF USING PELLETTED POULTRY MANURE AS A CHEAPER, EFFECTIVE AND ECO-FRIENDLY NUTRIENT SOURCE FOR CHILLI

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Chilli is one of the most important cash crops, which is highly responsive to chemical fertilizers (CFs). Therefore, farmers apply excessive amounts of CFs to enhance chilli yield. Over application of CFs is not economic and environmentally friendly. Therefore, CFs need to be substituted with eco-friendly, less hazardous, cheaper and effective materials. Poultry manure is an eco-friendly fertilizer enriched with essential nutrients. Hence, this experiment was conducted to investigate the effect of pelleted poultry manure (PPM) on growth and yield of chilli. A field experiment was conducted at School of Agriculture, *Puliyankulama, Anuradhapura, Sri Lanka*. Twelve treatments including different ratios of PPM, Department of Agriculture (DOA) recommended CF for chilli and compost were arranged in Randomized Complete Block Design with three replicates. Soil samples were collected at initial and 50% flowering stages and analysed for pH, EC, N, P, K, Ca, Mg, Na, organic matter, and certain trace elements. Growth parameters were measured in one-week intervals. Data were statistically analysed using SAS software. According to results, 100% DOA recommendation recorded significantly ($p < 0.05$) high soil available N, exchangeable K, Ca, Mg, Na, Cu and Cd. However, available P and organic matter contents were significantly high ($p < 0.05$) in 75% DOA recommendation + 25% PPM. Correspondingly, plant height and canopy diameter were significantly high ($p < 0.05$) in 75% DOA recommendation + 25% PPM. Furthermore, the highest fruit yield (3862.5 kg ha⁻¹) was also recorded in 75% DOA recommendation + 25% PPM at the end of the study. Overall, it could be concluded that, combined application of 75% of DOA recommendation + 25% of PPM was effective in supplement the nutrient requirement of chilli. However, further studies are required to investigate the applicability in replacing DOA recommendation for chilli by 75% CF+ 25% PPM combination.

Keywords: Chilli, Chemical fertilizers, Growth and yield parameters, Pelleted poultry manure, Soil nutrients