

## USE OF SLUDGE GENERATED FROM DRINKING WATER TREATMENT PLANTS AS A SOIL AMENDMENT FOR CHILLI CULTIVATION

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Large quantities of drinking water sludge are disposed from the water treatment plants to the agricultural lands without knowing the agronomic efficiencies. Hence, a pot experiment was conducted to study the effects of drinking water sludge on growth and yield of chilli. Six treatments including different ratios of sludge and Department of Agriculture (DOA) recommended chemical fertilizers for chilli were arranged in CRD design with 5 replicates. The treatments were; T1-100% sludge, T2-75% sludge+25% chemical fertilizer, T3-50% sludge+50% chemical fertilizer, T4-25% sludge+75% chemical fertilizer, T5-100% chemical fertilizer and T6-Control (0% sludge+0% chemical fertilizer). Soil samples collected at initial and 50% flowering stages were analysed for pH, EC, N, P, K and organic matter content. Growth parameters were also measured in two weeks intervals. Green chilli yield of different treatments were also estimated. The pH was not significantly different ( $p>0.05$ ) among all treatments. Soil EC was significantly higher ( $p<0.05$ ) in T2. Soil organic matter content was significantly higher at T1 and T2. Exchangeable K content was significantly higher ( $p<0.05$ ) in T3, T4 and T5. Available P content was significantly higher ( $p<0.05$ ) in T4 and T5. Number of leaves and canopy diameter were significantly higher ( $p<0.05$ ) in T4 and T5. Plant height was significantly higher ( $p<0.05$ ) in T5. Estimated chilli yield was significantly higher ( $p<0.05$ ) in T5. It could be concluded that T4 is comparable with T5 in enhancing growth and yield of chilli.

**Keywords:** Chemical fertilizers, Chilli, Growth parameters, Sludge, Soil nutrients