

## Sludge and Compost Amendments in Tropical Soils: Impact on Coriander (*Coriandrum sativum*) Nutrient Content

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**Abstract :** Degradation of agricultural soils has increased rapidly during the last 20 years due to the indiscriminate use of pesticides and other anthropogenic activities. Currently, there is an urgent need of soil restoration to increase agricultural production. Utilization of sewage sludge or municipal solid waste is an important way to recycle nutrient elements and improve soil quality. With these amendments, nutrient availability in the aqueous phase might be increased and production of healthier crops can be accomplished. This research project aimed to achieve sustainable management of tropical agricultural soils, specifically in Puerto Rico, through the amendment of water treatment plant sludge's. This practice avoids landfill disposal of sewage sludge and at the same time results cost-effective practice for recycling solid waste residues. Coriander sativum was cultivated in a compost-soil-sludge mixture at different proportions. Results showed that Coriander grown in a mixture of 25% compost+50% Voladora soi+25% sludge had the best growth and development. High chlorophyll content ( $33.01 \pm 0.8$ ) was observed in Coriander plants cultivated in 25% compost+62.5% Coloso soil+ 12.5% sludge compared to plants grown with no sludge ( $32.59 \pm 0.7$ ). ICP-OES analysis showed variations in mineral element contents (macro and micronutrients) in coriander plant grown I soil amended with sludge and compost.

**Keywords :** compost, *Coriandrum sativum*, nutrients, waste sludge

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