

STUDIES ON NITROGEN AND PHOSPHORUS CONTENTS IN SOIL CUCUMBER CULTIVATION FERTILIZING CHEMICAL FERTILIZER WITH BEEHIVE CHARCOAL RESIDUES FOR ADSORPTION BIOGAS EFFLUENTS

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Summary

The study was conducted to assess the variation of nitrogen and phosphorus contents and soil porosity of planting cucumber soil combining fertilized with beehive charcoal residue adsorbed biogas effluents. The experiment was arranged in the completely randomized block design with 3 replications for each treatment including of 3 treatments: chemical N, P, K fertilizer (control treatment), beehive charcoal residue equal to 50% of the nitrogen mass of chemical fertilizer and 50% of the chemical N, P, K fertilizer, and beehive charcoal residue equal to 75% of the nitrogen mass of chemical fertilizer and 25% of the chemical N, P, K fertilizer. The result showed that the soil fertilized with beehive charcoal residue were high significantly N-NH_4^+ , N-NO_3^- contents at the beginning of crops and decreased generally to the harvest while the concentration of P-PO_4^{3-} increased at the end of crops. The cucumber yield was not significant differences between of 50% of beehive charcoal residue + 50% of the chemical N, P, K fertilizer and 100% chemical N, P, K fertilizer treatments. There were about 80.3 L. m^{-2} with nitrogen and phosphorus in term of 39.3 and 9.72 g. m^{-2} that did not discharged to water bodies and soil porosity improved significantly in comparison to the chemical fertilizer treatment.

Keywords: *Cucumber, nitrogen, phosphorus, biogas effluent, beehive charcoal residue.*