



EFFECTS OF BIOWASTE COMPOST ON DYNAMICS OF ACID SOILS PROPERTY IN THE HUMID TROPIC

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Abstract

The present research work aims to ensure the higher agricultural productivity in intensive culture. For this purpose, a research methods for sustainable management of marginal sandy soils (Kalahari type) of agriculture in Kinshasa (Democratic Republic of Congo). Hence, a valorisation of organic resources locally available in municipal solid wastes as fertilizer (compost) remains one of the route to make these soils productive for agricultuer.

An experimental in completely random block was mounted on three sites (Mont Amba, Kimwenza and Balume), two strong agricultural activity. The diagnosis agropedological soil shwed that these soils are sandy, rubics arenoferralsols dystrics ; have excellent physical conditions (drainage, air circulation and penetration of roots), are provided colloids with variable loads, have an acid reaction, and are low in organic matter and mineral nutrients.

Aflter four growing seasons, the reaction of amendements applied at different doses (20, 40 and 60 t/ha) increased not only the physicochemical parameters (pH, TOC, CEE, bases saturation and reduce the aluminium saturation of 90%) but also the microbial parameters (microbial biomass, basal and induce respiration, enzymatic activities of the urease and

phosphomonoesterase acid). An increase of soyabean, sorrel and peanuts production yield was observed at different doses of applied compost.

Low doses (≤ 20 t/ha) have proven effective and recommended for annual and regular crop for this soil. Phosphorus was found to be the single most limiting and increased production could be ensiaged on the ground which synergistically, using small doses of compost and mineral fertilizer.

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