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Evaluation of Nutrient Restorative Ability of Some Selected Crop and Soil Management Practices in Makurdi, Southern Guinea Savanna, Nigeria

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ABSTRACT

Field experiments were carried out at the Teaching and Research Farm of the University of Agricultrue, Makurdi Southern Guinea Savanna, during 2007 and 2008 cropping seasons to evaluate the nutrient restorative ability of some selected crop and soil management practices on soil productivity and yield of maize. The experiment was laid out in Randomized Complete Block Design (RCBD) arranged in a splitplot with four levels of crop and soil management practices including no fertilizer (control), NPK (300kg/ha), NPK (300kg/ha) + poultry manure (PM) (5 t/ha) and NPK (300 kg/ha) + Cow dung (CD) (5t/ha) and two tillage practices (no tillage and 30 cm raised seed bed) and replicated four times. The study used the percentage change in post harvest nitrogen content to develop an index of restorative rationgs. Results of the study showed that the plots amended with NPK + PM gave higher seed yield of Maize (4 6t/ha) and higher left over N of 93.6 kg and 109/2 kg for 2007 and 2008 respectively. The highest P1 rating of +9.0 was also obtained from the same plot. The index developed could help farmers to predict the depletive or restorative effect of certain crop and soil management practices.

KEYWORDS: poultry manure, cow dung, maize, productivity index.