Effect of amending organic and inorganic fertilizer on selected soil physical properties in entisols

ABSTRACT

Application of organic amendment has become a substantial option and it is originated from oil palm waste. The integrated application of organic and inorganic amendment on crops could effectively gain high yield of production. After application of treatments, variables such as pressure head, water content, hydraulic capacity, hydraulic conductivity, and diffusivity are important to determine and observe its effect on soil physical properties using RETC model. This study was conducted to investigate the influence of organic and inorganic amendments on Rasau soil series (Entisols). The comparison was made on the effect of organic amendments (Biogreen–BG and treated POME Sludge-TPS), and NPK fertilizer, and on maize yield which two of the treatments are the combination of organic and inorganic amendments (BG+NPK and TPS+NPK). The soil water holding capacity for NPK+TPS treatment was the highest compared to the control treatment. Hydraulic conductivity (Ks) was shown higher in NPK+BG treatment compared to the other treatments. In addition, the soil physical properties measurement in each treatment improved the soil hydraulic capacity uptake and moisture content. The combination of organic and inorganic fertilizer has shown a significant result in improving soil hydraulic properties compared to the NPK and control treatment.

Keyword: Hydraulic properties; Organic and Inorganic amendment; Rasau soil series; RETC model