EFFECT OF RICE HUSK BIOCHAR AND SHEEP URINE FERTILIZER ON N AND K- AVAILABLE ON REGOSOL CONDONGCATUR

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ABSTRACT

Regosol has low nutrient properties including N and K nutrients, low water retention, high porosity, low content of organic matter and soil colloids making it vulnerable to nutrient loss through leaching. Rice husk biochar and sheep urine fertilizer can be used to improve Regosol soil problems. The purpose of the study was to determine the effect of rice husk biochar and sheep urine fertilizer on N and K-available in Regosol soil. The research was conducted in the Greenhouse of the Faculty of Agriculture, National Development University "Veteran" Yogyakarta from August to October 2022 and then analyzed in the Laboratory of Land Resources, National Development University "Veteran" Yogyakarta. The experiment used a two-factor completely randomized design (CRD). The first factor was the dose of rice husk biochar consisting of B0 = 0 tons/ha, B1 = 10 tons/ha, B2 = 15 tons/ha, and B3 = 20 tons/ha. The second factor is the dose of sheep urine consisting of U0 = 0 ml/l, U1 = 50 ml/l, U2 = 100 ml/l, U3 = 150 ml/l, then incubated for 1 month. The results showed that rice husk biochar tended to have a significant effect on soil pH, C-organic, N-total, K-available, and KPK parameters of Regosol soil. Sheep urine fertilizer had no significant effect on increasing C-organic and had a significant effect on increasing soil pH, N-total, K-available, and KPK of Regosol soil. The combination of rice husk biochar and sheep urine fertilizer interacted with each other to increase N and K-available of Regosol with the best treatment of N dose of 20 tons/ha (B3) and sheep urine fertilizer concentration of 100 ml/l water (U2). The increase in K-availability occurred at a dose of 20 tons/ha (B3) and a concentration of sheep urine fertilizer of 150 ml/l water (U3).

Keywords: Regosol, Biochar, Sheep Urine Fertilizer, Nitrogen, Potassium