THE EFFECT OF COMPOST MIXTURE OF ORGANIC WASTE WITH LIVESTOCK MANURE ON THE AVAILABILITY OF N, P, AND K REGOSOL AND GROWTH OF SWEET CORN

By: Daniel Alfanito Setyawan Tambun
Supervised by: Didi Saidi

ABSTRACT

Regosols have relatively low availability of N, P and K. Sweet corn needs sufficient of these three elements to grow optimally. This condition can be overcome by adding compost ameliorants. The purpose of this research was to determine the effect of compost mixture of organic waste with livestock manure on the availability of N, P, and K Regosol and sweet corn growth. The experiment was arranged in a non-factorial Completely Randomized Design (CRD) with 10 treatments and 3 replications. The treatments consisted of (P0) no compost, (P1) phonska, (P2) 100% organic waste, (P3) 75% organic waste + 25% goat manure, (P4) 75% organic waste + 25% chicken manure, (P5) 75% organic waste + 25% cow manure, (P6) 50% organic waste + 25% goat manure + 25% chicken manure, (P7) 50% organic waste + 25% goat manure + 25% cow manure, (P8) 50% organic waste + 25% chicken manure + 25% cow manure, and (P9) 25% organic waste + 25% goat manure + 25% chicken manure + 25% cow manure. Compost was incubated in 5 kg of soil for 30 days and then planted with sweet corn until maximum vegetative stage. Data were analyzed using variance analysis (Anova) followed by DMRT test at the 5% level. The results showed that compost application was able to increase the pH of H2O, C-Organic, KPK, N-Available, P-Available, and K-Available of Regosol although some of them were in the same level. In addition, compost application was able to increase height, number of leaves, fresh weight, and dry weight of sweet corn. Compost mixture of 75% organic waste and 25% cow manure gave the best results in increasing C-Organic and P-Persedia levels in Regosol and increasing height, number of leaves, fresh weight, and dry weight of sweet corn.

Keywords: *compost, organic waste, livestock manure, availability of N, P, K regosol, sweet corn*