ABSTRAK

Indra Agungkiswantoro. (0810483009). Pengaruh Macam Sumber Kompos Terhadap Sifat Fisik Tanah dan Pertumbuhan Tanaman Sawi (*Brassica Juncea L.)* Pada Alfisol Jatikerto. Dibawah bimbingan Zaenal Kusuma dan Sugeng Prijono

Alfisol Jatikerto dimanfaatkan oleh petani untuk pertanian secara intensif, hal ini mengakibatkan menurunnya kandungan bahan organik dalam tanah. Penurunan bahan organik secara terus-menerus tanpa ada upaya penambahan akan menurunkan kondisi sifat fisik tanah, sehingga dapat menurunkan produksi tanaman. Penelitian ini bertujuan untuk mengetahui pengaruh dosis dan sumber kompos terhadap sifat fisik Alfisol Jatikerto dan Pertumbuhan Tanaman Sawi *(Brassica juncea L)*. Hipotesis penelitian adalah terdapat perbedaan respon sumber kompos terhadap perbaikan sifat fisik Alfisol dan perbedaan respon pertumbuhan dan hasil produksi tanaman sawi terhadap dosis dan sumber kompos yang berbeda.

Penelitian ini dilaksanakan pada Mei sampai Juli 2012 di kebun percobaan Jatikerto Kec. Kromengan Kab. Malang. Alat yang digunakan adalah polybag, timbangan, ring sampel, peralatan untuk analisis sifat fisik tanah dan sifat kimia tanah. Penelitian disusun dengan Rancangan Acak Kelompok (RAK) dengan 11 perlakuan dan 3 kali ulangan. Perlakuan penelitian yaitu: (K) tanpa pupuk (kontrol), (UB_1) kompos sampah kampus 25%, (UB_2) kompos sampah kampus 50%, (UB_3) kompos sampah kampus 75%, (UB_4) kompos sampah kampus 100%, (UB_5) kompos sampah kampus 125%, (LP_1) kompos limbah pertanian 25%, (LP_2) kompos limbah pertanian 50%, (LP_3) kompos limbah pertanian 75%, (LP_4) kompos limbah pertanian 100%, (LP_5) kompos limbah pertanian 125%.

Variabel pengamatan meliputi tinggi tanaman, jumlah daun, bobot segar tanaman, bobot kering tanaman, berat isi tanah, berat jenis tanah, kemantapan agregat, porositas, tekstur, kadar air, pH tanah, C-organik dan N-total.Untuk mengetahui pengaruh perlakuan dilakukan uji analisis ragam pada taraf 5%. Untuk membandingkan perbedaan pengaruh perlakuan dilanjutkan dengan uji Duncan. Hasil penelitian menunjukkan pada pengamatan 42 hst perlakuan LP1 dengan dosis 25% mampu menurunkan berat isi tanah 11,47%, berat jenis tanah 5,62%. Porositas total tanah meningkat pada perlakuan UB2 dengan dosis 50% sebesar 16,96%. Kemantapan agregat pecah meningkat pada perlakuan UB3 dengan dosis 75% sebesar 38,61%. Sedangkan C organik meningkat pada perlakuan LP5 dengan dosis 125% sebesar 89,24%. Sedangkan hasil pertumbuhan tanaman sawi pada perlakuan LP4 dengan dosis 100% meningkatkan panjang tanaman 14,17%. Pada perlakuan LP5 meningkatkan jumlah daun 19,5%, bobot basah tanaman 42,52% serta bobot kering tanaman 40,26%.

ABSTRAC

Indra Agungkiswantoro. (0810483009). The Effect of Various Sources of Compost on Soil Physical Properties and Plant Growth Mustard (*Brassica Juncea L.*) In Alfisol Jatikerto. Supervisor : Zaenal Kusuma and Co. Supervisor Sugeng Prijono

Alfisol Jatikerto used by farmers for intensive agriculture, this has resulted in the decline in soil organic matter content. The decline of organic matter continuously without any additional effort will lower the soil physical properties, so it can reduce crop production. This study aimed to determine the effect of dose and source of compost on the physical properties of Alfisol Jatikerto and Plant Growth mustard (Brassica Juncea L). The research hypothesis is that there are differences in response to improved sources of compost and the Alfisol physical properties of the different responses of plant growth and yield production of mustard on the dose and the different sources of compost.

This study was conducted in May and July 2012 in the garden experiment Jatikerto Kromengan sub-district, Malang district. The tools used are polybags, scales, ring samples, tools for the analysis of soil physical properties and chemical properties of soil. Research compiled by Randomized Block Design (RBD) with 11 treatments and 3 replications. Treatment research: (K) without fertilizer (control), (UB1) campus waste compost 25%, (UB2) campus waste compost 50%, (UB3) campus waste compost 75%, (UB4) campus waste compost 100%, (UB5) campus waste compost 125%, (LP1) 25% agricultural waste compost, (LP2) 50% agricultural waste compost, (LP3) 75% agricultural waste compost, (LP4) 100% agricultural waste compost, (LP5) composting of agricultural wastes of 125%.

Observation variables plant height, number of leaves, plant fresh weight, plant dry weight, weight of soil, soil density, aggregate stability, porosity, texture, moisture content, soil pH, C-organic and N-total. To determine the effect of treatment diversity analysis test conducted at the level of 5%. To compare the difference in the effect of treatment followed by Duncan test. The results showed the 42 HST observations LP1 treatment at a dose of 25% can reduce the weight of the soil 11.47%, 5.62% heavy soils. Total porosity of the soil increases the UB2 treatment at a dose 50% at 16.96%. Increases in aggregate stability broke UB3 treatment at a dose of 75% amounting to 38.61%. While organic C increased in LP5 treatment with doses of 125% at 89.24%. While the results of the mustard plant growth LP4 treatment at a dose of 100% 14.17% increase the length of the plant. In LP5 treatment increased the number of leaves 19.5%, 42.52% wet weight of plants and plant dry weight of 40.26%