PEMANFAATAN POC LIMBAH CAIR INDUSTRI TEMPE DAN ABU SABUT KELAPA TERHADAP KETERSEDIAN N, P, K PADA TANAH REGOSOL DAN PERTUMBUHAN TANAMAN PAKCOY (*Brassica rapa* L.)

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ABSTRAK

Tanah Regosol merupakan salah satu jenis tanah yang tingkat kesuburannya rendah. Perbaikan sifat tanah Regosol dapat dilakukan dengan pemberian POC limbah cair industri tempe dan abu sabut kelapa. Penelitian bertujuan untuk mengetahui pengaruh penambahan POC limbah cair industri tempe dan abu sabut kelapa terhadap kadar N, P, K tanah Regosol dan pertumbuhan tanaman Pakcoy. Penelitian dilaksanakan di Kebun Condongcatur, Universitas Pembangunan Nasional "Veteran" Yogyakarta. Percobaan menggunakan metode Rancangan Acak Lengkap (RAL) dengan 2 faktor. Faktor pertama adalah dosis POC limbah cair industri tempe yang terdiri dari A_0 = 0 ml/L, A_1 = 50 ml/L, A_2 = 100 ml/L, dan A_3 = 150 ml/L. Faktor kedua adalah dosis abu sabut kelapa B_0 = 0 ton/ha, B_1 = 4 ton/ha, B_2 = 8 ton/ha. Parameter penelitian ini yaitu pH H_2O, C-organik, N-tersedia , P-tersedia, dan K-tersedia. Data dianalisis menggunakan ANOVA dan dilanjutkan DMRT taraf 5%. Hasil penelitian menunjukkan pemberian POC limbah cair industri tempe berpengaruh nyata meningkatkan N-tersedia, pH, panjang akar, dan berat basah tanaman. Pemberian abu sabut kelapa berpengaruh nyata meningkatkan K-tersedia, pH, tinggi tanaman, panjang akar dan jumlah helai daun. Terjadi interaksi antara kombinasi perlakuan POC limbah cair industri tempe dan abu sabut kelapa terhadap N-tersedia, P-tersedia, tinggi tanaman, jumlah helai daun, dan berat basah tanaman. Kombinasi perlakuan terbaik adalah POC limbah cair industri tempe perlakuan A1 (50mL/L) dan abu sabut kelapa perlakuan B1 (4 ton/ha) berpengaruh nyata terhadap sifat kimia tanah terutama meningkatkan N-tersedia sebesar 58,06 ppm dan P-tersedia 6,86 ppm.

***Kata Kunci** : abu sabut kelapa, POC limbah cair industri tempe, Regosol, pakcoy*

USE OF LIQUID ORGANIC FERTILIZER OF TEMPE INDUSTRIAL LIQUID WASTE AND COCONUT FIBER ASH ON THE AVAILABILITY OF N, P, K IN REGOSOL SOIL AND PAKCOY PLANT GROWTH (*Brassica rapa* L.)

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ABSTRACT

Regosol soil is a type of soil with low fertility. Improving the soil properties of Regosol can be done by adding liquid organic fertilizer from liquid waste from the tempeh industry and coconut fiber ash to increase the nutrient content. The research aims to determine the effect of adding liquid organic fertilizer from liquid waste from the tempeh industry and coconut fiber ash on the N, P and K levels of Regosol soil and he growth of Pakcoy plants. The research was carried out at Condongcatur Gardens, National Development University "Veteran" Yogyakarta. The experiment used a Completely Randomized Design (CRD) method with 2 factors. The first factor is the liquid organic fertilizer dose of liquid waste from the tempeh industry which consists of A_0 = 0 ml/L, A_1 = 50 ml/L, A_2 = 100 ml/L, and A_3 = 150 ml/L. The second factor is the dose of coconut fiber ash B_0 = 0 ton/ha, B_1 = 4 ton/ha, B_2 = 8 tonnes/ha. The parameters of this research are pH H_2O, C-organic, N-available, P-available, and K-available. Data were analyzed using ANOVA and continued with DMRT at 5% level. The results of the research showed that giving liquid organic fertilizer from liquid waste from the tempeh industry had a significant effect on increasing available N, pH, root length and plant fresh weight. The application of coconut fiber ash had a significant effect on increasing K-availability, pH, plant height, root length and number of leaves. There was an interaction between the combination of liquid organic fertilizer treatment of tempeh industrial liquid waste and coconut fiber ash on available N, available P, plant height, number of leaves, and plant fresh weight.The best combination of treatment is liquid organic fertilizer liquid waste from the tempe industry, treatment A1 (50 mL/L) and coconut fiber ash, treatment B1 (4 tons/ha), which has a significant effect on the chemical properties of the soil, especially increasing available N by 58.06 ppm and available P by 6. 86 ppm.

***Keywords** : coconut fiber ash, tempe industrial liquid waste, Regosol, pakcoy*