

**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 the 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  $A_1$  (50 mL/L) and coconut fiber ash, treatment  $B_1$  (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*