RINGKASAN

Selada (*Lactuca sativa* L.) merupakan tanaman holtikultura yang mempunyai nilai komersil tinggi. Selada diminati untuk dikonsumsi sebagai pendamping makanan pokok. Pada tahun tertentu kebutuhan selada mengalami penurunan sehingga perlu adanya pemupukan. Penggunaan *NZEO-SR* Plus dan *fly ash bottom ash* (FABA) menjadi faktor yang mendukung produksi selada. Keuntungan menggunakan *NZEO-SR* adalah dapat meningkatkan efisiensi penggunaan pupuk N serta lebih ramah lingkungan dibandingkan pupuk N konvensional. Kemudian, *fly ash bottom ash* sendiri yang merupakan bahan organik pembenah tanah yang mengandung unsur hara Ca (Kalsium), Mg (Magnesium) dan Si (Silika). Tujuan yang ingin dicapai pada Skripsi ini adalah sebagai berikut. Mengetahui pengaruh pupuk *NZEO-SR* Plus terhadap sifat kimia tanah inceptisol dan hasil tanaman selada**,** Mengetahui pengaruh *fly ash bottom ash* (FABA) terhadap sifat kimia tanah inceptisol dan hasil tanaman selada**,** Mengetahui interaksi antara *fly ash bottom ash* (FABA) dan pupuk *NZEO-SR* Plus terhadap sifat kimia tanah inceptisol dan hasil tanaman selada.

Penelitian ini dilaksanakan di lahan sawah Kelurahan Karangwangkal, Kecamatan Purwokerto Utara, Kabupaten Banyumas dan Analisis kimia dilaksanakan di Laboratorium Tanah, Fakultas Pertanian, Universitas Jenderal Soedirman. Penelitian dilaksanakan selama 5 bulan dimulai pada bulan November 2023 hingga Maret 2024. Metode yang digunakan dalam penelitian ini adalah Rancangan Acak Kelompok (RAK) yang terdiri atas 2 faktor yaitu *NZEO-SR* Plus (N) terdiri atas 4 macam dan faktor kedua yaitu FABA (A) terdiri atas 3 macam, sehingga terdapat 12 perlakuan. Masing-masing perlakuan dilakukan 3 kali ulangan sehingga terdapat 36 unit percobaan.Variabel yang diamati meliputi variable pH H2O, pH KCL, Potensial Redoks, Daya Hantar Listrik,N-Tersedia, N-Total, KTK, C-organik, dan Hasil Tanaman Selada.

Hasil perlakuan Pemberian *fly ash bottom ash* (FABA) mampu berpengaruh pada beberapa variabel sifat kimia tanah seperti C-Organik, P tersedia, K tersedia, dan Potensial Redoks. Pemberian pupuk *NZEO-SR* Plus memberikan pengaruh hampir semua variabel sifat kimia tanah, termasuk C-Organik, N total, P tersedia, K tersedia, pH KCl, pH H2O, Kapasitas Tukar Kation (KTK), dan hasil tanaman selada. Terdapat interaksi antara FABA dan pupuk *NZEO-SR* Plus yang menunjukan hasil terbaik yaitu pada dosis FABA 200 kg/ha dan *NZEO-SR* Plus 200 kg/ha atau pada perlakuan F2N2 dapat meningkatkan variabel C-Organik, N total, P total, K total, Potensial Redoks. Interaksi antara FABA dan *NZEO-SR* tidak memberikan hasil nyata terhadap hasil tanaman selada.

SUMMARY

Lettuce (Lactuca sativa L.) is a horticultural plant with high commercial value. Lettuce is favored for consumption as a side dish to staple foods. In certain years, the demand for lettuce decreases, necessitating fertilization. The use of NZEO-SR Plus and fly ash bottom ash (FABA) becomes a factor that supports lettuce production. The advantage of using NZEO-SR is that it can increase the efficiency of N fertilizer use and is more environmentally friendly compared to conventional N fertilizers. Then, fly ash bottom ash itself, which is an organic soil amendment containing nutrient elements Ca (Calcium), Mg (Magnesium), and Si. (Silika). The objectives to be achieved in this thesis are as follows. To determine the effect of NZEO-SR Plus fertilizer on the chemical properties of inceptisol soil and the yield of lettuce plants, to determine the effect of fly ash bottom ash (FABA) on the chemical properties of inceptisol soil and the yield of lettuce plants, to determine the interaction between fly ash bottom ash (FABA) and NZEO-SR Plus fertilizer on the chemical properties of inceptisol soil and the yield of lettuce plants. This research was conducted in the rice fields of Karangwangkal Village, North Purwokerto District, Banyumas Regency, and the chemical analysis was carried out at the Soil Laboratory, Faculty of Agriculture, Jenderal Soedirman University. The research was conducted over a period of 5 months, from November 2023 to March 2024. The method used in this study is a Randomized Block Design (RBD) consisting of 2 factors, namely NZEO-SR Plus (N) which consists of 4 types and the second factor, FABA (A) which consists of 3 types, resulting in 12 treatments. Each treatment was repeated 3 times, resulting in 36 experimental units. The observed variables included pH H2O, pH KCL, Redox Potential, Electrical Conductivity, Available Nitrogen, Total Nitrogen, Cation Exchange Capacity, Organic Carbon, and Lettuce Yield.

The results of the treatment with fly ash bottom ash (FABA) were able to influence several soil chemical property variables such as C-Organic, available P, available K, and Redox Potential. The application of NZEO-SR Plus fertilizer affects almost all variables of soil chemical properties, including C-Organic, total N, available P, available K, KCl pH, H2O pH, Cation Exchange Capacity (CEC), and lettuce crop yield. There is an interaction between FABA and the NZEO-SR Plus fertilizer that shows the best results, namely at a dose of FABA 200 kg/ha and NZEO-SR Plus 200 kg/ha, or in the F2N2 treatment, which can increase the variables of C-Organic, total N, total P, total K, and Redox Potential. The interaction between FABA and NZEO-SR did not yield significant results on the yield of lettuce.