RINGKASAN

Tanaman padi merupakan tanaman pangan yang sangat penting di Indonesia karena menjadi makanan pokok dan kebutuhannya mengalami kenaikan sepanjang tahun. Pemberian pupuk nitrogen pada pertanaman tanaman padi secara terus menerus dapat merusak tanah sehingga dapat mempengaruhi produksi tanaman. Pupuk NZeo-SR adalah pupuk urea berbasis zeolit yang dikembangkan untuk mencapai efisiensi penggunaan N yang lebih besar dan lebih ramah lingkungan. Penelitian ini bertujuan untuk 1) Mengetahui pengaruh residu komposisi pupuk NZeo-SR Plus terhadap pertumbuhan dan hasil tanaman padi pada tanah entisol. 2) Mengetahui pengaruh residu pupuk NZeo-SR Plus dengan *coating* terhadap pertumbuhan dan hasil tanaman padi pada tanah entisol. 3) Mengetahui pengaruh residu komposisi pupuk NZeo-SR Plus terhadap serapan N oleh tanaman padi.

Penelitian dilaksanakan setelah penanaman pertama di *screen house* Fakultas Pertanian, Universitas Jenderal Soedirman. Penelitian dilaksanakan pada bulan Desember 2020 sampai April 2021. Penelitian ini menggunakan rancangan faktorial dengan rancangan lingkungan Rancangan Acak Kelompok (RAK). Perlakuan terdiri dari 2 faktor yaitu *coating* dan macam komposisi pupuk dengan 3 ulangan. Variabel penelitian yang diamati yaitu tinggi tanaman, jumlah anakan, jumlah anakan produktif, kehijauan daun, kandungan klorofil, bobot segar tanaman, bobot kering tanaman, jumlah gabah bernas, jumlah gabah hampa, bobot gabah bernas, bobot gabah hampa, dan serapan N tanaman.

Hasil penelitian menunjukkan bahwa residu komposisi pupuk NZeo-SR Plus memberikan pengaruh sangat nyata terhadap variabel serapan N tanaman pada perlakuan P4 (200 mesh, 20% N, oven 35^0C (zeolit:arang sekam = 2:1)). Residu komposisi pupuk NZeo-SR Plus memberikan pengaruh nyata terhadap tinggi tanaman pada perlakuan P5 (200 mesh, 20% N, oven 35^0C (zeolit:arang sekam = 3:1)), jumlah anakan, jumlah anakan produktif, dan bobot gabah bernas pada perlakuan P4 (200 mesh, 20% N, oven 35^0C (zeolit:arang sekam = 2:1)). Residu pupuk NZeo-SR Plus *coating* tidak memberikan pengaruh nyata pada semua variabel penelitian namun perlakuan coating cenderung lebih tinggi daripada perlakuan tanpa coating.

SUMMARY

Rice is a very important food crop in Indonesia because it is a staple food and its have to increased throughout the year. Continuous application of nitrogen fertilizer to rice crops can damage the soil so it can affect crop production. NZeo-SR fertilizer is a zeolite-based urea fertilizer which was developed to achieve greater N use efficiency and more environmentally friendly. This study aims to 1) determine the effect of residual composition of NZeo-SR Plus fertilizer on the growth and yield of rice plants on entisol soils. 2) To determine the effect of NZeo-SR Plus fertilizer coating residue on the growth and yield of rice plants on entisol soils. 3) Knowing the effect of residue composition of NZeo-SR Plus fertilizer on N uptake by rice plants.

The research was carried out after the first planting at the screen house of the Faculty of Agriculture, Jenderal Sudirman University. The study was conducted from December 2020 to April 2021. This study used a factorial design with an environmental design of Randomized Block Design (RAK). The treatment consisted of 2 factors, coating and type of fertilizer composition with 3 replications. The research variables observed were plant height, number of tillers, number of productive tillers, greenish leaves, chlorophyll content, plant fresh weight, plant dry weight, number of pithy grain, number of empty grain, weight of pithy grain, weight of empty grain, and plant N uptake. .

The results showed that the residual composition of NZeo-SR Plus fertilizer had a very significant effect on plant N uptake variables in treatment P4 (200 mesh, 20% N, oven 350C (zeolite: husk charcoal = 2:1)). The residue of the NZeo-SR Plus fertilizer composition had a significant effect on plant height in treatment P5 (200 mesh, 20% N, oven 350C (zeolite: husk charcoal = 3:1)), number of tillers, number of productive tillers, and rice grain weight in P4 treatment (200 mesh, 20% N, 350C oven (zeolite: husk charcoal = 2:1)). NZeo-SR Plus coating fertilizer residue did not have a significant effect on all research variables but the coating treatment tended to be higher than the non-coated treatment.