

RINGKASAN

Sektor pertanian merupakan salah satu sektor yang vital di dunia. Sektor pertanian memiliki kontribusi yang sangat signifikan terhadap pencapaian tujuan tidak ada kelaparan, dan mencapai ketahanan pangan. Kebutuhan terhadap beras selalu mengalami peningkatan seiring dengan pertambahan jumlah penduduk, namun produksi padi belum dapat memenuhi kebutuhan masyarakat. Permasalahan pada lahan yang mengalami kekahatan unsur hara banyak terjadi di Indonesia, hal ini mengakibatkan produksi tanaman menurun. Pupuk alami NZeo-SR Plus (*Nitrogen Zeolite Slow Release*) merupakan pupuk alami yang dibuat dari bahan mineral yang diperkaya dengan unsur nitrogen yang merupakan upaya pemanfaatan sumberdaya alam. Berdasarkan hasil penelitian, bahwa proses pencampuran antara zeolit sebagai *supporting agent* dan pupuk urea dapat meningkatkan efisiensi penggunaan pupuk, karena unsur nitrogen dalam urea diikat dan bereaksi pada seluruh permukaan zeolit. Penelitian ini bertujuan untuk: 1) mengetahui pengaruh komposisi pupuk NZeo-SR Plus terhadap karakter agronomi padi pada Entisol, 2) mengetahui pengaruh *coating* pupuk NZeo-SR Plus terhadap karakter agronomi padi pada entisol, 3) mengetahui pengaruh komposisi pupuk NZeo-SR Plus terhadap serapan N padi, 4) mengetahui pengaruh *coating* pupuk NZeo-SR Plus terhadap serapan N padi.

Penelitian ini dilaksanakan di *screen house* Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto pada Juni 2020 sampai Oktober 2020. Rancangan percobaan yang digunakan yaitu rancangan faktorial dengan rancangan lingkungan Rancangan Acak Kelompok (RAK). Perlakuan terdiri dari dua faktor, *coating* dan macam komposisi pupuk. Setiap blok diberikan perlakuan yang berbeda. Variabel yang diamati meliputi variabel pertumbuhan: tinggi tanaman, dan jumlah anakan. Variabel produksi: anakan produktif, bobot basah tanaman, bobot kering tanaman, jumlah gabah bernas, jumlah gabah hampa, bobot gabah bernas, dan bobot gabah hampa. Variabel fisiologi: kehijauan daun, kandungan prolin, kandungan klorofil, dan serapan N oleh tanaman.

Hasil penelitian menunjukkan bahwa *coating* pupuk mampu meningkatkan bobot basah tanaman sebesar 10,56%, dan bobot kering tanaman sebesar 10,94% dibandingkan dengan pupuk tanpa *coating*. Sedangkan variabel tinggi tanaman, jumlah anakan, anakan produktif, jumlah gabah bernas, jumlah gabah hampa, bobot gabah bernas, bobot gabah hampa, kehijauan daun, kandungan prolin, kandungan klorofil, dan serapan N oleh tanaman menunjukkan adanya kecenderungan peningkatan. Komposisi pupuk NZeo-SR Plus mampu meningkatkan tinggi tanaman, jumlah anakan, bobot gabah bernas, bobot gabah hampa, dan kandungan klorofil pada perlakuan P5 terdiri atas 200 mesh zeolit, 20% N (zeolit:arang sekam= 3:1). P1 terdiri atas 200 mesh zeolit, 20% N memberikan pengaruh variabel anakan produktif, bobot basah tanaman, bobot kering tanaman, jumlah gabah bernas, dan jumlah gabah hampa. Pada variabel kehijauan daun, kandungan prolin, dan serapan N oleh tanaman tidak berpengaruh.

SUMMARY

The agricultural sector is one of the vital sectors in the world. The agricultural sector has a very significant contribution to achieving the goal of no hunger, and achieving food security. The need for rice has always increased in line with the increasing population, but rice production has not been able to meet the needs of the community. Problems on land that experienced nutrient density occurs a lot in Indonesia, this results in decreased crop production. Natural fertilizer NZeo-SR Plus (Nitrogen Zeolite Slow Release) is a natural fertilizer made from mineral materials enriched with nitrogen elements that are efforts to use natural resources. Based on the results of the study, that the mixing process between zeolite as a supporting agent and fertilizer urea can increase the efficiency of fertilizer use, because the nitrogen element in urea is tied and reacts on the entire surface zeolite. This study aims to: 1) determine the influence of fertilizer composition NZeo-SR Plus on the character of rice agronomy in entisol, 2) determine the influence of fertilizer coating NZeo-SR Plus on the character of rice agronomy in entisol, 3) determine the influence of fertilizer composition NZeo-SR Plus on the absorption of N rice, 4) determine the influence of fertilizer coating NZeo-SR Plus on the absorption of N rice.

This research was conducted at the screen house of the Faculty of Agriculture, General Soedirman University, Purwokerto from June 2020 to October 2020. The experimental design used is a factorial design with the design of the Randomized Group Design (RAK) environment. Treatment consists of two factors, coating and fertilizer composition. Each block is given a different treatment. The observed variables include growth variables: height of plants, and number of weeds. Production variables: productive weeds, wet weight of plants, dry weight of plants, amount of pithy grain, amount of hollow grain, weight of pithy grain, and hollow grain weight. Physiological variables: greenish leaves, proline content, chlorophyll content, and N absorption by plants.

The results showed that fertilizer coatings are able to increase the wet weight of plants by 10.56%, and dry weight of plants by 10.94% compared to fertilizers without coatings. While the variable height of plants, the number of weeds, productive weeds, the amount of pithy grain, the amount of hollow grain, the weight of the pithy grain, the weight of hollow grain, the greenness of the leaves, the content of proline, chlorophyll content, and the absorption of N by plants showed an increasing trend. The composition of NZeo-SR Plus fertilizer is able to increase plant height, number of weeds, weight of pithy grain, hollow grain weight, and chlorophyll content in P5 treatment consists of 200 mesh zeolite, 20% N (zeolite: charcoal husk= 3:1). P1 consists of 200 mesh zeolite, 20% N gives the influence of variable productive weeds, wet weight of plants, dry weight of plants, amount of pithy grain, and amount of hollow grain.