RINGKASAN

Nitrogen merupakan salah satu unsur hara makro paling esensial bagi tanaman padi. Nitrogen merupakan salah satu penentu keberhasilan budidaya padi, namun bersifat mudah larut dalam air dan mudah menguap. Sifat tersebut dapat merugikan karena kehilangan N ke udara dapat mencapai 40% dari total N yang diaplikasikan. Tingginya persentase kehilangan N ke lingkungan menyebabkan perlunya penelitian terkait pupuk lepas lambat/*slow release*. Tujuan dari pelaksanaan penelitian ini adalah 1) Mendapatkan dosis pupuk N yang tepat terhadap karakteristik fisiologis tanaman padi Inpago Unsoed 1 pada tanah entisol, 2) Mendapatkan macam pupuk N terbaik terhadap karakteristik fisiologis tanaman padi Inpago Unsoed 1 pada tanah entisol, 3) Mengetahui pengaruh interaksi aplikasi dosis dan macam pupuk N terhadap karakteristik fisiologis tanaman padi

Penelitian ini menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan 2 faktor perlakuan dan 3 ulangan. Faktor pertama adalah macam pupuk (P) dan faktor kedua adalah dosis pupuk (N). Masing-masing faktor terdiri dari P1 = Pupuk Urea, P2 = Pupuk NZEO-SR plus *coating* 1%, P3 = Pupuk NZEO-SR plus *coating* 3%, N0 = Dosis N 0 kg/ha, N1 = Dosis N 100 kg/ha, dan N2 = Dosis N 200 kg/ha. Variabel yang diamati dalam penelitian ini antara lain kehijauan daun, luas daun, indeks luas daun, kerapatan stomata, kandungan prolin, dan serapan nitrogen.

Hasil penelitian menunjukkan bahwa dosis N 200 kg/ha memberi hasil terbaik pada kehijauan daun, luas daun, dan indeks luas daun. Dosis N 0 kg/ha memberikan hasil tertinggi terhadap kerapatan stomata. Pupuk NZEO-SR plus *coating* 3% memberikan hasil tertinggi terhadap kehijauan daun, luas daun, dan indeks luas daun. NZEO-SR plus *coating* 1% memberikan hasil tertinggi terhadap kerapatan stomata. Sedangkan urea memberikan hasil tertinggi terhadap kandungan prolin dan serapan nitrogen. Tidak terdapat interaksi pada perlakuan antara dosis dan macam pupuk N terhadap karakteristik fisiologis tanaman padi.

Kata kunci : padi, pupuk nitrogen, NZEO-SR

SUMMARY

Nitrogen is one of the most important macro nutrient for rice plant. Nitrogen is one of the determinants of the success of rice cultivation, but it is easily soluble in water and volatile. These characteristic can also be detrimental since the loss of N to the air can reach up to 40% of the total application. The high percentage of N loss to the environment causes the need for the research related to Slow Release Fertilizer (SRF). The objectives of the implementation of this research were 1) Getting the right dose of N fertilizer on the physiological characteristics of Inpago Unsoed 1 rice plants on entisol soils, 2) Getting the best kind of N fertilizer on the physiological characteristics of Inpago Unsoed 1 rice plants on entisol soils, 3) Knowing the interaction effect of the application of dose and type of N fertilizer on the physiological characteristics of rice plants

This research was using a Randomized Complete Block Design (RCBD) with two treatment factors and 3 replays. The first factor is the type of fertilizer (P) and the second factor is the dose of fertilizer (N) consisting of : P1 = Urea Fertilizer, P2 = NZEO-SR plus coating 1% Fertilizer, P3 = NZEO-SR plus coating 3% Fertilizer, N0 = 0 kg/ha of N Dose, N1 = 100 kg/ha of N Dose, and N2 = 200 kg/ha of N Dose. This research have a several variable such as leaf greenness, leaf area, leaf area index, proline content, and nitrogen absorption.

The results showed 200 kg/ha of N dose gave the best result on greenish variables of leaves, leaf area, and leaf area index. Dose of N 0 kg/ha gave the best result on stomata density. NZEO-SR plus fertilizer coating 3% gave the best results on greenish variables of leaves, leaf area, and leaf area index. NZEO-SR plus fertilizer coating 1% gave the best results on stomata density. Urea fertilizer gave the best result on content of proline and nitrogen absorption. The combination of treatments between kind and doses of fertilizer showed no interaction with the physiological characteristics and growth of rice plants.

Keywords : *rice plant, nitrogen fertilizer, NZEO-SR*