

## RINGKASAN

Unsur hara nitrogen merupakan salah satu unsur hara yang diperlukan dalam jumlah banyak untuk pertumbuhan dan perkembangan tanaman. Hara nitrogen dalam tanah bersifat *mobile* sehingga mudah hilang dari tanah melalui pencucian maupun penguapan. Penggunaan pupuk nitrogen *slow release* merupakan terobosan baru dalam penyediaan unsur hara nitrogen bagi tanaman. Pupuk ini dapat melepaskan unsur hara bertahap sesuai kebutuhan tanaman dan meningkatkan efisiensi penggunaan pupuk. Uji agronomis berfungsi untuk mengetahui formula terbaik yang sesuai dengan pertumbuhan maupun perkembangan tanaman pakcoy. Penelitian ini bertujuan untuk mengetahui pengaruh pupuk lepas lambat terhadap: 1) serapan N pada tanaman pakcoy, 2) jumlah kandungan N tersedia pada Inceptisol dan, 3) hasil produksi pada tanaman pakcoy.

Penelitian ini dilaksanakan di *Screen House* Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto; pada bulan Februari 2018 sampai Agustus 2018. Uji agronomi menggunakan bahan-bahan pengkelat urea dengan lima (5) formula: F1 (60% Urea, 10% *Azolla microphylla*, 10% Monmorilonit, 10% Gondorukem, 10% Asam humat), F2 (70% Urea, 10% *Azolla microphylla*, 10% Monmorilonit, 10% Gondorukem), F3 (70% Urea, 10% *Azolla microphylla*, 10% Monmorilonit, 10% Asam humat), F4 (70% Urea, 10% *Azolla microphylla*, 10% Gondorukem, 10% Asam humat), F5 (70% Urea, 20% *Azolla microphylla*, 10% Monmorilonit). Kontrol digunakan untuk mengetahui keandalan lima formula tersebut; kontrol menggunakan urea, SP-36, dan KCl (Kontrol NPK). Uji agronomis tanaman pakcoy menggunakan tanah inceptisol. Penelitian uji agronomis tanaman pakcoy menggunakan Rancangan Acak Lengkap (RAL), dengan satu faktor berupa formula pupuk dan empat kali ulangan.

Hasil penelitian menunjukkan formula pupuk nitrogen F4 memiliki lepas-lambat paling stabil dan bertahap. Formula pupuk nitrogen berpengaruh terhadap tinggi tanaman, jumlah daun, luas daun, bobot segar tanaman, bobot kering tanaman, bobot segar akar, N tersedia, dan Serapan N tanaman. Formula pupuk F4 merupakan formula pupuk terbaik pada pengujian.

## **SUMMARY**

*Nitrogen nutrient is one of the nutrients needed in large quantities for the growth and development for plants. Nitrogen in the soil is mobile so it is easily lost from the soil through leaching or evaporation. The use of slow release nitrogen fertilizers is a new breakthrough in the supply of nitrogen nutrients to plants. This fertilizer can release nutrients gradually according to the needs of plants and improve the efficiency of fertilizer. A leaching test was performed to test the nutrients N contained in the formula and to know its nutrient release. Agronomic test was functioned to determine the best formula in suitable with the growth and development of pakcoy plants. The research aims to determine the influence of slow release fertilizers: 1) absorption of N in plants pakcoy, 2) amount of N content is available on Inceptisol, and (3) production at the plant pakcoy.*

*The research was conducted at Screen House of Faculty of Agriculture Jenderal Soedirman University, Purwokerto; from February 2018 to August 2018. Leaching test used five nitrogen fertilizer formulas coated with local materials : F1 (60% Urea, 10% Azolla microphylla, 10% Montmorillonite, 10% Gum rosin, 10% Humic acid), F2 (70% Urea, 10% Azolla microphylla, 10% Montmorillonite, 10% Gum rosin) , F3 (70% Urea, 10% Azolla microphylla, 10% Montmorillonite, 10% Humic acid), F4 (70% Urea, 10% Azolla microphylla, 10% Gum rosin, 10% Humic acid), F5 (70% Urea, 20% Azolla microphylla, 10% Montmorillonite). Controls are used to determine the reliability of those five formulas; Control using urea, SP-36, and KCl (NPK control). The agronomic test for plant crop used soil inceptisol. The agronomic test of plant pakcoy used a Completely Randomize Design (CRD), with one factors be the fertilizer formula and four replications.*

*The results showed that the nitrogen fertilizer formula F4 was the most stable and slow gradually released. The Formula of nitrogen fertilizer affects the high crop, the number of leaves, the leaf area, the fresh weight of plants, the dry weight of plants, the fresh weight of roots, N available, and the absorption of N plants. Fertilizer formula F4 gave the best effect on leaching test.*