PENGARUH PEMBERIAN PUPUK KASCING TERHADAP KETERSEDIAAN HARA NITROGEN PADA BERBAGAI JENIS TANAH DAN SERAPAN NITROGEN PAKCOY (*Brassica rapa* L.)

Oleh : Tiffani Nur Aisyah Hanafi

Dibimbing oleh : Eko Amiadji Julianto dan Lelanti Peniwiratri

ABSTRAK

Nitrogen (N) merupakan unsur hara makro primer yang dibutuhkan tanaman dan berperan penting dalam pertumbuhan vegetatif tanaman. Regosol, Latosol, dan Grumusol merupakan tanah yang berpotensi sebagai media tumbuh tanaman, dengan perbedaan karakteristik dan tingkat produktivitas serta terkendala pada N tanahnya. Pemberian kascing yang kaya N sebagai alternatif untuk mengatasi kendala ketiga tanah tersebut. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian pupuk kascing terhadap ketersediaan hara N pada Regosol, Latosol, dan Grumusol serta serapan N pakcoy. Penelitian menggunakan Rancangan Split Plot dengan petak utama berupa jenis tanah (T1 = Regosol, T2 = Latosol, dan T3 = Grumusol) dan anak petak berupa dosis kascing (K0 = 0 ton/ha, K1 = 10 ton/ha, K2 = 20 ton/ha, dan K3 = 30 ton/ha) sehingga terdapat 12 perlakuan dan diulang sebanyak tiga kali. Penelitian dilakukan dengan 2 set *polybag* yang diinkubasi selama 30 hari di dalam rumah plastik. Set 1 digunakan untuk media tanam pakcoy dan set 2 digunakan untuk analisis kimia tanah. Parameter yang diamati berupa pH H_2O, N-Total, N-Tersedia, C-Organik, KPK, Tinggi Tanaman, Berat Basah, Berat Kering, N Jaringan, dan Serapan N. Hasil penelitian menunjukkan bahwa pemberian pupuk kascing pada Regosol, Latosol, dan Grumusol mampu meningkatkan N-Total, N-Tersedia, C-Organik, KPK serta Tinggi Tanaman, Berat Basah, Berat Kering, N Jaringan, dan Serapan N Pakcoy. Pemberian dosis pupuk kascing 20 ton/ha merupakan dosis optimum terhadap ketersediaan N dan serapan N Latosol. Namun, serapan N Regosol dan Grumusol yang optimum terdapat pada dosis 30 ton/ha.

Kata Kunci : Nitrogen, Kascing, Regosol, Latosol, Grumusol, Pakcoy

EFFECT OF ADDING VERMICOMPOST FERTILIZER ON THE AVAILABILITY OF NITROGEN NUTRIENT IN VARIOUS TYPES OF SOIL AND NITROGEN NUTRIENT ABSORPTION OF PAKCOY (Brassica rapa L.)

By : Tiffani Nur Aisyah Hanafi

Supervised by : Eko Amiadji Julianto and Lelanti Peniwiratri

ABSTRACT

Nitrogen is a primary macro nutrient needed by plants and has an important role in plant growth. Regosols, Latosols, and Grumusols are soils that have the potential as a medium for plant growth, with different characteristics and levels of productivity and are constrained by soil nitrogen. Application of nitrogen-rich vermicompost as an alternative to overcome the problem of the three soils. The research aim's to determine the available nitrogen content and nitrogen absorption of pakcoy by adding vermicompost on Regosols, Latosols, and Grumusols. The research used a split plot design with the main plot in the form of soil types (T1 = Regosols, T2 = Latosols, and T3 = Grumusols) and subplot in the form of a dose of vermicompost fertilizer (K0 = 0 tons/ha, K1 = 10 tons/ha, K2 = 20 tons/ha, and K3 = 30 tons/ha) so there are 12 treatments and repeated three times. The research was conducted with two sets polybag which were incubated for 30 days in a plastic house. Set one is used for pak choy planting media and set two is used for soil chemical analysis. The observed parameters are pH H_2O, Total N, N Availability, Organic Carbon, Cation Exchange Capacity, Plant Height, Wet Weight, Dry Weight, Tissue N, and N Uptake. The results shows that the application of vermicompost to Regosols, Latosols, and Grumusols was able to increase Total of N, N Availability, Organic Carbon, Cation Exchange Capacity, Plant Height, Wet Weight, Dry Weight, Tissue of N, and N Uptake. The dose of vermicompost fertilizer of 20 tons/ha is the optimum dose for the availability of N and N uptake of Latosols. However, the optimum N uptake of Regosols and Grumusols was at a dose of 30 tons/ha.

Keywords : *Nitrogen, Vermicompost, Regosols, Latosols, Grumusols, Pakcoy*