

RINGKASAN

Jagung manis (*Zea mays L. sacaratha*) merupakan tanaman yang cukup populer di masyarakat Indonesia. Selain rasanya enak, kandungan karbohidrat, protein serta kadar gulanya cukup tinggi tetapi kandungan lemaknya rendah. Produksi jagung manis di Indonesia pada tahun 2010 sampai 2015 mengalami penurunan. Rendahnya produktivitas jagung terjadi karena menurunnya kualitas tanah yang disebabkan hilangnya unsur hara khususnya ketebalan nitrogen. Berdasarkan hal tersebut perlu dilakukan suatu usaha untuk meningkatkan produksi tanaman jagung manis, salah satu cara yang dapat digunakan adalah memperbaiki kualitas tanah khususnya unsur hara nitrogen dengan menggunakan pupuk nitrogen *slow release*. bahan lokal (campuran polimer mineral dan organik). Tujuan dari penelitian ini adalah untuk: 1) Mengetahui pengaruh 5 formula pupuk N *slow release* bahan polimer lokal terhadap pertumbuhan dan hasil jagung manis. 2) Mengetahui 5 formula pupuk N *slow release* bahan polimer lokal yang paling baik untuk pertumbuhan dan hasil tanaman jagung manis.

Penelitian dilaksanakan pada desa Kebumen, Baturraden dan laboratorium Ilmu Tanah dan Sumber Daya Lahan Fakultas Pertanian Universitas Jenderal Soedirman. Penelitian berlangsung selama kurang lebih 4 bulan, yaitu September 2018 sampai dengan Januari 2019 Uji agronomis dengan rancangan dasar RAKL (Rancangan Acak Kelompok Lengkap) yang memiliki satu faktor perlakuan, yaitu 5 variasi formula pupuk N-*slow release* yang dikelat bahan lokal. Percobaan terdiri atas lima formula pupuk N *slow release* F1 (60% Urea, 10% *Azolla microphylla*, 10% Montmorillonite, 10% Gondorukem, 10% Asam humat), F2 (70% Urea, 10% *Azolla microphylla*, 10% Montmorillonite, 10% Gondorukem), F3 (70% Urea, 10% *Azolla microphylla*, 10% Montmorillonite, 10% Asam humat), F4 (70% Urea, 10% *Azolla microphylla*, 10% Gondorukem, 10% Asam humat), dan F5 (70% Urea, 20% *Azolla microphylla*, 10% Montmorillonite) dan satu kontrol dengan komposisi pupuk urea, SP-36 dan KCL. Variabel yang diamati pada penelitian ini adalah variabel pertumbuhan dan hasil tanaman (tinggi tanaman, jumlah daun, luas daun, bobot segar tajuk, bobot segar akar, bobot tongkol segar dan bobot kering tanaman), serta variabel pendukung (suhu, kelembaban dan pH tanah).

Hasil penelitian menunjukkan pemberian aplikasi formula pupuk nitrogen *slow release* memberikan Pemberian pupuk nitrogen *slow release* berbahan polimer lokal berpengaruh nyata pada variabel tinggi tanaman, luas daun, jumlah daun, bobot segar tajuk, dan bobot segar tongkol. Formula pupuk nitrogen lepas lambat yang dilapis polimer bahan lokal terbaik yaitu F4 dengan formula (70% Urea, 10% *Azolla microphylla*, 10% Gondorukem, 10% Asam humat). Pupuk N *slow release* F4 meningkatkan produksi bobot tongkol segar sebesar 58% dibanding kontrol.

SUMMARY

Green mustard is one of the vegetables that is widely used in food preparations because of its high nutritional content. In addition, the price is relatively cheap so it is easily accessible by all levels of society. Green mustard production is unstable every year and there was a decline in 2015. The decline in mustard production is due to farming techniques that are not yet intensive rapidly decreasing and changing levels of N in the soil causing the growth of mustard plants to be not optimal. Based on this description, research has been conducted with the aim of knowing the exact formula of N slow release fertilizer to obtain maximum growth and yield of mustard greens, and to find out the amount of N mustard absorption in each formula of N slow release fertilizer.

This research was carried out in the Faculty of Agriculture research field, Jenderal Soedirman University, Karangwangkal Sub-District, North Purwokerto Subdistrict and the UNSOED Faculty of Agriculture Soil Science Laboratory, Purwokerto. This research lasted for approximately 3 months, namely from January to March 2019. The research was carried out in 5 stages, namely: (i) preparation of Formula N Slow release Fertilizer, (ii) seedbed, (iii) preparation of planting media, (iv) transplanting, and (v) maintenance. The design used in this study was a Complete Randomized Block Design (RCBD) with one factor, namely five levels of N slow release fertilizer and one control, namely F0 = Control; F1 = fertilizer N slow release formula I; F2 = fertilizer N slow release formula II; F3 = fertilizer N slow release formula III; F4 = fertilizer N slow release formula IV; F5 = N fertilizer release formula V. Variables observed were plant height, number of leaves, leaf area, canopy fresh weight, canopy dry weight, fresh plant weight, dry plant weight, fresh root weight, dry root weight, N uptake, and SPAD / Greenish leaves.

The results showed that the application of slow release N formula fertilizer had a significant effect on plant height, leaf area, and N absorption with the best formula, F5, and the amount of N uptake in each formula was 0.77% F0, F1 1.17% , F2 1.24%, F3 1.20%, F4 1.13%, and F5 1.35%. The application of the formula N slow release fertilizer that is most suitable for the growth and yield of mustard greens is F1 (slow release N fertilizer with a composition of 6 urea: 1 Azolla microphylla: 1 montmorillonite: 1 gum rosses: 1 humic acid).