

AJI SUTOPO. NIM 20.03.111.00112. Pengaruh Biochar-Coated Urea Terhadap Pertumbuhan dan Efisiensi Serapan N Pada Tanaman Jagung (*Zea mays* L.) di Tanah Pasiran Dibawah bimbingan: Ir. Slamet Supriyadi, M.Si. dan Fahmi Arief Rahman, S.P., M.Si.

ABSTRAK

Tanah berpasir memiliki sifat fisik yang menguntungkan seperti drainase dan aerasi yang baik, namun minim air dan unsur hara. Biochar-coated urea merupakan pupuk lepas lambat yang terbuat dari urea yang dilapisi biochar dari sekam padi dan tongkol jagung. Perlakuan pelapisan pupuk ini digunakan untuk melindungi urea terhadap volatilisasi. Penelitian ini dilaksanakan di Green house dan Laboratorium Universitas Trunojoyo Madura. Penelitian ini bertujuan untuk mengetahui pengaruh *biochar-coated urea* terhadap efisiensi nitrogen (N) dan pertumbuhan tanaman jagung. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) Non Faktorial dengan 6 taraf perlakuan yang diulang sebanyak 4 kali. Perlakuan yang diuji adalah P0: Kontrol (tanpa pupuk) P1: Pupuk urea tanpa pelapis sesuai dosis anjuran (3 kali aplikasi) P2: Pupuk urea 80% dari dosis anjuran dengan pelapis biochar sekam padi P3: Pupuk urea 100% dari dosis anjuran dengan pelapis biochar sekam padi P4: Pupuk urea 80% dari dosis anjuran dengan pelapis biochar tongkol jagung P5: Pupuk urea 100% dari dosis anjuran dengan pelapis biochar tongkol jagung. Hasil dari penelitian ini yaitu *biochar-coated urea* berpengaruh nyata terhadap tinggi tanaman, luas daun, jumlah daun, bobot basah tanaman, bobot kering tanaman, klorofil, dan serapan N tanaman jagung. Perlakuan P5 (pupuk urea 100% dari dosis anjuran dengan pelapis biochar tongkol jagung) menghasilkan tanaman jagung dengan tinggi, luas daun, jumlah daun, bobot basah). Perlakuan P3 berpengaruh nyata terhadap bobot kering, sedangkan kadar klorofil perlakuan terbaik pada P4 sebesar 54,90 mg/L, dan efisiensi serapan N tertinggi pada P1 sebesar 47% dibandingkan dengan perlakuan lainnya.

Kata kunci: *biochar-coated urea*, efisiensi nitrogen, jagung, tanah pasiran.

AJI SUTOPO. NIM 20.03.111.00112. Effect of Biochar-Coated Urea on Growth and N Uptake Efficiency in Corn Plants (*Zea mays* L.) in Sandy Soil With Guidance: Ir. Slamet Supriyadi, M.Si. dan Fahmi Arief Rahman, S.P., M.Si

ABSTRACT

Sandy soil has beneficial physical properties such as good drainage and aeration but lacks air and does not contain nutrients. Biochar-coated urea is a slow-release fertilizer made from urea coated with biochar from rice husks and corn cobs. This fertilizer coating treatment is used to protect the urea against volatilization. This research was carried out in the greenhouse and laboratory of Trunojoyo Madura University. This research aims to determine the effect of biochar-coated urea on nitrogen (N) efficiency and corn plant growth. This research used a non-factorial, completely randomized design (CRD) with six treatment levels, which were repeated four times. The treatments tested were P0: Control (no fertilizer). P1: Urea fertilizer without coating according to the recommended dose (3 applications) P2: Urea fertilizer: 80% of the recommended dose with a layer of rice husk biochar P3: Urea fertilizer: 100% of the recommended dose with a coating Rice husk biochar P4: Urea fertilizer, 80% of the recommended dose, with a layer of corn cob biochar P5: Urea fertilizer: 100% of the recommended dose with a layer of corn cob biochar. The results of this research show that biochar-coated urea has a significant effect on plant height, leaf area, number of leaves, plant wet weight, plant dry weight, chlorophyll, and N uptake in corn plants. Treatment P5 (urea fertilizer at 100% of the recommended dose with a layer of corn cob biochar) produces corn plants with height, leaf area, number of leaves, and wet weight. The P3 treatment had a significant effect on dry weight, while the chlorophyll content of the best treatment in P4 was 54,90 mg/L, and the highest N uptake efficiency in P1 was 47% compared to other treatments.

Keywords: *biochar-coated urea, nitrogen efficiency, corn, sandy soil.*