

**PENGARUH PEMBERIAN *MYCORRHIZA* DAN BAHAN ORGANIK
TERHADAP KETERSEDIAAN P TANAH BEKAS TAMBANG KAPUR
DAN PERTUMBUHAN TANAMAN JAGUNG DI DESA KARANGDAWA,
KABUPATEN TEGAL**

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ABSTRAK

Lahan bekas tambang kapur memiliki kadar kalsium karbonat yang tinggi dan pH yang alkalis, kondisi ini menyebabkan ketersediaan P menjadi terbatas, sehingga perlu diberikan perlakuan berupa *mycorrhiza* dan bahan organik. Penelitian ini bertujuan untuk mengetahui pengaruh dosis *mycorrhiza* dan macam bahan organik, serta kombinasi perlakuan yang terbaik dari interaksi berbagai dosis *mycorrhiza* dan macam bahan organik terhadap ketersediaan P pada tanah bekas tambang kapur dan pertumbuhan Jagung. Penelitian dilaksanakan di rumah kaca Taman Teknologi Pertanian Lebaksiu, Kabupaten Tegal, Jawa Tengah pada Februari sampai Mei 2019. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dua faktor. Faktor pertama adalah dosis *Mycorrhiza* yaitu Tanpa *Mycorrhiza* (M0), *Mycorrhiza* 10 g/ pot (M1), dan *Mycorrhiza* 20 g/ pot (M2) . Faktor kedua adalah bahan organik yaitu tanpa bahan organik (B0), pupuk kandang sapi dosis 20 ton/ha (BS), seresah jagung dosis 20 ton/ha (BJ), dan seresah leguminosa (kacang) 20 ton/ha (BK). Masing-masing perlakuan diulang 3 kali, sehingga terdapat 36 unit satuan percobaan. Hasil percobaan dianalisis dengan *Analisis of Variance*. Jika perlakuan berpengaruh nyata maka diuji lanjut dengan Uji DMRT 5 % (*Duncan Multiple Range Test*). Pemberian dosis *mycorrhiza* berpengaruh nyata dalam meningkatkan C-Organik tanah, Kapasitas Pertukaran Kation (KPK), dan berat kering tanaman, namun tidak berpengaruh nyata terhadap P-Tersedia, Ca dan Mg dd. Pemberian berbagai jenis bahan organik berpengaruh nyata meningkatkan P-Tersedia, C-Organik tanah, KPK, tinggi tanaman, dan berat kering tanaman, serta menurunkan pH (H₂O) tanah dan kadar Ca dd. Pemberian dosis *mycorrhiza* dan macam bahan organik berinteraksi dalam meningkatkan berat kering tanaman umur 6 MST .

Kata Kunci : Bahan Organik, *Mycorrhiza*, Lahan Bekas Tambang Kapur, Ketersediaan P, Pertumbuhan Jagung.

**THE EFFECTS OF MYCORRHIZAE AND ORGANIC MATTERS
APPLICATION ON SOIL P AVAILABILITY OF LIMESTONE POST
MINING AND THE GROWTH OF MAIZE IN KARANGDAWA
VILLAGE, TEGAL REGENCY**

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ABSTRACT

Limestone post mining soil had high levels of calcium carbonate and pH, this condition causing a lack of soil P availability, so that the application of mycorrhizae and organic matter is necessary. This study aims to determine the effect of mycorrhizae and types of organic matter, and the best combination of mycorrhizae and types of organic matter on soil P availability of limestone post mining and growth of maize. This study was conducted at the Greenhouse in Taman Teknologi Pertanian Lebaksiu, Tegal Regency, Central Java, from February to May 2019. This study used a Completely Randomized Design (CRD) with two factors. The first factor was the dose of mycorrhizae, namely without mycorrhizae (M0), mycorrhizae 10 g / pot (M1), and mycorrhizae 20 g pot (M2). The second factor was the type of organic matter, namely without organic matter (B0), cow manure 20 tons / ha (B1), corn litter 20 tons / ha (B2), and legumes liter 20 tons / ha (B3). Each treatment was repeated 3 times. The result shows that the application of mycorrhizae had a significant effect on the increasing C-organic soil, Cation Exchange Capacity (CEC), plant height and plant dry weight, but it did not significantly affect on P-available, Ca and Mg. The application of various types of organic matter had a significant effect on the increasing P-available, C-Organic soil, CEC, plant height, and plant dry weight, and decreasing soil pH (H₂O) and Ca, but it did not significantly affect on Mg. There was an interaction between mycorrhizae doses and kinds of organic on the increasing plant dry weight of 6 WAP.

Keywords: Mycorrhizae, Organic Matters, Limestone Post Mining Soil, P-Availability, Growth of Maize.