

**PENGARUH PEMBERIAN *BIOCHAR* DAN WAKTU INKUBASI
TERHADAP N TOTAL DAN P TERSEDIA PADA INCEPTISOL YANG
DITANAMI PADI DI DESA POTORONO, BANGUNTAPAN, BANTUL,
YOGYAKARTA**

Oleh : Bayu Prayogo

Dibimbing oleh: Dr. Ir. S . Setyo Wardoyo, MS dan Dr. Ir. Susila Herlambang
M.Si

ABSTRAK

Biochar adalah bahan yang dapat meningkatkan kesuburan tanah melalui perbaikan kondisi tanah. Upaya menuju kedaulatan pangan dan keamanan pangan pemerintah menitik beratkan pada kebijakan pertanian yang bersifat keberlanjutan. Kedaulatan pangan dapat tercapai dengan melakukan teknologi pertanian dengan menggunakan *Biochar* yang dapat meningkatkan ketersediaan hara makro terutama N dan P. Tanah Inceptisol memiliki kadar lempung dan bahan organik yang rendah sehingga tingkat kesuburan tanah rendah, oleh karena itu perlu di berikan *Biochar* untuk meningkatkan kesuburan tanah. Salah satu fungsinya adalah memperbaiki tingkat kesuburan tanah. *Biochar* mengandung unsur hara N dan P sehingga akan memperbaiki tingkat kesuburan tanah. Tujuan penelitian ini adalah mengetahui N total dan P tersedia setelah tanah di tanami padi dengan perlakuan *Biochar* pada Inceptisol. Penelitian menggunakan *Biochar* dengan dosis, 0 ton/ha, 10 ton/ha, 15 ton/ha, 20 ton/ha. Perlakuan tanah dengan inkubasi pada 1, 2, 3 bulan serta di ulang 3 kali sehingga di peroleh 36 pot. Penelitian di pot dilakukan di rumah kaca Fakultas Pertanian UPN “Veteran” Yogyakarta dan dilanjutkan dengan analisis di laboratorium. Metode yang digunakan pada penelitian di rumah kaca adalah metode Rancangan Acak Lengkap (RAL) pada Faktorial dengan 2 faktor yaitu dosis *Biochar* dan waktu inkubasi berbeda, menggunakan ANOVA dengan uji F dan uji beda nyata pada taraf DMRT 5%. Parameter yang diamati meliputi N total, P tersedia, C-organik Kapasitas Pertukaran Kation (KPK), pH H₂O dan Tinggi Tanaman Padi. Hasil penelitian menunjukkan jumlah N Total tertinggi 0,08 % di peroleh pada dosis 20 ton/ha dengan waktu inkubasi selama 3 bulan, sedangkan unsur P tersedia tertinggi sebesar 62,83 ppm pada dosis 15 ton/ha dengan waktu inkubasi 1 bulan.

Kata kunci : *Biochar*, C organik, Inceptisol, N total, dan P tersedia

EFFECTS OF BIOCHAR AND INCUBATION TIME ON N-TOTAL AND P-AVAILABLE IN INCEPTISOL SOIL WITH RICE PLANTATION IN POTORONO VILLAGE, BANGUNTAPAN, BANTUL, YOGYAKARTA

By : Bayu Prayogo

Supervised by: Dr. Ir. S . Setyo Wardoyo, MS and Dr. Ir. Susila Herlambang M.Si

ABSTRACT

Biochar is a material that could increase soil fertility by restore the soil condition itself. In order to form the food sovereignty and food safety, the government emphasize on sustainable agricultural policy. Food sovereignty could be reach with improving the agricultural technology by using biochar that can increase the availability of macro nutrients, especially N and P. Inceptisols has low content of clay and organic matter that also makes Inceptisol's fertility is low, therefore by giving biochar will improve the soil fertility. One of the function of biochar is to increase the sil fertility. Biohar consist of 0,94% total N and 0,63% total P as macro nutrient that will increase the soil fertility. The aim of this research is to know the availability of N and P at planted rice Inceptisols after given biochar treatment. Biochar that used in this research has different dose, 0 ton/ha, 10 ton/ha, 15 ton/ha, and 20 ton/ha for each. Treatment that was given were incubating soil on its 1st, 2nd, and 3rd month and was repeated 3 times until there were 36 pot. This research by using pot was conducted at Agriculture Faculty of UPN "Veteran" Yogyakarta's Greenhouse and Laboratory for analysis. Methods that used in this research was Factorial Complete Randomized Design with 2 factors which were different dosage of biochar and different incubation time by using F test and significant different test on 5% of DMRT. Parameters that was observed and analyzed in this research were N-Total, P-Available, C-Organic, Cation Exchange Capacity (CEC), pH H₂O and the heights of rice stem. The result of this research showed that the highest N-Total with 0,08% was found on 20 ton/ha dosage with 3 months of incubation time, while the highest P available with 62,83 ppm was found on 15 ton/ha dosage with 1 month of incubation time which is on very high grade.

Key words : Biochar, Organic-C, Inceptisols, Total-N, and available-P