

**Kajian Kadar C Organik Setelah Aplikasi Biochar  
Pada ANTHRAQUIC TYPIC EPIAQUEPTS Di Potorono Yogyakarta**

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**Abstrak**

Tanah sawah *Anthraquic Typic Epiaquepts* di Potorono, Banguntapan, Bantul, Yogyakarta merupakan bekas tambang batu bata sehingga *top soil* sudah hilang. Tanah *Anthraquic Typic Epiaquepts* mempunyai kadar C organik dan unsur hara masih rendah. Residu dari biochar, kotoran sapi dan ampas tebu diharapkan mampu menaikkan untuk kadar C organik dan unsur hara tanah setelah tanam pertama sampai setelah tanam kedua tanaman padi. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh residu *ameliorant* dan inkubasi pada dua musim pertanaman tanaman padi terhadap kadar C organik, N total, P tersedia, pH(H<sub>2</sub>O) dan KPK. Penelitian ini menggunakan *Split Plot* dengan Rancangan Acak Kelompok (RAK). Dosis yang digunakan 15 ton/ha pada tanah dengan residu *biochar* tempurung kelapa, ampas tebu dan kotoran sapi dan terdapat 36 petak percobaan. Pengaplikasian bahan sudah dilakukan pada tanggal 7 April 2018 oleh peneliti terdahulu, adapun pengaruh residu diamati oleh peneliti setelah musim tanam pertama tanaman padi tanggal 23 November 2018 dan kedua tanggal 7 Maret 2019. Parameter yang diamati C organik, N-Total, P-Tersedia, pH(H<sub>2</sub>O), Kapasitas Tukar Kation (KPK). Hasil penelitian menunjukkan tanah dengan residu *Biochar* tempurung kelapa menunjukkan tidak beda nyata pada C organik, N-total, Kapasitas Pertukaran Kation dan pH(H<sub>2</sub>O) tanah. Namun berbeda nyata pada P-tersedia tanah. Residu *biochar* mempunyai kadar C organik paling tinggi yaitu 1,76%. Residu *biochar* tempurung kelapa dapat meningkatkan KPK dari 5,83 cmol(+)kg<sup>-1</sup> menjadi 7,85 cmol(+)kg<sup>-1</sup>. P-tersedia tanah residu *biochar* tempurung kelapa menunjukkan hasil yang paling tinggi yaitu 20,32 ppm.

**Kata Kunci** : *Anthraquic Typic Epiaquepts*, *Biochar* Tempurung Kelapa, C organik, Musim Tanam II Setelah Perlakuan, Residu

# **STUDY ON THE C ORGANIC LEVEL AFTER BIOCHAR APPLICATION**

## **ON THE ANTHRAQUIC TYPIC EPIAQUEPTS AT POTORONO**

### **YOGYAKARTA**

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### **ABSTRACT**

A paddy field of *Anthraquic Typic Epiaquepts* at Potorono, Banguntapan, Bantul, Yogyakarta was a brick mine so that the top soil had been lost. It has low nutrients and organic C level. The effect of residue soil ameliorant ie: biochar, cow dung and bagasse, hopefully, can increase the organic C level and nutrients after both first and second planting. The purpose of this study was to determine the effect of the residual ameliorant and incubation in two seasons of paddy plantation of organic C levels, total N, P available, pH(H<sub>2</sub>O) and Cation Exchange Capacity (CEC). This study used a split plot on Randomized Block Design (RBD) method. The dosage used was 15 tons/ha of coconut shell biochar residue, sugarcane bagasse, and cow dung and there were 36 experiment plots. The application of the material was carried out on April 7, 2018 by the previous researcher, while the residual effect was observed by the researchers after the first planting season of rice plants on November 23, 2018 and after the second planting season of rice plants on March 7, 2019. The parameters observed were organic C, N-Total, P-Available, pH (H<sub>2</sub>O), Cation Exchange Capacity (CEC). The results shows that the soil with residual Biochar coconut shell has no significant difference in C organic, total N, pH(H<sub>2</sub>O), and Cation Exchange Capacity (CEC), but it is significantly different in P-available soil. The residual biochar has the highest organic C level of 1.76%. The residual Biochar coconut shell can increase the Cation Exchange Capacity (CEC) from 5.83 Cmol(+)kg<sup>-1</sup> to 7.85 Cmol(+)kg<sup>-1</sup>. The P-available soil with residual Biochar coconut shell is the highest, which is 20.32 ppm.

Keyword : *Anthraquic Typic Epiaquepts*, *Biochar* coconut shell, C organic, planting season II after treatment, residue