

**GROWTH AND PERFORMANCE OF MAIZE TREATED WITH  
DIFFERENT TYPES OF BIOCHAR GROWN IN LATERITIC SOIL**

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## ABSTRACT

### **GROWTH AND PERFORMANCE OF MAIZE TREATED WITH DIFFERENT TYPE OF BIOCHAR GROWN IN LATERITIC SOIL**

This study was conducted to investigate the effect of biochar on the growth performance of maize grown on lateritic soil. This experiment was conducted at Universiti Teknologi MARA, Perlis. The twelve treatments inclusive of control treatment were used Cattle dung biochar (CDB), Chicken manure biochar (CMB), Rice husk biochar (RHS) and Coconut shell biochar (CSB) at rate 10, 20 and 40 ton/ha. The experiment design was completely randomize design (CRD) with 3 replications. The biochar treatment was applied a week before planting. Plant height, plant girth leaf area meter and number of leaf were recorded at the 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup>, and 8<sup>th</sup> week after planting. After 8<sup>th</sup> week of planting the plants were harvested. The nutrient content in leaf and soil were determined by standard procedures. It was found that, the cattle dung biochar (CDB) showed the positive result in plant height and girth. Beside that the soil pH were increase by applying chicken manure biochar (CMB) at rate 40 ton/ha. Therefore it might be recommended to use biochar as an alternative fertilizer to improve plant growth and soil properties also act as liming to increase the soil pH.

## **ABSTRAK**

### **PERTUMBUHAN DAN PERKEMBANGAN JAGUNG DENGAN MENGGUNAKAN JENIS PERAWATAN BIOCHAR YANG BERBEZA**

Kajian ini dijalankan untuk mengkaji kesan-kesan biochar kepada perkembangan dan pertumbuhan jagung yang ditanam di tanah laterit. Kajian ini telah dijalankan di Universiti Teknologi MARA Perlis. Sebanyak dua belas perawatan termasuk kawalan telah digunakan. Rawatan yang digunakan adalah biochar tahi lembu, biochar tahi ayam, biochar sekam padi dan biochar tempurung kelapa pada kadar 10, 20, dan 40 tan/ha. Rekabentuk eksperimen ini adalah Rekabentuk Rawak Lengkap dengan 3 replikasi. Perawatan biochar telah digunakan seminggu sebelum penanaman. Ketinggian tumbuhan, ukur lilit, luas daun dan bilangan daun dicatat pada minggu ke 2, 4, 6, dan minggu ke-8 selepas ditanam. Selepas 8 minggu penanaman, pokok akan di tuai. Kandungan nutrient di dalam daun dan tanah ditentukan oleh kaedah yang ditetapkan. Dalam kajian ini ianya mendapati bahawa, biochar tahi lembu menunjukkan ketinggian pokok yang lebih tinggi dan lilitan tumbuhan. Di samping itu, pH tanah telah meningkat dengan menggunakan biochar tahi ayam pada kadar 40 tan/ha. Oleh itu, penggunaan biochar disyorkan sebagai baja gantian untuk pertumbuhan pokok dan keperluan tanah yang juga bertindak sebagai pengapuran untuk meningkatkan pH tanah.

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