

## **ABSTRACT**

### **THE EFFECT OF THE APPLICATION OF RICE HUSK BIOCHAR AND TRICHOCOMPOST ON THE GROWTH AND YIELD OF PAKCOY (*Brassica rapa* L.) CULTIVATION**

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The use of synthetic fertilizer affects on soil fertility, such as the structure of soil is becoming hard, there is no biological activity in soil, and the harmony of nutrient elements in soil is distracted. Therefore, to repair the condition of soil, it needs to use rice husk-biochar and trychocompos in a balance number. The purpose of this study is to see the affect of rice husk-biochar and trychocompos due to growth and productivity of Pakcoy, and also the affect of using trychocompos efficiently. This study was using complete randomised factorial design. There are two factor, the first factor was biochar dose (0 g, 50 g, 100 g), and another factor was trychocompose dose (0 g, 500 g, 1000 g, 1500 g), each treatment was repeated 3 times. Rice husk - biochar factor was significantly affected to evapotranspiration, plant height, number of leaf, wide of canopy, fresh gross weight, water productivity, and fertilizer productivity. But it was not significantly affected to soil solidity and soil pH. Trychocompos factor was significantly affected to soil solidity, plant height, number of leaf, green color of leaf, wide of canopy, fresh gross weight, water productivity, and fertilizer productivity. But it was not significantly affected to soil pH and evapotranspiration. Adding 100g/pot of biochar dose could decrease recommendation of trychocompos, that is 1500 g/pot to 1000 g/pot according to study which had been done.

**key words :** Pakcoy, water productivity, fertilizer productivity

## ABSTRAK

### PENGARUH APLIKASI *BIOCHAR* SEKAM PADI DAN TRICHOKOMPOS TERHADAP PERTUMBUHAN DAN HASIL BUDIDAYA TANAMAN PAKCOY (*Brassica rapa* L.)

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Penggunaan pupuk kimia menimbulkan dampak negatif terhadap kesuburan tanah, struktur tanah (menjadi keras), mengurangi aktifitas biologis dalam tanah, dan mengganggu keseimbangan unsur hara pada tanah. Untuk mengatasi hal tersebut aplikasi *biochar* sekam padi dan pupuk trichokompos dalam jumlah berimbang perlu dilakukan untuk memperbaiki kondisi tanah. Penelitian ini bertujuan untuk melihat pengaruh penambahan *biochar* sekam padi dan trichokompos terhadap pertumbuhan dan produktivitas tanaman pakcoy. Penelitian disusun dalam Rancangan Acak Lengkap (RAL) faktorial dengan dua faktor yaitu dosis *biochar* (A) dengan 3 taraf dosis yaitu 0 gram, 50 gram dan 100 gram per pot, dan dosis trichokompos (B) dengan 4 taraf yaitu 0 gram, 500 gram, 1000 gram, dan 1500 gram per pot. Masing-masing perlakuan dilakukan 3 kali ulangan. Hasil penelitian menunjukkan bahwa faktor *biochar* sekam padi berpengaruh nyata pada evapotranspirasi, tinggi tanaman, jumlah daun, luas kanopi, total bobot segar, produktivitas air dan produktivitas pupuk, tetapi tidak berbeda nyata pada kepadatan tanah dan pH tanah. Sedangkan faktor trichokompos berpengaruh nyata pada kepadatan tanah, tinggi tanaman, jumlah daun, warna hijau daun, luas kanopi, total bobot segar, produktivitas air dan produktivitas pupuk, tetapi tidak berbeda nyata pada pH tanah dan evapotranspirasi. Hasil penelitian juga menunjukkan bahwa penambahan *biochar* dengan dosis 100 gram/pot dapat meningkatkan efektivitas trichokompos dan mengurangi dosis trichokompos rekomendasi (1500 gram/pot) menjadi 1000 gram/pot.

**Kata kunci :** Tanaman pakcoy, produktivitas air, produktivitas pupuk.