

## RINGKASAN

Tingginya minat masyarakat terhadap selada membuat permintaan selada terus meningkat, namun permintaan selada yang semakin banyak tidak sejalan dengan hasil produksi selada yang dilakukan oleh petani Indonesia. Dalam upaya peningkatan produksi selada dalam negeri, penggunaan pupuk kimia secara terus menerus dilakukan pada lahan tanpa adanya masukan bahan organik yang cukup mengakibatkan penurunan kesuburan tanah yang akan berpengaruh pula pada pertumbuhan tanaman selada. Pemberian *biochar* dan pupuk hayati dapat menjadi solusi untuk memperbaiki kesuburan tanah. Tujuan dari penelitian ini adalah 1) mengetahui pengaruh dosis *biochar* terhadap pertumbuhan dan hasil tanaman selada; 2) mengetahui pengaruh dosis pupuk hayati terhadap pertumbuhan dan hasil tanaman selada; dan 3) mengetahui interaksi antara pemberian *biochar* dan pupuk hayati terhadap pertumbuhan dan hasil tanaman selada.

Penelitian dilaksanakan pada bulan Desember 2020 hingga Maret 2021 di lahan sawah Sumampir, Purwokerto dengan ketinggian tempat  $\pm 100$  mdpl, jenis tanah inceptisol dan Laboratorium Agronomi dan Hortikultura Fakultas Pertanian, Universitas Jenderal Soedirman. Rancangan percobaan yang digunakan yaitu Rancangan Acak Kelompok Lengkap (RAKL) faktorial, dengan 2 faktor. Faktor pertama adalah dosis *biochar* dengan 3 taraf yaitu 0, 2, dan 4 ton/ha. Faktor kedua adalah pupuk hayati dengan 3 taraf yaitu 0, 5, dan 10 L/ha. Kombinasi perlakuan antara 2 faktor didapatkan 9 perlakuan dan setiap perlakuan diulang 3 kali. Variabel yang diamati yaitu tinggi tanaman, jumlah daun, luas daun, bobot tajuk segar, bobot tajuk kering, bobot akar segar, bobot akar kering, kandungan klorofil, suhu, kelembaban udara, intensitas cahaya, dan pH tanah. Data hasil penelitian dianalisis menggunakan uji F, apabila nyata maka dilanjutkan dengan Uji Faktorial Regresi, dengan taraf kesalahan 5%.

Hasil penelitian menunjukkan bahwa aplikasi *biochar* pada dosis 2 ton/ha memberikan bobot akar segar paling tinggi. Pemberian pupuk hayati tidak memberikan pengaruh yang berbeda antar perlakuan. Namun, terdapat interaksi antara pemberian *biochar* sebanyak 2 ton/ha dan pupuk hayati sebanyak 10 L/ha dan berpengaruh pada bobot tajuk segar dan bobot akar segar.

## SUMMARY

*The high public interest in lettuce makes the demand for lettuce continue to increase, but the growing demand for lettuce is not in line with the results of lettuce production carried out by Indonesian farmers. In an effort to increase the production of lettuce in the country, the continuous use of chemical fertilizers on the land without sufficient input of organic matter resulted in a decrease in soil fertility that will also affect the growth of lettuce plants. The provision of biochar and biological fertilizers can be a solution to improve soil fertility. The research is aimed to 1) to determine the influence of biochar doses on the growth and yield of lettuce; 2) determine the influence of biological fertilizer doses on the growth and yield of lettuce; and 3) know the interaction between the provision of biochar and biological fertilizers to the growth and yield of lettuce plants.*

*The research was carried out from December 2020 to March 2021 in Sumampir rice fields, Purwokerto with a height of  $\pm$  100 meters above sea level, inceptisol soil type and Agronomy and Horticultural Laboratory of the Faculty of Agriculture, Jenderal Soedirman University. The experimental design used was a completely randomized block design (RAKL), with 2 factors. The first factor is the dose of biochar with 3 levels, 0, 2, and 4 ton/ha. The second factor is dose of biological fertilizer with 3 levels, 0, 5, and 10 L/ha. The combination of treatment between 2 factors obtained 9 treatments and each treatment repeated 3 times. The observed variables were plant height, leaf count, leaf area, fresh header weight, dry header weight, fresh root weight, dry root weight, chlorophyll content, temperature, air humidity, light intensity, and soil pH. The research data were analyzed using F test, if real then continued with Regression Factorial Test, testing using 5% error level.*

*The results showed that the application of biochar at a dose of 2 tons/ha gave the highest fresh root weight. The application of biological fertilizers did not have a different effect between treatments. However, there is an interaction between the application of biochar as much as 2 tons/ha and biofertilizer as much as 10 L/ha and it affects the fresh crown weight and fresh root weight.*