

**PEMANFAATAN KOMPOS ECENG GONDOK (*Eichornia crassipes*) DAN
PENGARUHNYA TERHADAP AKTIVITAS MIKROORGANISME
TANAH SERTA PERTUMBUHAN TANAMAN SELADA (*Lactuca sativa*
L.) PADA INCEPTISOL**

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ABSTRAK

Permintaan terhadap selada mengalami peningkatan, sementara itu produksi selada mengalami penurunan. Salah satu penyebabnya adalah penurunan kesuburan tanah. Eceng gondok merupakan salah satu sumber bahan organik yang dapat digunakan sebagai bahan baku kompos. Kompos eceng gondok mampu meningkatkan kesuburan tanah dan aktivitas mikroorganisme tanah. Penelitian telah dilaksanakan di Padang Laweh, Kecamatan Sungai Pua, Kabupaten Agam pada bulan Juni sampai November 2018. Analisis tanah dan tanaman dilakukan di Laboratorium Kimia dan Kesuburan tanah serta Laboratorium Mikrobiologi Fakultas Pertanian Universitas Andalas. Penelitian bertujuan untuk mengetahui manfaat kompos eceng gondok dan pengaruhnya terhadap aktivitas mikroorganisme tanah dan pertumbuhan selada. Penelitian merupakan percobaan lapangan yang terdiri dari 5 perlakuan (0; 1,5; 3; 4,5; 6 ton kompos/ha) dengan 3 ulangan. Unit percobaan menggunakan Rancangan Acak Lengkap (RAL). Hasil penelitian terbaik menunjukkan pemberian kompos dengan dosis 6 ton/ha mampu meningkatkan total populasi bakteri sebesar 1,58 cfu/g tanah, populasi jamur sebesar 0,65 cfu/g tanah, respirasi sebesar 93,8 mgCO₂/m²/hari, dan biomassa C mikroorganisme sebesar 0,08 mgC/g tanah dibandingkan kontrol. Takaran 6 ton/ha mampu meningkatkan sifat kimia Inceptisol seperti peningkatan pH sebanyak 1,03 unit, C-organik 1,48 %, kandungan N, P, dan K tanah sebesar 0,36%, 3,89 ppm, dan 0,63 mg/100g tanah. Takaran ini meningkatkan pertumbuhan selada (*Lactuca sativa* L.), terutama peningkatan tinggi tanaman sebanyak 5,57 cm, jumlah daun 8 helai, bobot basah 58,93 g, bobot kering 2,09 g, serta angkutan hara N, P, dan K sebanyak 17,5 mg/tanaman, 2,39 mg/tanaman, dan 2,69 mg/tanaman dibandingkan dengan kontrol.

Kata kunci : Kompos, Mikroorganisme Tanah, Inceptisol, Selada

UTILIZING OF COMPOST FROM WATER HYACINT (*Eichornia crassipes*) AND ITS THE EFFECT TO SOIL MICROORGANISM ACTIVITIES AND GROWTH OF LATTUCE PLANT (*Lactuca sativa* L.) IN INCEPTISOL

ABSTRACT

The demand for lettuce (*Lactuca sativa* L.) has increased, but lettuce production has decreased. One reason for the decline in production is a decrease in soil fertility. Water hyacinth is one source of organic material that can be used as raw material for compost. The water hyacinth compost can improve soil fertility and soil microorganism activity. The research was conducted in Padang Laweh, Sungai Pua District, Agam Regency from June to November 2018. Soil and plants analysis was conducted in the Laboratory of Chemical and Soil Fertility as well as the Laboratory of Microbiology, Faculty of Agriculture, Universitas Andalas. The study aimed to determine the benefits of water hyacinth compost and its effect on soil microorganism activity and growth of lettuce. The study was a field experiment using a completely randomized design (CRD) consisting of 5 treatments (0; 1.5; 3; 4.5; and 6 tons of compost/ha) with 3 replications. The results showed that giving compost at a dose of 6 tons/ha was able to increase the total bacterial population by 1.58 cfu/g soil, mushroom population by 0.65 cfu/g soil, respiration at 93.8 mgCO₂/m²/day, and microorganism C biomass of 0.08 mgC/g soil compared to control. The dose of 6 tons/ha can increase the chemical properties of Inceptisol such as increasing pH by 1.03 units, organic C-1.48%, N, P, and K soil content of 0.36%, 3.89 ppm, and 0.63 soil mg/100g. This dose increases the growth of lettuce, especially an increase in plant height of 5.57 cm, number of leaves of 8 strands, wet weight of 58.93 g, dry weight of 2.09 g, and nutrient transport of N, P and K as much as 17.5 mg/plants, 2.39 mg/plant, and 2.69 mg/plant compared to controls.

Keywords: Compost, Soil Microorganism, Inceptisol, Lettuce