

ABSTRAK

PERTUMBUHAN DAN PRODUKSI TANAMAN BAYAM BRAZIL (*Aternanthera sissoo*) AKIBAT PEMBERIAN PUPUK KANDANG AYAM DENGAN KONTROL AIR OLEH ARDUINO UNO

Oleh

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Tanaman Bayam Brazil merupakan bayam baru yang berpotensi dikembangkan di Indonesia karena peluang pasar yang baik dan kebutuhan konsumen yang meningkat. Salah satu alternatif untuk meningkatkan produktivitas tanaman dapat dengan pemberian bahan organik seperti pupuk organik. Jenis pupuk organik yang diharapkan dapat meningkatkan produktivitas tanaman ialah pupuk kandang ayam. Penelitian ini bertujuan untuk mengetahui kemampuan pupuk kandang ayam dalam meningkatkan ketersediaan air yang akan berpengaruh terhadap pertumbuhan dan produksi tanaman bayam brazil. Penelitian dilaksanakan pada Januari-Juni di Rumah Kaca, Laboratorium Lapang Terpadu, Fakultas Pertanian, Universitas Lampung. Penelitian disusun dalam Rancangan Acak Kelompok yang terdiri dari 4 perlakuan dan 4 ulangan, yaitu Pupuk kandang ayam: P0 (Tanpa pupuk kandang ayam), P1 (Pupuk kandang ayam 10 ton/ha), P2 (Pupuk kandang ayam 20 ton/ha), P3 (Pupuk kandang ayam 30 ton/ha). Aditifitas data diuji menggunakan uji Tuckey, homogenitas data diuji menggunakan uji Bartlett. Selanjutnya dilakukan analisis ragam dan uji nilai tengah menggunakan uji DMRT (*Duncan multiple range test*) pada taraf 5%. Hasil penelitian menunjukkan bahwa dosis terbaik terdapat pada perlakuan pupuk kandang ayam 20 ton/ha pada beberapa variabel yaitu tinggi tanaman, berat segar tanaman, berat kering tanaman, lebar tajuk, dan jumlah daun. Dosis pupuk kandang ayam 30 ton/ha meskipun menyediakan lebih banyak nutrisi, tetapi dapat memberikan efek yang tidak diinginkan, yaitu tanah menjadi terlalu jenuh dengan air sampai terdapatnya lumut pada media tanam dan tidak menghasilkan pertumbuhan yang baik.

Kata kunci: pupuk kandang ayam, kadar air tanah, pertumbuhan dan produksi, bayam brazil, arduino uno

ABSTRAK

GROWTH AND PRODUCTION OF BRAZILIAN SPINACH (*Alternanthera sissoo*) PLANT DUE TO PROVIDING CHICKEN MANURE WITH WATER CONTROL BY ARDUINO UNO

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Brazilian spinach plants have the potential to be developed in Indonesia because of good market opportunities and being able to meet increasing consumer needs. One alternative to increase plant productivity is by providing organic materials such as organic fertilizer. The type of organic fertilizer that is expected to increase plant productivity is chicken manure. This study tested the ability of chicken manure to bind water which will have an effect on increasing the growth and production of Brazilian spinach plants on dry land with a field capacity water levels of 20% -40%. Research was carried out in January-June in the Greenhouse, Integrated Field Laboratory, Faculty of Agriculture, University of Lampung. The research was arranged in a Randomized Block Design consisting of 4 treatments and 4 replications: P0 (No chicken manure), P1 (10 tons/ha chicken manure), P2 (20 tons/ha chicken manure), P3 (30 tons/ha chicken manure). The research results indicated that based on DMRT at a significance level of 5%, the application of chicken manure had a significant effect on the growth and production of Brazilian spinach plants. Providing chicken manure at a dose of 20 tons/ha gave the best results for several observed variables. These variables include plant height, plant fresh weight, plant dry weight, canopy width, and number of leaves. Providing chicken manure with different doses had no significant effect on root length, root wet weight, root dry weight, stem diameter and leaf width. Chicken manure can increase water availability for Brazilian spinach plants from field capacity water content of 43.58% to 55%. Observations of daily water content showed that 30 tons/ha of chicken manure treatment resulted in the highest increase in water content.

Kata kunci: Chicken manure, soil water content, growth and production of Brazilian spinach plants, Arduino uno