

Maulani Ainun Yulistiya. (170311100002). Efektivitas Pupuk Bio-Slurry Padat Terhadap Pertumbuhan dan Kandungan Flavonoid Bayam Merah (*Amaranthus gangeticus* L.) Dibimbing Oleh: Mustika_Tripatmasari, S.P., M.Si. dan Ir. Slamet Supriyadi, M.Si.

ABSTRAK

Bio-slurry merupakan produk ampas biogas dari kotoran sapi berupa material semi-solid (cenderung padat), memiliki kandungan N P K (1,4%, 0,53%, 0,52%) (Tim Biogas rumah, 2013).. Penelitian ini bertujuan untuk mempelajari pertumbuhan dan kandungan flavonoid pada bayam merah (*Amaranthus gangeticus* L.) akibat penambahan bioslurry. Penelitian dilaksanakan di Green house Agroekoteknologi Universitas Trunojoyo Madura, yang berada pada ketinggian $\pm$ 5 mdpl dari November 2020 hingga Januari 2021. Rancangan yang digunakan pada penelitian ini yaitu Rancangan Acak Lengkap (RAL) non faktorial. Hal ini karena media percobaan yang digunakan dan keadaan tempat penelitian relatif homogen. Dosis bio-slurry padat terdiri dari 6 taraf yaitu : (P0) kontrol, (P1) 5 ton/ha, (P2) 10 ton/ha, (P3) 15 ton/ha, (P4) 20 ton/ha, dan (P5) 25 ton/ha. Data hasil pengamatan dianalisis menggunakan Analisis Sidik Ragam (Ansira) berdasarkan uji F pada taraf 5% kemudian dilanjutkan dengan Uji Beda Nyata Jarak Duncan (BNJD) pada taraf 5%. Kandungan bio-slurry padat yang di analisis di laboratorium Universitas Trunojoyo, mengandung NPK sebesar (1,4%, 0,53% dan 0,52%). Hasil penelitian menunjukkan bahwa perlakuan pemberian pupuk bio-slurry padat berpengaruh nyata terhadap variabel pengamatan tinggi tanaman, jumlah daun, luas daun, panjang akar , bobot basah tanaman serta kandungan flavonoid pada bayam merah. Pemberian bioslurry 20 ton/ha (dosis N: 280 kg/ha) menghasikan kandungan flavonoid tertinggi; yaitu dua kali (200%) dari kandungan flavonoid pada kontrol. Peningkatan dosis bioslurry hingga 25 ton/ha (N = 350 kg/ha) justru menurunkan kandungan flavonoid, hal ini kemungkinan disebabkan oleh penurunan aktivitas fenilalanine ammonia- lyase akibat peningkatan N yang berlebihan, sehingga akumulasi flavonoid menurun.

Kata kunci: bayam merah, bio-slurry, flavonoid

Maulani Ainun Yulistiya. (170311100002).The effectivity of Bio-slurry - based fertilizer on Growth and Flavonoid Content in Red Spinach (*Amaranthus gangeticus* L.) Supervised by: Mustika Tripatmasari, S.P., M.Si. and Ir. Slamet Supriyadi, M.Si.

ABSTRACT

Bio-slurry is a product of biogas waste from cow dung in the form of semi-solid material (tends to be solid), containing NPK (1.4%, 0.53%, 0.52%) (House Biogas Team, 2013).. This research aims to study the growth and content of flavonoids in red spinach (*Amaranthus gangeticus* L.) due to the addition of bioslurry. The research was carried out at the Greenhouse Agroecotechnology, Trunojoyo University, Madura, which is located at an altitude of ± 5 masl from November 2020 to January 2021. The design used in this study was a non-factorial Completely Randomized Design (CRD). This is because the experimental media used and the state of the research place are relatively homogeneous. The dose of solid bio-slurry consisted of 6 levels, namely: (P0) control, (P1) 5 tons/ha, (P2) 10 tons/ha, (P3) 15 tons/ha, (P4) 20 tons/ha, and (P4) P5) 25 tons/ha. Observational data were analyzed using Analysis of Imprints of Variety (Ansira) based on the F test at the 5% level and then continued with the Duncan Distance Significant Difference Test (BNJD) at the 5% level. The content of solid bio-slurry which was analyzed in the Trunojoyo University laboratory contained NPK (1.4%, 0.53% and 0.52%). The results showed that the treatment with solid bio-slurry fertilizer had a significant effect on the observed variables of plant height, number of leaves, leaf area, root length and flavonoid content in red spinach. The application of 20 tons/ha of bioslurry (N dose: 280 kg/ha) resulted in the highest flavonoid content; ie twice (200%) of the flavonoid content in the control. Increasing the dose of bioslurry up to 25 tons/ha (N = 350 kg/ha) actually decreased the flavonoid content, possibly due to a decrease in phenylalanine ammonia-lyase activity due to an excessive increase in N, resulting in decreased flavonoid accumulation.

Keywords: red spinach, bio-slurry, flavonoids

