

RINGKASAN

Putri Bella Puspita. 105040200111047. Pengaruh Biourine Sapi dan Berbagai Dosis N terhadap Tanaman Kailan (*Brassica oleraceae* L.). Di bawah bimbingan Dr. Ir. Mudji Santoso, MS dan Dr. Ir. Sitawati, MS.

Tanaman kailan (*Brassica oleraceae* L.) merupakan sayuran yang memiliki kandungan gizi seperti protein, mineral, dan vitamin serta rasa daun dan batang yang manis. Kebutuhan kailan yang semakin meningkat harus diikuti dengan peningkatan produksi kailan melalui teknik budidaya. Salah satu faktor yang mempengaruhi produksi tanaman ialah unsur hara. Di dalam tanah sudah tersedia unsur hara secara alamiah, namun perlu ditambahkan unsur hara yaitu pupuk. Penggunaan pupuk anorganik memegang peranan penting untuk menambah kebutuhan unsur hara tanaman. Tetapi, jika memakai pupuk anorganik secara terus menerus dapat merusak kondisi tanah. Oleh karena itu dibutuhkan bahan organik agar kondisi tanahnya membaik. Salah satu pupuk alam yang mengandung bahan organik ialah biourine sapi.

Tujuan penelitian ini ialah mengetahui pengaruh biourine sapi dan dosis N dengan komposisi yang terbaik pada tanaman kailan. Adapun hipotesis yang diusulkan ialah pemberian biourine sapi dan dosis N yang tepat akan memberikan hasil terbaik bagi tanaman kailan. Alat yang digunakan ialah ember, gembor, kertas label, refraktometer, LAM (*Leaf Area Meter*), penggaris, meteran, timbangan, *sprayer*, alat tulis dan kamera. Bahan yang digunakan ialah benih tanaman kailan, air untuk penyiraman, urine sapi, kotoran sapi, pupuk kandang dan pupuk urea (46% N).

Penelitian dilaksanakan pada bulan Januari sampai Maret 2014 di Ngujung, Batu. Penelitian ini menggunakan Rancangan Acak Kombinasi (RAK) Faktorial 9 perlakuan. Faktor 1 yaitu B1 = 10.000 ppm; B2 = 20.000 ppm; B3 = 30.000 ppm. Faktor 2 yaitu P1 = 100 kg N ha⁻¹ (urea 220 kg ha⁻¹); P2 = 75 kg N ha⁻¹ (urea 110 kg ha⁻¹ + pupuk kandang sapi 5 ton ha⁻¹); P3 = 50 kg N ha⁻¹ (pupuk kandang sapi 10 ton ha⁻¹). Petak percobaan berukuran 3x1m². Pengamatan pertumbuhan dilakukan pada 14, 21, 28, 35 dan 42 hst (panen). Komponen pengamatan pertumbuhan meliputi, tinggi tanaman, jumlah daun tanaman, luas daun, indeks luas daun, bobot segar tanaman, bobot kering tanaman, bobot segar total tanaman, bobot segar total konsumsi tanaman, dan indeks panen. Data hasil pengamatan dianalisis dengan uji F pada taraf 5% dan jika berbeda nyata maka dilanjutkan dengan uji BNT taraf 5%.

Hasil penelitian menunjukkan terdapat interaksi antara konsentrasi biourine dan dosis nitrogen terhadap semua parameter pertumbuhan dan hasil. Pemberian biourine 20.000 ppm dan pupuk anorganik 110 kg urea ha⁻¹ + pupuk organik 5 ton ha⁻¹ memberikan bobot segar total tanaman sebesar 21,28 ton ha⁻¹ dan meningkatkan 46,65% dari biourine 20.000 ppm dan pupuk organik 10 ton ha⁻¹ sebesar 14,51 ton ha⁻¹. Perlakuan ini sudah dapat mengurangi 50% pupuk anorganik dengan ditambahkan 5 ton ha⁻¹ pupuk organik berupa pupuk kandang sapi.

SUMMARY

Putri Bella Puspita. 105040200111047. Effect of Cow Biourine and Various Doses of N on Kale (*Brassica oleraceae* L.). Supervised by Dr. Ir. Mudji Santoso, MS and Dr. Ir. Sitawati, MS.

Kale (*Brassica oleraceae* L.) is a vegetable that contains nutrients such as protein, minerals, and vitamins and taste the leaves. Increasing the need to be followed by an increase in production through cultivation techniques. The necessary to increasing kale must be followed by environmental factors. One important factor that can affect the growth and production of plant is the availability of nutrients. In the soil has nutrients naturally, but need addition of nutrients by providing fertilizer. The use of inorganic fertilizers take an important role to increase the nutrient needs of plants. However, if using inorganic fertilizers continuously will cause deterioration of the soil. It is therefore necessary that the organic matter to improve soil conditions. One of the natural fertilizer containing organic matter is cow biourine.

The purpose of this research was to determine the effect of cow biourine and doses of N in the best composition on kale crops. The hypothesis was the provision cow biourine and proper doses of N will give the best results and growth for kale crop. The tools are trowel, hype, paper label, refractometer, LAM (Leaf Area Meter), ruler, meter, scales, sprayer, stationery and camera. The materials are kale plant seeds, water, cow urine, cow dung, cow manure and urea (46 % N).

The experiment was conducted in January to March 2014 in Ngujung, Batu. The study was conducted using a combination block design (RBD) Factorial with 9 treatments. Factor 1 are B1 = 10.000 ppm; B2 = 20.000 ppm; B3 = 30.000 ppm. Factor 2 are P1= 100 kg N ha⁻¹ (urea 220 kg ha⁻¹); P2 = 75 kg N ha⁻¹ (urea 110 kg ha⁻¹ + cow manure 5 t ha⁻¹); P3 = 50 kg N ha⁻¹ (cow manure 10 t ha⁻¹). Experimental plots measuring 3m x 1m. Observations made on the growth of 14, 21, 28, 35 and 42 dap (harvest). Observation component of growth include plant height, number of leaves of the plant, leaf area, leaf area index, plant fresh weight, plant dry weight, total plant fresh weight, fresh weight of the total consumption of the plant, and harvest index. The data were analyzed by F test at the 5% level and it will be significantly different if followed by LSD test level of 5 %.

The results showed that there is interaction between biourine concentration and doses of nitrogen on all of growth and yield parameters were observed. Giving biourine 20.000 ppm and 110 kg urea ha⁻¹ and 5 t ha⁻¹ organic fertilizer resulted in total plant fresh weight 21,28 t ha⁻¹ and increased 46,65% of biourine 20.000 ppm and 10 t ha⁻¹ as much as 14,51 t ha⁻¹. This application was decreased 50% inorganic fertilizer with additional 5 t ha⁻¹ organic fertilizer contained cow manure.