

ABSTRACT

Intan Widyastuti. A.1610507. Response of Edamame (*Glycine max* (L.) Merr.) Soybean Plants to the Administration of Organic Fertilizer Consisting of Cattle Urine and Leucaena Leaves. Under immediate supervision of Oktavianus and Arifah Rahayu.

This study was aimed at assessing the response of edamame soybean plants to the administration of liquid organic fertilizer (POC) made of cattle urine and leucaena leaves. The study was conducted from May to July 2018 at the Trial Farm of Department of Agrotechnology of Faculty of Agriculture, Djuanda University, Bogor. A completely randomized design in a factorial pattern with 17 treatment levels was used. Treatments consisted of POC made of cattle urine and leucaena leaves in the following levels: 1) 0% leucaena leaves + 0% cattle urine, 2) 0% leucaena leaves + 2.5% cattle urine, 3) 0% leucaena leaves + 5% cattle urine, 4) 0% leucaena leaves + 7.5% cattle urine, 5) 5% leucaena leaves + 20% cattle urine, 6) 5% leucaena leaves + 2.5% cattle urine, 7) 5% leucaena leaves + 5% cattle urine, 8) 5% leucaena leaves + 7.5% cattle urine, 9) 10% leucaena leaves + 0% cattle urine, 10) 10% leucaena leaves + 2.5% cattle urine, 11) 10% leucaena leaves + 5% cattle urine, 12) 10% leucaena leaves + 7.5% cattle urine, 13) 15% leucaena leaves + 0% cattle urine, 14) 15% leucaena leaves + 2.5% cattle urine, 15) 15% leucaena leaves + 5% cattle urine, 16) 15% leucaena leaves + 7.5% cattle urine, and 17) 100% urea. Results showed that edamame soybean plants gave different responses to the administration of POC consisting of cattle urine and leucaena leaves. The administration of the combinations of 2.5% cattle urine and 5% leucaena leaves and 7.5% cattle urine and 15% leucaena leaves was found to increase the number of single seed pods. In all parameters measured, no significant effects of cattle urine and leucaena leaf and urea administrations were found. It was also revealed that the combinations of cattle urine and leucaena leaves could not be used as a substitute for urea fertilizer.

Key words: *edamame, nitrogen, liquid organic fertilizer, synthetic fertilizer substitution.*

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ABSTRAK

Intan Widyastuti. A.1610507. Respon Tanaman Kedelai Edamame { *Glycine max* (L.) Merr. } terhadap Pemberian Pupuk Organik Cair Urine Sapi dan Daun Lamtoro. Di bawah bimbingan Oktavianus dan Arifah Rahayu.

Penelitian ini bertujuan untuk mengetahui respon tanaman kedelai edamame terhadap pemberian pupuk organik cair (POC) urine sapi dan daun lamtoro. Penelitian ini dilaksanakan pada bulan Mei sampai Juli 2018 di lahan percobaan Agroteknologi Universitas Djuanda Bogor. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) faktorial plus dengan 17 taraf perlakuan. Perlakuan yang dicobakan adalah POC urine sapi dan POC lamtoro yaitu : 1). lamtoro 0% + urine sapi 0%, 2). lamtoro 0% + urine sapi 2,5%, 3). lamtoro 0% + urine sapi 5%, 4). lamtoro 0% + urine sapi 7,5%, 5). lamtoro 5% + urine sapi 0%, 6). lamtoro 5% + urine sapi 2,5%, 7). lamtoro 5% + urine sapi 5%, 8). lamtoro 5% + urine sapi 7,5%, 9). lamtoro 10% + urine sapi 0%, 10). lamtoro 10% + urine sapi 2,5%, 11). lamtoro 10% + urine sapi 5%, 12). lamtoro 10% + urine sapi 7,5%, 13). lamtoro 15% + urine sapi 0%, 14). lamtoro 15% + urine sapi 2,5%, 15). lamtoro 15% + urine sapi 5%, 16). lamtoro 15% + urine sapi 7,5%, 17). Urea = urea 100%. Hasil penelitian menunjukkan bahwa pemberian POC urine sapi dan POC lamtoro memberikan respons yang berbeda terhadap tanaman kedelai edamame. Pemberian kombinasi POC urine sapi 2,5% dengan lamtoro 5% dan kombinasi POC urine sapi 7,5% dengan lamtoro 15% nyata meningkatkan jumlah polong berbiji satu. Pada semua peubah yang diamati tidak terdapat perbedaan antara tanaman yang diberi POC urine sapi dan lamtoro dengan yang diberi pupuk urea. Kombinasi POC urine sapi dan POC lamtoro dapat mensubstitusi pupuk urea.

Kata kunci : *edamame, nitrogen, pupuk organik cair, substitusi pupuk sintetik.*

