

**PENGARUH JENIS DAN LEVEL DOSIS PUPUK DAUN TERHADAP PRODUKSI DAN KECERNAAN IN VITRO TANAMAN KEMBANG TELANG (*Clitoria ternatea*) PADA PEMANENAN KEDUA**

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**INTISARI**

Tujuan penelitian adalah untuk mengetahui pengaruh pemberian jenis dan level dosis pupuk daun terhadap produksi, kecernaan bahan kering dan bahan organik secara *in vitro* tanaman kembang telang (*Clitoria ternatea*) pada pemanenan kedua. Penelitian dilakukan di Kebun Penelitian Hijauan Makanan Ternak dan Pastura, Universitas Gadjah Mada, Yogyakarta. Materi yang digunakan adalah bibit kembang telang sebanyak 96 tanaman, pupuk organik cair (POC) kelinci, dan pupuk Gandasil<sup>®</sup>D. Penelitian menggunakan rancangan acak lengkap (RAL) faktorial 2x4 dengan 3 ulangan. Faktor pertama yaitu jenis pupuk daun yaitu POC kelinci dan pupuk Gandasil<sup>®</sup>D. Faktor kedua yaitu level dosis pupuk daun yang terdiri dari 0, 1,5, 3 dan 4,5 g/l/plot. Parameter yang diamati yaitu tinggi tanaman (TT), diameter batang (DB), jumlah cabang (JC), luas daun (LD), persentase tanaman berbunga, produksi segar, produksi bahan kering, komposisi kimia (BK, BO, Abu, PK, SK, LK), kecernaan bahan kering (KcBK) dan bahan organik (KcBO) secara *in vitro*. Data dianalisis dengan analisis variansi, jika terdapat perbedaan nyata akan diuji lanjut dengan *Duncan's New Multiple Range Test* (DMRT) taraf 5%. Hasil penelitian menunjukkan perlakuan jenis pupuk daun tidak berpengaruh nyata terhadap produksi dan komposisi kimia kembang telang ( $P>0,05$ ), akan tetapi berpengaruh nyata terhadap KcBK dan KcBO secara *in vitro* ( $P<0,05$ ). KcBK dan KcBO tanaman kembang telang tertinggi diperoleh perlakuan pupuk Gandasil<sup>®</sup>D masing-masing sebesar 66,21 dan 63,07%. Perlakuan level dosis pupuk daun berpengaruh nyata terhadap TT, DB, JC, persentase tanaman berbunga, produksi segar, produksi bahan kering, kandungan protein kasar, serat kasar, KcBK dan KcBO tanaman kembang telang ( $P<0,05$ ), namun tidak berpengaruh nyata terhadap LD, kandungan bahan kering, bahan organik, dan lemak kasar ( $P>0,05$ ). Dosis 4,5 g/l/plot memberikan produksi segar dan produksi bahan kering tertinggi masing-masing sebesar 19,22 dan 16,75 ton/ha. Kandungan serat kasar terendah dicapai level dosis 4,5 g/l/plot yaitu sebesar 29,97%. Kandungan protein kasar akibat perlakuan pemupukan berkisar antara 23,64-24,59%. Perlakuan 4,5 g/l/plot diperoleh KcBK dan KcBO tertinggi masing-masing 67,46 dan 63,73%. Terdapat interaksi antara jenis dan level dosis pupuk daun terhadap KcBK dan KcBO tanaman kembang telang secara *in vitro* ( $P<0,05$ ). Kombinasi pupuk Gandasil<sup>®</sup>D dengan dosis pupuk 4,5 g/l/plot mendapatkan KcBK dan KcBO tertinggi masing-masing 68,66 dan 65,09%. Kesimpulan dari penelitian ini adalah jenis pupuk daun tidak mempengaruhi produksi dan komposisi kimia tanaman kembang telang akan tetapi dapat mempengaruhi kecernaan bahan kering (KcBK) dan bahan organik (KcBO) nya, sedangkan level dosis pupuk dapat meningkatkan produksi, komposisi kimia dan kecernaan bahan kering (KcBK) serta bahan organik (KcBO) tanaman kembang telang. Terdapat kombinasi antara jenis pupuk dengan level dosis pupuk daun terhadap kecernaan bahan kering

(KcBK) dan bahan organik (KcBO) kembang telang. Kombinasi pupuk Gandasil®D dengan level dosis pupuk 4,5 g/l/plot mendapatkan KcBK dan KcBO paling baik.

Kata kunci: Jenis pupuk daun, Level dosis pupuk, Produksi, *In vitro*, *Clitoria ternatea*

**EFFECT OF THE TYPE AND DOSAGE LEVEL OF FOLIAR FERTILIZER ON THE PRODUCTION AND *IN VITRO* DIGESTIBILITY OF BUTTERFLY PEA (*Clitoria ternatea*) IN THE SECOND HARVEST**

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**ABSTRACT**

The study aimed to determine the effect of the type and dose level of foliar fertilizers on the production, nutrient content and *in vitro* digestibility dry matter and organic matter of the butterfly pea (*Clitoria ternatea*) in the second harvest. The research was conducted at the Forage Research Garden for Animal Feed and Pasture, Universitas Gadjah Mada, Yogyakarta. The materials used were 96 plants of butterfly pea (*Clitoria ternatea*), rabbit liquid organic fertilizer, and Gandasil<sup>®</sup>D fertilizer. The study analysed by Completely Randomized Design (CRD) with factorial pattern of 2x4 by 3 replications. The first factor was the type of foliar fertilizer, namely rabbit liquid organic fertilizer and Gandasil<sup>®</sup>D fertilizer. The second factor was the level of fertilizer dosage consisting of 0, 1.5, 3 and 4.5 g/L/plot. Parameters observed were plant height, stem diameter, number of branches, leaf area, percentage of flowering plant, fresh and dry matter production, nutrient content (DM, OM, Ash, CP, CF, EE), *in vitro* dry matter and organic matter digestibility (IVDMD/IVOMD). Data were analyzed by variance analysis at 5%, continued with Duncan's Multiple Range Test (DMRT). The results showed that the treatment of different types of foliar fertilizers did not significantly affect the production and nutrient content of butterfly pea ( $P>0.05$ ), but had a significant effect on IVDMD and IVOMD ( $P<0.05$ ). The highest IVDMD and IVOMD of butterfly pea plant were obtained with Gandasil<sup>®</sup>D fertilizer treatment, which were 66.21 and 63.07%. The dose level treatment of foliar fertilizers had a significant effect on height plant, stem diameter, percentage of flowering plant, number of branches, fresh and dry matter production, crude protein (CP), crude fiber (CF), IVDMD, IVOMD ( $P<0.05$ ), but not significant effect on leaf area, dry matter (DM), organic matter (OM), and extract ether (EE) ( $P>0.05$ ). The fertilizer dose 4.5 g/l/plot gave the highest fresh and dry matter production, respectively 19.22 and 16.75 tons/ha. Fertilizer dose level treatment can reduce CF content, the lowest CF content is achieved at a dose level of 4.5 g/l/plot, which is 29.97%. Crude protein (CP) content due to fertilization treatment ranged from 23.64 – 24.59%. The dose level 4.5 g/l/plot also obtained the highest IVDMD and IVOMD, respectively 67.46 and 63.73%. There was an interaction between type and dose level of foliar fertilizer on IVDMD and IVOMD of butterfly pea ( $P<0.05$ ). The highest IVDMD and IVOMD were obtained by the combination of Gandasil<sup>®</sup>D fertilizer treatment at a dose of 4.5 g/l/plot, which were 68.66 and 65.09%. The conclusion of this study is that the type of foliar fertilizer does not affect the production, nutrient content and *in vitro* dry matter and organic matter digestibility (IVDMD/IVOMD) of butterfly pea, while the level of fertilizer dosage can increase the production, nutrient content and *in vitro* dry matter and organic matter digestibility. There is a combination of foliar fertilizers and fertilizer dose levels on IVDMD and IVOMD of butterfly pea. The

combination of Gandasil®D fertilizer with a fertilizer dose level of 4,5 g/l/plot got the best IVDMD and IVOMD.

Keywords: Foliar fertilizer type, Dosage level, Production, *In vitro*, *Clitoria ternatea*