

## **KOMPOSISI KIMIA DAN KECERNAAN NUTRIEN BEBERAPA VARIETAS SORGUM YANG MENGALAMI CEKAMAN KEKERINGAN**

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### **INTISARI**

Penelitian ini bertujuan untuk mengetahui kandungan nutrisi dan pencernaan *in vitro* beberapa varietas sorgum terhadap kekeringan. Penelitian ini dilaksanakan di Laboratorium Hijauan Makanan Ternak dan Pastura Fakultas Peternakan Universitas Gadjah Mada dan Rumah Kaca Pusat Inovasi Agro Teknologi (PIAT) Universitas Gadjah Mada. Materi yang digunakan adalah 6 varietas sorgum (V) terdiri atas *Sorghum bicolor* varietas numbu (V1), kawali (V2), rumput sudan (V3), merah (V4), putih (V5), dan CTY-33 (V6) dengan 4 level PEG (0%PEG); (2,5%PEG); (5%PEG); (7,5%PEG). Panen dilakukan pada umur 90 hari. Parameter yang diamati yaitu bahan kering (BK), bahan organik (BO), serat kasar (SK), protein kasar (PK), pencernaan *in vitro* bahan kering (KcBK) dan bahan organik (KcBO). Data dianalisis dengan rancangan acak lengkap (RAL) pola faktorial 6 (varietas) x 4 (Level PEG), bila signifikan dilanjutkan dengan uji *Duncan's new multiple range test*. Hasil analisis kandungan BK tertinggi terdapat pada varietas putih (30,97%), kandungan BO tertinggi terdapat pada perlakuan 0% PEG (93,71%), kandungan PK tertinggi pada varietas sudan (9,12%), kandungan SK tertinggi pada varietas CTY-33 (40,09%). Hasil analisis KcBK tertinggi pada varietas CTY-33 (48,78%), dan KcBO tertinggi pada varietas putih lokal (54,94%). Berdasarkan hasil penelitian dapat disimpulkan bahwa batas toleransi kekeringan ada pada level PEG 2,5%, pada level tersebut komposisi kimia dan pencernaan *in vitro* sorgum semakin menurun. Rangking varietas tahan kering yaitu (numbu, kawali, sudan, putih, merah, dan CTY-33.).

Kata kunci: pencernaan *in vitro*, komposisi kimia, varietas sorgum, tingkat kekeringan, konsentrasi PEG.

## **CHEMICAL COMPOSITION AND NUTRIENT DIGESTIBILITY OF SOME SORGHUM VARIETIES THROUGH DROUGHT STRESS**

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### **ABSTRACT**

This study aimed to determine the resistance nutrients content and in vitro digestibility several varieties of sorghum to drought. The study was conducted at the Laboratory of Forage of Animal Feed and Pastures of Faculty of Animal Husbandry of Universitas Gadjah Mada and Greenhouse of The Center of Agro Technology Innovation (PIAT) Universitas Gadjah Mada. The materials used were 6 varieties of sorghum. *Sorghum bicolor* numbu (V1), kawali (V2), sudan grass (V3), red (V4), white (V5) and CTY-33 (V6) subjected to be tested several drought resistance using polyethylene glycol (PEG) in various concentrations (0% PEG); (2.5% PEG); (5% PEG); (7.5% PEG). Sorghum were harvested at 90th days after planting. The parameters observed were dry matter (DM), organic matter (OM), crude fiber (CF), crude protein (CP), in vitro dry matter digestibility (IVDMD) and organic matter (IVOMD). Data were analyzed using analyzed of variance factorial of Completely Randomized Design (CRD) 6 (sorghum varieties) x 4 (PEG level) factorial pattern with 3 replications and significant results were tested by Duncan's Multiple Range Test. The result showed that highest DM content found in white sorghum (30,97%), the highest OM content found in 0% PEG concentration (93,71%), the highest CP content found in sudan grass (9,12%), the highest CF content found in CTY-33 (40,09%). The result showed that the highest IVDMD found in CTY-33 (48,78%) and the highest IVOMD found in white sorghum (54,94%). Based on the result of this study could be concluded that the limit of drought tolerance is at 2,5% PEG level, at that level the chemical composition and digestibility of in vitro sorghum decreases. The ranking of dry-resist varieties were (CTY-33, white, sudan grass, kawali, numbu and red).

(Keywords: Drought resistance, in vitro digestibility, chemical composition, PEG concentration.