UNIVERSITAS GADJAH MADA
PENGARUH VARIETAS SORGUM (Sorghum bicolor L. Moench) TERHADAP KECERNAAN, KESEIMBANGAN NITROGEN DAN
SINTESIS PROTEIN MIKROBIA PAKAN LENGKAP PADA KAMBING BLIGON
EKA RIZKY VURY R, Dr. Ir. Bambang Suhartanto, DEA., IPU ; Prof. Ir. I Gede Suparta Budisatria, M.Sc., Ph.D., IPU.
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INTISARI

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18/437399/PPT/01034

Penelitian bertujuan untuk mengetahui pengaruh varietas sorgum dalam pakan lengkap berbasis silase terhadap konsumsi nutrien, kecernaan nutrien, keseimbangan nitrogen, sintesis protein mikrobia, dan pertambahan bobot badan harian pada kambing yang diberi pakan lengkap berbasis silase sorgum. Penelitian berlangsung selama 8 bulan, berlokasi di Pusat Inovasi Agro Teknologi (PIAT) Universitas Gadjah Mada, Kalitirto, Berbah, Sleman, Yogyakarta. Dua belas ekor kambing bligon betina dengan rerata bobot badan 24,33 ± 2,83 kg, dibagi menjadi 3 kelompok perlakuan mengikuti Rancangan Acak Lengkap pola searah, T1 = pakan lengkap berbasis hijauan rumput gajah segar (*Pennisetum purpureum*), T2 = pakan lengkap berbasis silase sorgum BM, Silase sorgumR dan T3 = pakan lengkap berbasis silase sorgum super-2. Data konsumsi dan kecernaan nutrien, keseimbangan nitrogen dan sintesis protein mikrobia diukur selama penelitian dan dianalisis variansi sedangkan pertambahan bobot badan harian dianalisis kovariansi dengan bobot awal sebagai kovariat. Hasil penelitian konsumsi nutrien menunjukkan konsumsi BK T1 yaitu 66,64 g/kg $BB^{0,75}$/hari lebih tinggi (P<0,05) dibanding T2 dan T3 masing-masing 50,83 dan 63,01 (g/kg $BB^{0,75}$/hari), dan T3 lebih tinggi (P<0,05) dibanding T2. Kecernaan BK menunjukkan perbedaan yang tidak nyata antar perlakuan pada T1, T2 dan T3 masing-masing 70,21, 73,11 dan 70,36% demikian pula kecernaan nutrien yang lain yaitu BO, SK dan ETN. Retensi nitrogen T1, T2 dan T3 menunjukkan perbedaan yang tidak nyata masing-masing 0,63, 0,62 dan 0,60 (g/kg $BB^{0,75}$/hari). Total derivat purin T1 yaitu 176,32 µmol/$BB^{0,75}$/hari lebih tinggi (P<0,05) dibanding T2 dan T3 masing-masing 84,78 dan 102,76 (µmol/$BB^{0,75}$/hari), dan T3 lebih tinggi (P<0,05) dibanding T2. Pertambahan bobot badan harian T1 yaitu 64,94 g/ekor/hari lebih tinggi (P<0,05) dibanding T2 dan T3 masing-masing 48,41 dan 53,43 (g/ekor/hari), dan T3 sama dengan T2 (P>0,05). Konversi pakan T1 yaitu 10,48 lebih rendah (P<0,05) dibandingkan T2 dan T3 masing-masing 11,84 dan 13,55, dan T3 lebih tinggi (P<0,05) dibanding T2. Disimpulkan bahwa pakan lengkap berbasis hijauan rumput gajah segar (T1) lebih baik dibandingkan pakan lengkap berbasis silase sorgum (T2 dan T3), sedangkan silase sorgum BMR (T2) lebih baik dibandingkan super-2 (T3).

Kata kunci : Varietas sorgum, Pakan lengkap, Silase sorgum, Konsumsi dan kecernaan nutrien, Keseimbangan nitrogen, Sintesis protein mikrobia

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THE EFFECT OF SORGHUM VARIETIES (*Sorghum bicolor* L. Moench) ON DIGESTIBILITY, NITROGEN BALANCE AND MICROBIAL PROTEIN SYNTHESIS OF COMPLETE FEED IN BLIGON GOATS

ABSTRACT

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The aim of this study was to determine the effect of sorghum variety of complate feed based on sorghum silage on nutrient consumption and digestibility, nitrogen balance, microbial protein synthesis, and daily body weight gain in bligon goats. The study was done for 8 months, in the Center for Agro Technology Innovation (PIAT), Gadjah Mada University, Kalitirto, Berbah, Sleman, Yogyakarta. Twelve female bligon goats with an average body weight of 24.33 ± 2.83 kg, divided into 3 treatment groups with 4 replications following a completely randimized design in one direction pattern, T1 = complete feed based on fresh elephant grass (*Pennisetum purpureum)*, T2 = complete feed based on BMR sorghum silage and T3 = complete feed based on super-2 sorghum silage. The data of consumption and nutrient digestibility, nitrogen balance and microbial protein synthesis were measured during the study and analyzed for analysis of variance, while daily body weight gain was analyzed for analysis of covariance with initial weight as covariate. Differences between the treatments were tested with Duncan's Multiple Range Test. The results showed that the dry matter (DM) consumption of complete feed based on fresh elephant grass (T1) was 66.64 g/kg $BW^{0.75}$/day was higher ($P<0.05$) than complete feed based on BMR sorghum silage (T2) and super-2 (T3) respectively 50.83 and 63.01 (g/kg $BW^{0.75}$/day), and T3 was higher ($P<0.05$) than T2. The DM digestibility showed no significant differences between treatments for T1, T2 and T3 respectively 70.21, 73.11 and 70.36% as well as nutrient digestibility of OM, CF, and NFE. The nitrigen retention of T1, T2 and T3 namely 0.63, 0.62 and 0.60 g/kg $BW^{0.75}$/day showed no significant differences. The total purine derivatives T1 was 176.32 µmol/$BW^{0.75}$/day higher ($P<0.05$) than T2 and T3, respectively 84.78 and 102.76 (µmol/$BW^{0.75}$/day), and T3 was more higher ($P<0.05$) than T2. The daily body weight gain of T1 was 64.94 g / head / day higher ($P<0.05$) than T2 and T3, respectively 48.41 and 53.43 (g / head / day), and T3 was higher ($P<0.05$) compared to T2. T1 feed conversion was 10.48 lower ($P<0.05$) than T2 and T3 respectively 11.84 and 13.55, and T2 was higher ($P<0.05$) than T2. In addition, complete feed based on fresh elephant grass forage (T1) is better than complete feed based on sorghum silage (T2 and T3), while BMR sorghum silage (T2) is better than super-2 (T3).

Keywords : Sorgum varieties, Complete feed, Sorghum silage, Nutrient consumption and digestibility, Nitrogen balance, Microbial protein synthesis