METABOLISME ENERGI SAPI MADURA YANG DIBERI PAKAN KONSENTRAT MENGANDUNG TEPUNG DAUN WARU (*Hibiscus Tiliaceus*) DAN JERAMI PADI AMONIASI FERMENTASI

RINGKASAN

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Penelitian berjudul "Metabolisme Energi Sapi Madura yang Diberi Pakan Konsentrat Mengandung Tepung Daun Waru (*Hibiscus Tiliaceus*) dan Jerami Padi Amoniasi Fermentasi" memiliki tujuan untuk menganalisis pengaruh penambahan bahan tepung daun waru (*Hibiscus Tiliaceus*) dan DFM (*Direct Fed-Microbials*) pada pakan terhadap metabolisme energi dan performa sapi Madura. Penelitian menggunakan sapi Madura jantan dengan total 20 ekor, bobot badan awal berkisar 266,03 ± 22,7 kg dan koefisien keragaman 8,5. Sapi ditempatkan pada kandang individu dan dilakukan pengacakan secara sempurna untuk menerima perlakuan pakan. Jenis perlakuannya adalah T0: jerami padi + konsentrat; T1: jerami padi amoniasi (JPA) + konsentrat; T2: JPA + konsentrat + 0.48% tepung daun Waru (TDW) dan T3: JPA Fermentasi (JPAF) + konsentrat + 0.48% tepung daun Waru (TDW), masing masing perlakuan diulang lima kali. Jumlah pemberian konsentrat adalah 2,25% dari bobot hidup ternak, sedangkan jerami padi dan air minum diberikan secara *ad libitum*. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dan uji lanjut beda nyata jujur (BNJ). Peubah yang diamati adalah konsumsi energi (KE), Energi Tercerna (ET), Energi Termetabolis (ME), Retensi Energi (RE), Rasio RE terhadap KE, Rasio RE terhadap ET, Konsentrasi VFA parsial, rasio C2:C3, dan produksi gas metan, Efisiensi konversi heksosa menjadi VFA (EKH), dan Pertambahan Bobot Badan Harian (PBBH).

Hasil penelitian menunjukan bahwa perlakuan berpengaruh nyata ($P<0,05$) terhadap koefisien cerna energi, energi feses, energi urin, energy metan, Rasio RE : KE, Rasio RE : ET, PBBH, dan produksi VFA parsial, akan tetapi tidak berpengaruh nyata ($P>0,05$) terhadap KE, ET, ME, RE, rasio C2:C3 dan EKH. Uji BNJ menunjukan Rasio RE : KE perlakuan T0 lebih rendah ($P<0,05$) dari T1, T2, T3 dan di antara T1, T2, T3 tidak berbeda nyata ($P>0,05$). Rasio RE : ET pada T2 tidak berbeda nyata ($P>0,05$) dengan T3, akan tetapi lebih rendah ($P<0,05$) dibanding perlakuan T0 dan T1. PBBH perlakuan T0 dan T1 lebih rendah ($P<0,05$) dibanding perlakuan T2 dan T3. PBBH di antara T2 dan T3 tidak berbeda nyata ($P>0,05$) namun lebih tinggi ($P<0,05$) dari T0 dan T1. Kesimpulannya adalah pemberian jerami padi amoniasi dengan konsentrat yang disuplementasi dengan tepung daun waru 0,48% dapat direkomendasikan untuk meningkatkan VFA parsial dan PBBH pada sapi Madura jantan.

kata kunci : sapi-lokal, efisiensi-energi, Jerami, daun-waru, performa, pbbh

ENERGY METABOLISM OF MADURA CATTLE FED CONCENTRATE SUPPLEMENTED HIBISCUS LEAF FLOUR (*Hibiscus tiliaceus*) AND FERMENTED AMMONIED RICE STRAW

SUMMARY

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The research entitled "Energy Metabolism of Madura Cattle Fed Concentrate Supplemented Hibiscus Leaf Flour (*Hibiscus tiliaceus*) And Fermented Ammonied Rice Straw" aims to analyze the effect of adding Hibiscus leaf flour (*Hibiscus tiliaceus*) and DFM (*Direct Fed-Microbials*) on Energy metabolism and performance of Madura cattle. The research used a total of 20 male Madura cattle with early body weights ranging from 266,03 ± 22,7 kg and a coefficient of diversity of 8.5. Cattle were placed in individual pens and completely randomized positions to receive determined feed treatment. The treatment types were T0: straw + concentrate; T1: ammoniated rice straw (ARS) + concentrate; T2: ARS + concentrate + 0.48% Hibiscus leaf flour (HLF) and T3: Fermented ARS + concentrate + 0.48% HLF, Each treatment was repeated five times. The amount of concentrate given was 2,25% of cattle live weight, while rice straw and drinking water were given *ad libitum*. The research used Completely Randomized Design (CRD) variables and further tests with Tukey Honestly Significant Difference (HSD). The variables observed were energy intake (EI), Digestible Energy (DE), Metabolized Energy (ME), Energy Retention (ER), Ratio of ER:EC, Ratio of ER:DE, Partial VFA Concentration, Efficiency conversion of hexose to VFA (ECH), C2:C3 ratio, and methane gas production and Average Daily Gain (ADG) of cattle weight.

The results of the research showed that the treatment had a significant effect ($P<0.05$) on the coefficient of digestible energy, feces energy, urine energy, methane energy, Ratio of ER:EI, Ratio of ER:DE, ADG and partial VFA production, but had no significant effect ($P>0.05$) on EC, DE, ME, ER, C2:C3 ratio, and ECH. The HSD test showed that the ratio of ER:EI of the T0 treatment was lower ($P<0.05$) than T1, T2, T3 and between T1, T2, T3 was not significantly different ($P>0.05$). The ratio of ER: DE at T2 was not significantly different ($P>0.05$) from T3, but was lower than treatments T0 and T1. ADG between T2 and T3 was not significantly different ($P>0.05$) but was higher ($P<0,05$) than T0 and T1. The conclusion is that giving ammoniated rice straw (ARS) and concentrate supplemented with Hibiscus leaf flour (HLF) 0,48% can be recommended for increase changes in partial VFA production and Average Daily Gain (ADG) of Madura cattle weight.

Keywords: local cattle, energy-efficiency, straw, hibiscus leaves, performance, ADG