

KESEIMBANGAN NITROGEN PADA KAMBING KACANG BETINA DENGAN PEMBERIAN TMR (TOTAL MIXED RATION) BERBASIS KANGKUNG KERING

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INTISARI

Jerami kangkung kering memiliki potensi sebagai hijauan pakan ternak berdasarkan kandungan nutrisi yang dimiliki. Penelitian ini bertujuan untuk mengetahui pengaruh *Total Mixed Ration* berbasis kangkung kering terhadap keseimbangan nitrogen pada kambing Kacang betina. Penelitian dilaksanakan di Wonolagi, Ngler, Playen, Gunungkidul. Penelitian menggunakan 10 kambing Kacang betina dengan berat badan $20,74 \pm 2,90$ kg yang dibagi menjadi dua kelompok: P0 (rumput gajah *ad libitum* + 400 gr konsentrat sumber energi) dan P1 (TMR berbasis kangkung kering *ad libitum*) dengan ulangan masing-masing 5 ekor kambing. Pengamatan keseimbangan nitrogen pada kambing kacang betina menggunakan metode *in vivo* selama 75 hari. Data dianalisis dengan *Independent T-test* menggunakan SPSS versi 26.0. Hasil penelitian menunjukkan adanya perbedaan yang nyata ($P < 0,05$) antara perlakuan P0 dan P1 pada konsumsi nutrisi BK, BO, PK, SK, BETN, TDN, dan Nitrogen, serta nitrogen tercerna, dan keseimbangan nitrogen dalam satuan g/ekor/hari dan g/kgBB^{0,75}/hari hanya SK yang tidak signifikan ($P > 0,05$) antara perlakuan P0 dan P1. Ekskresi nitrogen feses dan urin antara perlakuan P0 dan P1 dalam satuan g/ekor/hari signifikan ($P < 0,05$), demikian pula dengan NNU% dan BV%. Namun, perlakuan P0 dan P1 pada konsumsi nutrisi LK g/ekor/hari maupun g/kgBB^{0,75}/hari, serta ekskresi nitrogen feses, ekskresi nitrogen urin dalam satuan g/kgBB^{0,75}/hari tidak menunjukkan perbedaan signifikan ($P > 0,05$). Nilai keseimbangan N dalam g/ekor/hari perlakuan P0: $7,01 \pm 0,78$ dan P1: $11,85 \pm 0,95$. Keseimbangan N dalam g/kgBB^{0,75}/hari perlakuan P0: $0,75 \pm 0,14$ dan P1: $1,20 \pm 0,11$. Pemberian TMR berbasis kangkung kering mampu memenuhi kebutuhan nutrisi dan memberikan nilai keseimbangan nitrogen positif pada kambing Kacang betina dengan nilai keseimbangan nitrogen lebih tinggi pada perlakuan TMR berbasis kangkung kering.

Kata kunci: kambing kacang, kangkung kering, keseimbangan nitrogen

NITROGEN BALANCE OF FEMALE KACANG GOAT BY GIVING TMR (TOTAL MIXED RATION) BASED ON DRIED WATER SPINACH

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ABSTRACT

The potential for dried water spinach straw as a forage is contingent upon its nutrient content. The objective of this study is to ascertain the impact of a total mixed ration comprising dried water spinach on the nitrogen balance of female Kacang goats. The research was conducted in Wonolagi, Ngleri, Playen, and Gunungkidul. The study utilized a sample population of 10 female goats with an average body weight of 20.74 ± 2.90 kg, which were divided into two groups: P0 (elephant grass *ad libitum* + 400 g of energy source concentrate) and P1 (TMR based on dried water spinach *ad libitum*), with five replicates each. The nitrogen balance of female Kacang goats was observed over a 75-day period using the in vivo method. The data were analyzed using an independent t-test with the SPSS software, version 26.0. The results demonstrated a statistically significant difference ($P < 0.05$) between treatments P0 and P1 with regard to nutrient consumption of DM, OM, CP, CF, NFE, TDN, and nitrogen, as well as digested nitrogen and nitrogen balance in units of g/head/day and $\text{g/kgBB}^{0.75}/\text{day}$. However, the difference in CF between treatments P0 and P1 was not statistically significant ($P > 0.05$). The fecal and urinary nitrogen excretion between treatments P0 and P1 in units of g/head/day were found to be statistically significant ($P < 0.05$), as were the NNU% and BV%. However, no significant differences were observed between treatments P0 and P1 in terms of nutrient consumption (CF g/head/day and $\text{g/kgBB}^{0.75}/\text{day}$), as well as fecal and urinary nitrogen excretion (in units of $\text{g/kgBB}^{0.75}/\text{day}$) ($P > 0.05$). The nitrogen balance value in g/head/day for treatment P0 was 7.01 ± 0.78 , while that for treatment P1 was 11.85 ± 0.95 . The nitrogen balance in $\text{g/kgBB}^{0.75}/\text{day}$ for treatment P0 was 0.75 ± 0.14 , while for treatment P1 it was 1.20 ± 0.11 . The results demonstrated that TMR based on dried water spinach is capable of fulfilling the nutrient requirements and providing a positive nitrogen balance value in female Kacang goats, with a higher nitrogen balance value observed in the TMR treatment based on dried water spinach.

Keywords: Kacang goats, dried water spinach, nitrogen balance