

PENGARUH PENAMBAHAN *COMPLETE RUMEN MODIFIER* PADA PAKAN YANG DISUSUN BERDASARKAN INDEKS SINKRONISASI PROTEIN ENERGI TERHADAP METABOLISME NITROGEN PADA DOMBA

ABSTRAK

Muhammad Yumna Ihsany
D2A022011

Penelitian yang bertujuan untuk mengkaji pengaruh penambahan *Complete Rumen Modifier* (CRM) pada pakan yang disusun berdasarkan indeks sinkronisasi protein energi (ISPE) terhadap metabolisme nitrogen domba telah dilaksanakan pada tahun 2023, di Desa Kutasari, Purwokerto. Materi penelitian yaitu 20 ekor domba lokal jantan umur 7-8 bulan dengan bobot 18 ± 5 kg. Penelitian menggunakan Rancangan Acak Kelompok pola Faktorial 2x2, sebagai kelompok yaitu bobot badan domba awal penelitian, terdiri atas lima kelompok sebagai ulangan. Perlakuan terdiri atas dua faktor yaitu taraf suplementasi CRM (0% dan 1%) dan indeks SPE (0,6 dan 0,7). Hasil analisis variansi menunjukkan bahwa interaksi antara penambahan CRM dan indeks SPE berpengaruh sangat nyata ($P < 0,01$) terhadap semua variabel yang diukur. Berdasarkan uji DMRT diperoleh hasil bahwakonsumsi nitrogen, pencernaan nitrogen, retensi nitrogen, *Net Nitrogen Utilization* (NNU), *Biological Value* (BV) tertinggi dicapai oleh perlakuan penambahan CRM 0% dan disusun berdasarkan ISPE 0,6 (P1). Namun demikian, efisiensi retensi nitrogen terhadap konsumsi nitrogen, efisiensi retensi nitrogen terhadap kecernaan nitrogen, dan efisiensi retensi nitrogen terhadap NNU yang terbaik dicapai oleh perlakuan CRM 1% dan disusun berdasarkan indeks SPE 0,7. Kesimpulan dari penelitian, CRM 1% dan disusun berdasarkan indeks SPE 0,7 merupakan perlakuan terbaik.

Kata kunci: *Complete Rumen Modifier*, Indeks Sinkronisasi Protein Energi, metabolisme nitrogen

THE EFFECT OF ADDING COMPLETE RUMEN MODIFIERS TO FEEDS PREPARED BASED ON PROTEIN ENERGY SYNCHRONIZATION INDEX ON NITROGEN METABOLISM IN SHEEP

ABSTRACT

Muhammad Yumna Ihsany
D2A022011

The study aimed to examine the effect of the addition of a Complete Rumen Modifier (CRM) into prepared feed based on the Protein-Energy Synchronization Index (PESI), on the nitrogen metabolism of sheep conducted in 2023 in Kutasari Village, Purwokerto. The material used 20 local male sheep aged 7-8 months and weighing around 18 ± 5 kg each participating. The research was designed according to the Randomized Complete Block Design (RCBD) with a 2x2 factorial arrangement across five test groups. The factors considered were CRM supplementation level (0% and 1%) and PESI level (0.6 and 0.7). Results from the analysis of variance demonstrated a highly significant interaction ($P < 0.01$) between CRM supplementation and PESI for all measured variables. Post-hoc analysis using the DMRT test revealed that the combination of 0% CRM and PESI 0.6 (P1) led to the highest nitrogen consumption, digestibility, retention, Net Nitrogen Utilization (NNU), and Biological Value (BV). However, the most efficient nitrogen retention relative to consumption, digestibility, and highest NNU retention was observed with the 1% CRM treatment and PESI 0.7. In conclusion, the study concluded that incorporating 1% CRM supplementation alongside PESI 0.7 yielded the most favorable outcomes for sheep nitrogen metabolism.

Key words: Complete Rumen Modifier, Protein Energy Synchronization Index, nitrogen retention, nitrogen metabolism, ruminant