 ISBN 978-979-16617-0-6

EVALUASI KOMPOSISI TUBUH DAN PEMANFAATAN NUTRIEN DI AMBING KAMBING PERANAKAN ETAWAH LAKTASI YANG DIBERI PAKAN FERMENTASI LIMBAH TEMPE

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Intisari

Penelitian ini bertujuan untuk mengevaluasi komposisi tubuh, serapan nutrien di kelenjar ambing dan gambaran asam amino susu kambing Peranakan Etawah (PE) yang diberi pakan limbah tempe. Sebanyak duabelas ekor kambing PE laktasi kedua secara random dibagi kedalam tiga macam perlakuan ransum yang berbeda. Perlakuan R1 mendapat pakan konsentrat kontrol, perlakuan R2 mendapat pakan konsentrat ditambah ampas tempe segar dan R3 mendapat pakan konsentrat ditambah ampas tempe yang difermentasi dengan *Aspergilus niger*. Rumput gajah diberikan sebanyak 50% dari total ransum dan air minum diberikan secara *ad libitum*. Pada awal dan akhir penelitian dilakukan pengukuran komposisi tubuh dengan metoda urea space. Produksi susu diukur dua kali sehari melalui pemerahan setelah kelahiran selama dua bulan. Analisis protein susu, *whey* dan *casein* dilakukan dengan metode kjeldahl, sedangkan asam amino dianalisis dengan *amino acid analyser*. Serapan nutrien diukur berdasarkan prinsip Fick yaitu perkalian antara laju alir darah ke ambing dengan delta nutrien di arteri dan vena ambing. Hasil penelitian menunjukkan bahwa bobot badan pada perlakuan R3 adalah tertinggi namun tidak ada perbedaan persen air tubuh, protein tubuh dan lemak tubuh antar perlakuan. Produksi susu pada perlakuan R3 adalah tertinggi dan untuk semua perlakuan menghasilkan asam amino glutamat di susu kambing adalah tertinggi dibandingkan dengan asam amino yang lain. Penelitian ini menyimpulkan bahwa ampas tempe yang difermentasi dengan *Aspergilus niger* dapat menggantikan 50% konsentrat dengan hasil bobot badan dan produksi susu tertinggi namun tidak ada perbedaan serapan nutrien di ambing untuk semua perlakuan.

Kata Kunci: Ampas Tempe; Laktasi, *Aspergilus niger*, *Urea Space*.

EVALUATION OF BODY COMPOSITION AND NUTRIENT UPTAKE ON MAMMARY GLAND OF ETTAWAH CROSSBRED GOAT LACTION FED WITH TEMPEH WASTE

Abstract

This study was done to evaluate the body composition, uptake nutrient in mammary gland and milk amino acid profile of lactating Etawah Crossbred goats fed with tempeh waste. Twelve second lactating goats were randomly allotted into three groups that received concentrate (R1), concentrate plus fresh tempeh waste (R2) and concentrate plus fermented tempeh waste (R3). Fermented tempeh waste was made with *Aspergillus niger*. Kinggrass was given 50% of the total ration for all groups. Urea space technique was used to measure body composition in the prior and end of study, while milk production was collected two times a day during two months since post partum. Total milk protein and amino acid in whole milk, whey and casein were analyzed using kjeldahl method and amino acid analyzer, respectively. Nutrient uptake in mammary gland was calculated using Fick principles. Result showed that there was significant different of body weight, where R3 treatment was the highest. Body water, protein and fat were same in all treatments. The highest of milk yield was found in fermented tempeh waste group. Concentration of glutamic acid was dominant than other essential amino acids in whole milk and casein but there were no significant different between groups for those essential amino acid. It was concluded that fermented tempeh waste could substitute 50% of total concentrate and had the highest body weight and milk yield in lactating Etawah Crossbred goats. Body composition and nutrient uptake in mammary gland were same in all treatments.

Key Words:Tempeh Waste, Lactating Goats, *Aspergillus niger*, and Urea Space

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