

EFEK PEMANASAN PAKAN *ADDITIVE* SEBAGAI PROTEKSI PROTEIN DAN KARBOHIDRAT DALAM PAKAN BASAL BERBASIS FERMENTASI BAKTERI ASAM LAKTAT TERHADAP KADAR VOLATILE FATTY ACIDS, PROTEIN MIKROBIA, DAN AMMONIA CAIRAN RUMEN KAMBING BLIGON

**Moh. Ikmal Khoirozzadit Taqwa
14/366633/PT/06747**

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh pemanasan bahan pakan sumber karbohidrat (jagung) dan protein (bungkil kedelai) sebagai pakan *additive* yang ditambahkan pada pakan basal konsentrat berbasis fermentasi bakteri asam laktat terhadap kadar *volatile fatty acids* (VFA), protein mikrobial dan *ammonia* cairan rumen. ternak yang digunakan adalah Kambing Bligon bobot 25 sampai 29 kg dan umur 1,5 sampai 2 tahun. Pakan yang diberikan berupa hijauan dan konsentrat (70%:40%) dan pakan *additive*. Penelitian ini didasarkan pada analisis pencernaan ruminal secara *in vivo*. Analisis statistik data menggunakan rancangan faktorial (*split plot*) dengan 2 faktor. Faktor pertama yaitu perlakuan pakan yang terdiri dari pakan dengan pemanasan (perendaman di dalam air bersuhu 90°C, selama 5 menit dengan tekanan udara sekitar) dan nonpemanasan. Faktor kedua yaitu waktu fermentasi ruminal yang terdiri dari pengambilan sampel 0 jam sebelum pemberian pakan dan 5 jam setelah pemberian pakan. Pengambilan sampel dilakukan setelah perlakuan selama 2 bulan. Masing-masing perlakuan dilakukan 3 ulangan. Hasil penelitian menunjukkan bahwa pemanasan tidak berpengaruh nyata terhadap kadar total VFA, asetat, propionat, butirir, *ammonia* dan protein mikrobial. Waktu fermentasi berpengaruh secara nyata terhadap kenaikan kadar propionat dan butirir, tetapi tidak untuk kadar VFA total, asetat, *ammonia* dan protein mikrobial. Propionat cenderung mengalami kenaikan kadar 55,52% untuk pakan yang dipanaskan dan 37,84% untuk pakan nonpemanasan. Butirir cenderung mengalami kenaikan kadar 56,77% untuk pakan yang dipanaskan dan 26,32% untuk pakan dengan nonpemanasan. Hasil yang sebaliknya diperoleh, pemanasan pakan cenderung menyebabkan kenaikan kadar yang lebih rendah pada total VFA (36,51% vs 60,54%), asetat (23,43% vs 73,32%), *ammonia* (17,98% vs 60,10%) dan protein mikrobial (4,17% vs 10,74%). Kesimpulan hasil penelitian ini adalah pemanasan pakan *additive* sumber karbohidrat dan protein belum menunjukkan pengaruh yang nyata terhadap perubahan kadar VFA protein mikrobial dan *ammonia*, namun pengaruh pemanasan tersebut cenderung menurunkan kenaikan kadar VFA total, asetat, *ammonia*, dan protein mikrobial.

Kata kunci: Proteksi karbohidrat dan protein, *volatile fatty acids*, *ammonia* dan protein mikrobial.

EFFECT OF HEATED ADDITIVE FEED AS PROTEIN AND CARBOHYDRATE PROTECTION IN BASAL FEED BASED ON LACTIC ACID BACTERIAL FERMENTATION ON LEVELS OF VOLATILE FATTY ACIDS, MICROBIAL PROTEIN, AMMONIA'S RUMEN OF BLIGON GOAT

Moh. Ikmal Khoirozzadit Taqwa
14/366633/PT/06747

ABSTRACT

This study was conducted to determine the effect of heating feed ingredients on carbohydrate (corn) and protein sources (soybean meal) as additive feed added to basal feed concentrates based lactic acid bacteria fermentation on levels of volatile fatty acids (VFA), microbial protein and ammonia's rumen fluids. The livestock used were goat weighted 25 to 29 kg and aged 1.5 to 2 years. The Feed was forage, concentrate (70%: 40%) and additive feed. This study was based on the analysis of ruminal digestibility in vivo. Statistical analysis of data used a split plot design with 2 factors. The first factor is the treatment of feed wick consisted of feed by heating (soaking in water at 90°C, for 5 minutes with environmentally air pressure) and non-heating. The second factor is the time of ruminal fermentation which consisted of 0 hours before feeding and 5 hours after feeding. Sampling is done after treatment for 2 months. Each treatment was carried out 3 replications. The results showed that heating did not significantly affected the total levels of VFA, acetate, propionate, butyrate, ammonia and microbial proteins. The fermentation time significantly affected the increase in the levels of propionate and butyrate fractions, but not for the total VFA levels, acetate fraction, ammonia and microbial proteins. Propionate tended to increase levels of 55.52% for heated feed and 37.84% for non-heating. Butyrate tended to increase levels of 56.77% for heated food and 26.32% for non-heating. The opposite results were obtained, feed heating tended to cause a lower increase in total VFA (36.51% vs 60.54%), acetate (23.43% vs 73.32%), ammonia (17.98% vs 60.10%) and microbial protein (4.17% vs 10.74 %). The conclusion of this study that heating of carbohydrate and protein additive feed sources has not shown a significant effect on changes in VFA, microbial protein and ammonia levels, but the warming effect tended to reduce the increase in total VFA levels, microbial protein acetate and ammonia levels.

Keywords : Carbohydrate and protein protection, *volatile fatty acids*, *ammonia* and microbial protein