

**PENGARUH PENAMBAHAN DAUN MAHONI (*Swietenia mahagoni*)
SEBAGAI SUMBER TANIN TERHADAP EKSKRESI DERIVAT
PURIN DALAM URIN DAN SINTESIS PROTEIN
MIKROBIA RUMEN DOMBA MERINO**

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan daun mahoni sebagai sumber tanin terhadap ekskresi derivat purin (DP) dalam urin dan sintesis protein mikroba rumen domba merino. Penelitian ini menggunakan 12 domba merino jantan dengan rata-rata berat badan $32,46 \pm 5,186$ kg dan umur 10 sampai 12 bulan. Sumber senyawa tanin yang digunakan adalah daun mahoni dengan level kadar pemberian yang berbeda yaitu 0%, 1,5%, dan 3%. Penelitian ini terdiri dari 14 hari periode adaptasi dan 7 hari periode koleksi. Sampel yang dikoleksi yaitu urin total 24 jam yang ditampung dengan penambahan H_2SO_4 , feces, dan sisa pakan. Sampel urin dianalisis konsentrasi kadar dan ekskresi derivat purin (alantoin, asam urat, xantin, dan hipoxantin), sampel feces dan sisa pakan dianalisis kadar bahan kering dan bahan organik untuk menghitung bahan organik tercerna. Variabel yang diamati yaitu Derivat Purin (DP), Bahan Organik Tercerna (BOT), Bahan Organik Tercerna di dalam Rumen (BOTR), dan Estimasi suplai N Mikroba. Data yang diperoleh dianalisis dengan rancangan acak lengkap pola searah dan apabila terdapat perbedaan dilanjutkan dengan uji *Duncan Multiple Range Test* (DMRT). Berdasarkan hasil analisis diketahui bahwa penambahan tanin daun mahoni sebagai sumber tanin pada level 0%, 1,5%, dan 3% tidak berpengaruh nyata ($P > 0,05$) terhadap kadar dan ekskresi derivat purin, BOT, BOTR, EMNS, dan EMNS/BOTR pada domba merino. Nilai kadar derivat purin adalah berkisar 21,19 - 23,49 $\mu\text{mol}/\text{BBM}/\text{L}$ sedangkan nilai ekskresi derivat purin adalah berkisar 28,54 - 35,90 $\mu\text{mol}/\text{BBM}/\text{ekor}/\text{hari}$. Ekskresi derivat purin paling tinggi adalah alantoin yaitu mencapai 52,66% - 57,22 % dari total ekskresi derivat purin. Nilai EMNS berada pada kisaran 0,12 - 0,22 $\text{mmol}/\text{ekor}/\text{hari}$ sedangkan nilai EMNS/BOTR berada pada kisaran 0,47 - 0,71 $\text{g N}/\text{Kg DOMR}$. Berdasarkan penelitian ini dapat disimpulkan bahwa tanin dari daun mahoni dapat ditambahkan sampai level 3% dalam pakan tanpa mempengaruhi ekskresi derivat purin dalam urin dan sintesis protein mikroba rumen domba merino.

Kata kunci : tanin, mahoni, merino, derivat purin, BOT, BOTR, estimasi suplai N

THE EFFECT OF TANNINS SOURCE ADDITION FROM MAHAGONY LEAVES (*Swietenia mahagoni*) ON PURINE DERIVATE EXCRESSION IN URINE AND SYNTHESIS OF RUMEN MICROBIAL PROTEIN OF MERINO SHEEP

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ABSTRACT

This study aimed to determine the effect of addition of mahogany (*Swietenia mahagoni*) leaves as a source of tannins on purine derivatives (DP) excretion in urine and rumen microbial protein synthesis in merino sheep. This study used 12 male merino sheep with an average body weight of 32.46 ± 5.186 kg and an age of 10 to 12 months. The tannin compound source which was used mahogany leaves with different levels of giving (0%, 1.5%, and 3%). This study was consisted of 14-days adaptation period and 7-days collection period. The samples which were collected were total urine for 24 hours that was collected with the addition of H_2SO_4 , feces, and feed residue. Urine samples were analyzed for level and excretion concentration of purine derivatives (alantoin, uric acid, xanthine, and hypoxanthine), sample feces and feed residue were analyzed for dry matter and organic matter content to calculate digestible organic matter. The variables that were observed were Purine Derivatives (PD), Digested Organic Matter (DOM), Digested Organic Matter in Rumen (DOMR), and Estimation of Microbial Nitrogen Supply (EMNS). The data obtained were analyzed with completely randomized design analysis one way pattern and if there were differences, it was continued with the Duncan Multiple Range Test (DMRT). Based on the analysis results were known that the addition of mahogany leaf as a source tannins at the level of 0%, 1.5%, and 3% have no significant effect ($P > 0,05$) on the levels and excretion of purine derivatives, DOM, DOMR, EMNS, and EMNS/DOMR in merino sheep. The value of purine derivative levels ranged from 21.19 to 23.49 $\mu\text{mol}/\text{BBM}/\text{L}$, while the value of excretion purine derivatives was in the range 28.54 - 35.90 $\mu\text{mol}/\text{BBM}/\text{head}/\text{day}$. The highest excretion of purine derivatives was allantoin, reaching 52.66% - 57.22% of the total excretion of purine derivatives. The EMNS value was in the range 0.12 - 0.22 mmol/head/day while the EMNS/DOMR value was in the range 0.47 - 0.71 g N/Kg DOMR. Based on this research, it can be concluded that tannins from mahogany leaves up to level 3% can be added in the feed without affecting the excretion of purine derivatives in the urine and the protein synthesis of the microbial rumen of merino sheep.

Key words: tannins, mahogany, merino, purine derivatives, DOM, DOMR, EMNS