

KONTRIBUSI ESKKRESI BASAL TERHADAP ESKKRESI TOTAL DERIVAT PURIN DALAM URIN DOMBA GARUT JANTAN DAN BETINA

Mutiara Mustika Putri Mahanani
19/453080/PPT/01095

INTISARI

Penelitian ini bertujuan untuk mengetahui perbedaan kontribusi ekskresi basal terhadap total ekskresi derivat purin (DP) dalam urin domba Garut jantan dan betina. Percobaan ini menggunakan desain *Independent Student T-test* untuk membandingkan ekskresi derivat purin domba Garut jantan dan betina. Pakan yang diberikan adalah rumput gajah (*Pennisetum purpureum*) dan *bran pollard* dengan perbandingan hijauan:konsentrat 60:40. Penelitian ini menggunakan domba Garut jantan dan betina masing-masing 6 ekor dengan umur 10 bulan dan bobot badan berkisar antara 21-25 kg. Penelitian dibagi menjadi 3 tahap penelitian. Tahap pertama adalah adaptasi ternak yang dilakukan selama empat belas hari. Tahap kedua adalah penentuan ekskresi total DP dalam urin, pada tahap ini ternak diberi pakan secara *ad libitum* dan dilakukan koleksi urin 24 jam selama 7 hari. Tahap ketiga adalah penentuan ekskresi basal DP dalam urin, pada tahap ini dilakukan koleksi urin 24 jam saat ternak dipuaskan selama 5 hari. Selama tahap penelitian dilakukan juga koleksi pakan, sisa pakan, dan feses dianalisis kadar bahan kering dan bahan organik. Sampel urin yang diambil dilakukan pengukuran derivat purin yaitu allantoin, asam urat dan xantin hipoxanthin. Hasil penelitian menunjukkan bahwa ekskresi DP pada domba Garut jantan dan betina saat diberi pakan secara *ad libitum* tidak berbeda nyata (0,16 vs 0,13 mmol/W^{0.75}/hari), ekskresi DP saat dipuaskan (endogen) pada domba Garut jantan dan betina juga tidak berbeda nyata (0,057 vs 0,052 mmol/W^{0.75}/hari). Berdasarkan data penelitian, dapat disimpulkan bahwa terdapat kontribusi ekskresi DP basal terhadap ekskresi total DP pada urin domba Garut jantan dan betina, sehingga didapatkan model persamaan $Y=0,84X+(0,057W^{0,75}e^{-0,25X})$ untuk domba Garut jantan dan $Y=0,84X+(0,052W^{0,75}e^{-0,25X})$ untuk domba Garut betina. Nilai efisiensi estimasi pasokan nitrogen mikroba yang dihasilkan pada domba Garut jantan dan betina masing-masing adalah 4,08 dan 2,90 g N/kg DOMR.

Kata kunci: Ekskresi Basal dan Total, Derivat Purin, Domba Garut, Urin

CONTRIBUTION OF BASAL EXCRETION TO THE TOTAL EXCRETION OF PURINE DERIVATIVES IN THE URINE OF MALE AND FEMALE GARUT SHEEP

Mutiara Mustika Putri Mahanani
19/453080/PPT/01095

ABSTRACT

This study aimed to determine the difference in the contribution of basal excretion to the total excretion of purine derivatives (PD) in the urine of male and female Garut sheep. This experiment used an Independent Student t-test design to compare the excretion of PD in male and female Garut sheep. The sheep were fed elephant grass (*Pennisetum purpureum*) and bran pollard with a 60:40 ratio. Total of 6 males and females, respectively, with similar age and body weight (10 mo and 21-25 kg) were used in this study. This research was divided into three periods. The first period was the adaptation period carried out for fourteen days. The second period was the determination of the total excretion of PD in the urine, during this period, the sheep were fed *ad libitum*, and 24-hour urine was collected for seven days. The third period was the determination of the basal PD excretion in the urine, during this period, urine collection was carried out when the sheep were fasted for five days. During the collection period, samples of feed, uneaten feed, and feces were collected for dry matter and organic matter analysis. Urine samples were measured for PD, namely allantoin, uric acid and xanthine-hypoxanthine. The results showed that the excretion of PD in male and female Garut sheep when fed *ad libitum* was not significantly different (0.16 vs 0.13 mmol/W^{0.75}/day). Basal (endogenous) PD excretion in male and female Garut sheep was also not significantly different (0.057 vs. 0.052 mmol/W^{0.75}/day). It could be concluded there was a contribution of basal PD excretion on the total PD excretion in the urine of male and female Garut sheep. Based on the basal PD excretion data, we obtained modified equations, namely $Y=0.84X+(0.057W^{0.75}e^{-0.25X})$ for male Garut sheep and $Y=0.84X+(0.052W^{0.75}e^{-0.25X})$ for female Garut sheep. The efficiency of estimated microbial nitrogen supply in male and female Garut sheep were 4.08 and 2.90 g N/kg DOMR, respectively.

Keywords: Basal dan Total Excretion, Garut Sheep, Purine Derivatives, Urine