

**ESTIMASI SINTESIS PROTEIN MIKROBA RUMEN BERDASAR  
EKSKRESI DERIVAT PURIN URIN *SPOT SAMPLING* SAPI  
PERANAKAN ONGOLE YANG DIBERI CAMPURAN DAUN SUMBER  
TANIN**

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**INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh campuran daun nangka, daun mahoni, dan daun jati (daun sumber tannin) terhadap sintesis protein mikroba rumen berdasar ekskresi derivat purin urin *spot sampling* Sapi Peranakan Ongole (PO). Penelitian ini dilakukan menggunakan 9 ekor Sapi PO. Sapi dibagi menjadi 3 kelompok perlakuan sesuai dengan level pakan sumber tanin diberikan yaitu 0%, 1,5%, 3% BK pakan. Pakan yang diberikan terdiri dari hijauan berupa rumput gajah (*Pennisetum Purpureum*) dengan proporsi 60%, konsentrat 40%, dan campuran tepung daun sumber tanin (daun mahoni 45%, nangka 20%, daun jati 35%) yang pemberiannya dicampur dengan konsentrat. Penelitian ini terdiri dari periode adaptasi selama 21 hari dan periode koleksi 7 hari. Selama periode koleksi dilakukan pengambilan sampel urin dengan metode spot sampling pada jam 04.00 sampai 07.00 pagi. Pengujian sampel urin di laboratorium meliputi penentuan kadar kreatinin (C), dan derivat purin (DP) yang terdiri dari allantoin dan asam urat yang dilakukan secara spektrofotometrik. Rasio DP:C untuk mengestimasi ekskresi Derivat Purin (DP) dalam sehari. Selanjutnya dari data yang didapat digunakan untuk mengestimasi sintesis protein mikroba rumen. Data yang didapat dianalisis dengan analisis analisis variansi pola searah. Untuk membedakan nilai rerata antar perlakuan diuji menggunakan uji DMRT. Berdasarkan hasil penelitian dapat diketahui penambahan tanin dengan level 0%, 1,5%, 3% BK tidak berpengaruh nyata terhadap total ekskresi derivat purin dan sintesis protein mikroba. Total ekskresi derivat purin urin yang diperoleh berkisar 148,396 sampai 217,938 mmol/hari dan nilai sintesis protein mikroba diperoleh berkisar 68,924 sampai 103,345 g N/hari. Dari data yang diperoleh dapat disimpulkan bahwa pemberian tanin hingga 3% BK pakan tidak mempengaruhi sintesis protein mikroba.

Kata kunci : Daun Mahoni, Daun Nangka, Daun Jati, Derivat purin, Sapi PO, Tanin

## **ESTIMATION OF RUMEN MICROBIAL PROTEIN SYNTHESIS BASED ON EXCRETION OF PURIN DERIVATES IN URINE OF ONGOLE CROSSBREED FED WITH TANNIN SOURCE LEAVES BY SPOT SAMPLING**

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### **ABSTRACT**

The research was conducted to determine the effect of mixed jackfruit leaves, mahogany leaves, and teak leaves (tannin source feed) on microbial protein synthesis based on the excretion of urine spot sampling purine derivatives Ongole crossbreed cattle. This research used 9 cattles which was divided into 3 groups according to the level of feed the tannin source was given, namely 0%, 1,5%, 3%. The feed provided consists of forage or napier grass (*Pennisetum Purpureum*) 60%, concentrate 40%, and feed sources of tannins (jackfruit leaves, teak leaves, mahogany leaves). This study consisted of an adaptation period of 21 days and a collection period of 7 days. During the collection period, urine samples were collected using the spot sampling method from 04.00 to 07.00 am. Testing of urine samples in the laboratory includes determination of creatinine (C) levels, and purine derivatives (DP) consisting of allantoin, and uric acid which are carried out spectrophotometrically. DP:C ratio to estimate daily excretion of DP. Furthermore, the data obtained were used to estimate rumen microbial protein synthesis. The data obtained were analyzed by using the ANOVA test. To distinguish the mean value between treatments tested using the DMRT test. Based on the research results, it can be seen that the addition tannins with a level of 0%, 1,5%, 3% BK has no significant effect on the total excretion of purine derivatives and microbial protein synthesis. The total excretion of urinary purine derivatives obtained ranged from 148.40 to 217.94 mmol / day and the microbial protein synthesis values obtained ranged from 68.92 to 103.34 g N / day. From the data obtained, it can be concluded that giving tannins up to 3% BK does not affect rumen microbial protein synthesis.

**Keywords:** Mahagony Leaves, Jackfruit Leaves, Teak Leaves, Purine Derivatives, Ongole Crossbreed, Tannins