



DEGRADASI IN SACCO BAHAN ORGANIK DAN PROTEIN KASAR EMPAT SPESIES RUMPUT TROPIK

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INTISARI

Penelitian ini bertujuan untuk mengetahui degradasi bahan organik (BO) dan protein kasar (PK) secara *in sacco* dari empat jenis rumput. Penelitian dilakukan menggunakan tiga ekor sapi Peranakan *Friesian Holstein* yang difistula pada bagian rumennya, diberi ransum terdiri dari *Pennisetum purpureum* (PK 9%) dan konsentrat (PK 16%) dengan imbang 70%:30%. Empat jenis rumput *Panicum maximum*, *Setaria sphacelata*, *Cynodon dactylon* dan *Brachiaria mutica* yang diinkubasikan dalam rumen selama 2, 4, 8, 16, 24 dan 48 jam, dan setiap waktu inkubasi dengan 6 kali ulangan. Residu pakan setelah inkubasi dianalisis kandungan BO dan PK. Data yang diperoleh berupa kinetik kehilangan BO dan PK digunakan untuk menghitung nilai a, b dan c dengan model eksponensial, $p = a + b(1 - e^{-ct})$, dengan a = fraksi yang mudah larut, b = fraksi yang potensial terdegradasi dan c = laju degradasi fraksi b. Nilai a, b, dan c yang diperoleh dan laju partikel pakan keluar rumen (k_p) = 0,06, digunakan untuk menghitung degradasi teori (DT), $DT = a + (bc/(c+0,06))$. Data yang diperoleh dianalisis statistik. Hasil penelitian menunjukkan bahwa terdapat perbedaan sangat nyata ($P < 0,01$) fraksi a, b, c dan DT dari BO dan PK. Degradasi BO *Setaria sphacelata* adalah tertinggi (41,66%) dan tidak berbeda nyata dengan *Cynodon dactylon* dan *Brachiaria mutica* (39,16 dan 39,95%). Degradasi BO *Panicum maximum* paling rendah dibanding lainnya (33,20%). Degradasi PK *Cynodon dactylon* lebih tinggi (62,24%) dan berbeda nyata dengan *Panicum maximum* dan *Brachiaria mutica* (56,89 dan 58,35%), tetapi tidak berbeda nyata dengan *Setaria sphacelata* (60,78%). Hasil penelitian menunjukkan terdapat perbedaan BO dan PK empat jenis rumput.

(Kata Kunci : Degradasi, *In Sacco*, Rumput Tropik, Bahan Organik, Protein Kasar)



IN SACCO DEGRADATION ORGANIC MATTER AND CRUDE PROTEIN OF FOUR TROPICAL GRASSES SPECIES

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ABSTRACT

The experiment was conducted to determine the organic matter (OM) and crude protein (CP) degradation of tropical grasses in the rumen. In this experiment three rumen cannulated *Friesian Holstein* cows were used. The cows were fed Elephant grass (*Pennisetum purpureum*) (CP:9%) and concentrate (CP:16%) at the ratio of 70% : 30%, to meet their daily maintenance requirements. Four grasses, namely *Panicum maximum*, *Setaria sphacelata*, *Cynodon dactylon* and *Brachiaria mutica*, samples were put in nylon bag and incubated in the rumen for 2, 4, 8, 16, 24 and 48 hours. Each sample was replicated six (6) times. The residues after incubation were analyzed for OM and CP, and the results were used to calculate the fraction that immediately degraded (a), fraction of slowly degraded (b), and the rate of degradation of fraction slowly degraded (c), according to formula of $p = a + b(1 - \exp^{-c\lambda})$, where p is material degraded at time t. The values of fraction obtained were then used to calculate theoretical degradation (DT) according formula $DT = a + bc/(c + 0.06)$. The results showed that DT of OM and CP were significantly different (P<0.01) among grasses. DTOM of *Setaria sphacelata* was the highest (41.66%) but not significantly different with *Cynodon dactylon* and *Brachiaria mutica* (39.16 and 39.95%), while *Panicum maximum* was the lowest (33.12%). DTCP of *Cynodon dactylon* (62.24%) was significantly higher (P<0.01) than *Panicum maximum* and *Brachiaria mutica* (56.89 and 58.35%) but not differ to *Setaria sphacelata* (60.78%). There were variation of OM and CP degradation between grasses.

(Key Words : Degradation, In Sacco, Tropical Grasses, Organic Matter, Crude Protein)