

DEGRADASI *IN SACCO* BAHAN KERING DAN BAHAN ORGANIK LEGUM
POHON DARI NUSA TENGGARA BARAT PADA SAPI
PERANAKAN *FRIESIAN HOLSTEIN*

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2002

INTISARI

Penelitian ini bertujuan untuk mengetahui degradasi *in sacco* bahan kering dan bahan organik dari empat macam legum tropik. Penelitian dilakukan dengan menggunakan dua ekor sapi Peranakan *Friesian Holstein* yang *difistula* dibagian rumenya, diberi ransum terdiri dari *Pennisetum purpureoides* (CP 9%) dan konsentrat (CP 14%) dengan imbang 70 : 30 %. Empat jenis legum tropik yaitu turi (daun, batang dan ranting), gamal (daun), lamtoro (daun dan batang), dadap (daun) diinkubasikan dalam rumen selama 2, 4, 8, 16, 24, 48, dan 72 jam, dan setiap waktu inkubasi dengan 6 kali ulangan. Residu pakan setelah inkubasi dianalisis kandungan bahan kering (BK) dan bahan organik (BO). Bahan yang terdegradasi diregresikan untuk mendapatkan perpotongan (a) dan kemiringan (b) terhadap waktu inkubasi, yang selanjutnya digunakan untuk menghitung fraksi a, b, c dengan menggunakan persamaan $P = a + b(1 - \exp^{-ct})$. Nilai a, b, c yang diperoleh digunakan untuk menghitung degradasi teori ($DT = a + (b \times c / c + K_p)$) dengan a = fraksi yang mudah larut, b = fraksi yang potensial terdegradasi, c = laju degradasi fraksi b, K_p = laju partikel pakan keluar (0,06). Data yang diperoleh dianalisis variansi *Complete Randomized Design* (CRD) dengan pola searah jika ada perbedaan dilanjutkan uji *Duncan's New Multiple Range Test* (DMRT). Hasil penelitian menunjukkan perbedaan yang nyata ($P < 0,05$) pada nilai b, c dan DT dari nilai BK dan BO. Nilai DT BK berturut-turut sebesar 87,30%; 82,45%; 69,70%; 64,51% sedangkan nilai DT BO berturut-turut sebesar 87,36%; 88,61%; 72,37%; 65,63% untuk turi, gamal, lamtoro dan dadap. Nilai DT BK dan BO tertinggi adalah turi (87,30% dan 87,36%) sedangkan nilai DT terendah adalah dadap (64,51% dan 65,63%). Kesimpulan terdapat variasi degradasi teori ($P < 0,05$) dari empat legum tropik.

(Kata kunci : Degradasi *in sacco*, Bahan Kering, Bahan Organik)

**IN SACCO DEGRADATION OF DRY AND ORGANIC MATTER OF
LEGUME TREES FROM WEST NUSATENGGERA
ON FRIESIAN HOLSTEIN CROSSBREED**

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ABSTRACT

The experiment was conducted to determine the dry and organic matter degradation of tropical legumes in the rumen. In this experiment two rumen cannulated Friesian Holstein cows were used. The cows were feed *Penisetum purpuroides* (CP 9%) and concentrate (CP 14%) at the ratio of 70% : 30%, to meet their daily maintenance requirements. Four legumes namely *Sesbania grandiflora* (leaf, trunk, branch), *Gliricidia maculata* (leaf), *Leucaena leucocephala* (leaf, trunk), *Erythrina lithosperma* (leaf). Samples were put in nylon bag and incubated in the rumen for 2, 4, 8, 16, 24, 48 and 72 hours, with six replication each sample. The residues after incubation were analyzed for dry (DM) and organic matter (OM). The chemical components degraded were regressed to obtain intercept (a) and slope (3) constants against time incubation. The constants then to be used to calculate a, b, c, fraction constants, in the equation degradation theoretical ($DT = a + (bc/c + Kp)$) in exponential $P = (a + b(1 - \exp^{-ct}))$ in detail explanation a = easily soluble fraction, b = fraction that tends to be degraded, c = the rate of fraction degradation b, Kp = the rate of feed transit (0,06). Data collected were then analysed of variance on Complete Randomized Design (CRD) followed by Duncan's New Multiple Range Test (DMRT). The results showed that there were no differences on a fraction but on b, c and DT both on dry and organic matter of *Sesbania grandiflora*, *Gliricidia maculata*, *Leucaena leucocephala* and *Erythrina lithosperma* showed significant difference ($p < 0,05$). The DT value of DM were 87,30%; 82,45%; 69,70; 64,51% and DT of OM were 87,36%; 88,61%; 72,37%; 65,63% for *Sesbania grandiflora*, *Gliricidia maculata*, *Leucaena leucocephala* and *Erythrina lithosperma* respectively. The highest DT of DM and OM value was on *Sesbania grandiflora* (87,30% and 87,35%) and while the lowest on *Erythrina lithosperma* (64,51% and 65,63%). It can be concluded that there were severe variation on DT of DM and OM from those leguminosae.

Key words : Degradation in sacco, Dry matter, Organic matter