PENGARUH PENAMBAHAN *ESSENTIAL OIL* NILAM (*Pogostemon cablin* Benth.) DALAM RANSUM TERHADAP PRODUKSI METAN DALAM FERMENTASI RUMEN SECARA *IN VITRO*

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan *essential oil* nilam dalam ransum terhadap produksi metan dalam rumen secara *in vitro*. Perlakuan yang diberikan adalah penambahan *essential oil* nilam pada ransum yaitu substrat campuran dari rumput gajah, bekatul, dan *wheat pollard* (60:20:20) dengan kadar level penambahan 0, 25, 50, 75, 100 mg/l medium. Fermentasi dilakukan dengan teknik *in vitro* produksi gas selama 24 jam pada suhu 39ºC dengan ulangan sebanyak 3 kali. Pada akhir fermentasi dilakukan preparasi sampel untuk mengukur nilai pH, kadar VFA, metan, kadar amonia, protein mikrobia dan jumlah protozoa. Data yang diperoleh dianalisis dengan menggunakan Rancangan Acak Lengkap (RAL) Pola Searah. Apabila hasil yang diperoleh berbeda nyata, dilakukan uji *Duncan's New Multiple Range Test* (DMRT). Hasil penelitian menunjukkan bahwa penambahan *essential oil* nilam tidak menunjukkan perbedaan nyata terhadap nilai pH, kadar amonia, protein mikrobia, jumlah protozoa, dan produksi metan. Total VFA meningkat secara nyata ($P<0,05$) dan menurunkan rasio asetat:propionat secara nyata ($P<0,05$).

Kata kunci: Minyak Nilam, *Essential oil*, Produksi metan

EFFECT OF ADDITIONAL PATCHOULI ESSENTIAL OIL (*Pogostemon cablin* Benth.*)* IN THE RATION ON IN VITRO METHANE PRODUCTION OF RUMEN FERMENTATION

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ABSTRACT

The aim of this study was to determine the effect of the addition of patchouli essential oil in the ration to *in vitro* methane gas production of rumen. The treatments given were the addition of patchouli essential oil to the ration that is mixed substrate of *Pennisetum purpureum*, rice bran, and wheat pollard (60:20:20) with addition level 0, 25, 50, 75, 100 mg/l medium. Fermentation was done by *in vitro* gas production for 24 hours at 39ºC with 3 replications. At the end of the fermentation, sample was taken to measure pH values, VFA levels, methane gas, ammonia levels, microbial protein and total protozoa. The data obtained were analyzed using Completely Randomized Design (CRD) one way design. If the results were significantly different, Duncan's New Multiple Range Test (DMRT) was tested. The results showed that pH value, ammonia level, microbial protein, total protozoa, and methane production did not show significant different. Total VFA increased significantly ($P<0.05$) and the ratio of acetate: propionate decreased significantly ($P<0.05$).

Keywords: Patchouli oil, Essential oil, Methane production