

**PENGARUH PENGGUNAAN BUNGKIL KELAPA SAWIT LEVEL
BERBEDA PADA RANSUM BERBASIS JERAMI PADI
FERMENTASI TERHADAP KARAKTERISTIK
FERMENTASI RUMEN SECARA *IN VITRO***

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi bungkil kelapa sawit (*Elaeis gueneensis*) terhadap karakteristik fermentasi *in vitro* (pH, VFA, NH₃, dan protein mikroba) ransum berbasis jerami padi fermentasi yang ditambah 15% onggok. Perlakuan dalam penelitian ini berupa suplementasi bungkil kelapa sawit dengan empat level (0, 10, 20, atau 30%) pada ransum berbasis jerami padi fermentasi dan 15%BK onggok. Setiap perlakuan dilakukan uji fermentasi rumen dengan menggunakan tahap 1 dari metode *in vitro* 2-tahap Tilley dan Terry. Variabel yang diamati dalam penelitian ini adalah nilai pH, konsentrasi *volatile fatty acids* (VFA total dan individual), amonia (NH₃), dan protein mikroba. Hasil yang diperoleh dianalisis statistik dengan mengikuti rancangan acak lengkap pola searah dan perbedaan antara perlakuan diuji dengan *Duncan's multiple range test*. Hasil penelitian menunjukkan bahwa suplementasi bungkil kelapa sawit berpengaruh terhadap konsentrasi VFA, NH₃, dan protein mikroba tanpa memberi efek negatif pada pH kultur. Suplementasi 30% bungkil kelapa sawit pada ransum menunjukkan konsentrasi VFA dan protein mikroba tertinggi (52,18 mM/L dan 7,49 mg/mL, berurutan; P<0,05), serta menghasilkan konsentrasi NH₃ terendah (9,06 mg/100 mL; P<0,05). Dapat disimpulkan bahwa suplementasi 30% bungkil kelapa sawit pada pakan basal jerami padi fermentasi dan 15% onggok menghasilkan fermentasi rumen yang paling optimal.

Kata kunci:Bungkil kelapa sawit, Fermentasi rumen, *In vitro*, Jerami padi fermentasi, Onggok, Suplementasi

THE EFFECT OF USE PALM KERNEL CAKE AT DIFFERENT LEVELS BASED ON FERMENTED RICE STRAW ON *IN VITRO*

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ABSTRACT

This research was determined to study the effect of palm (*Elaeis gueneensis*) kernel cake supplementation on *in vitro* fermentation characteristics (pH, VFA, NH₃, and microbial protein) of ration based on fermented rice straw and 15% tapioca by-product. Four different levels of palm kernel cake supplementation (0, 10, 20, or 30%) were added into ration based on fermented rice straw and 15%DM tapioca by-product. All treatments were run in the first stage of Tilley and Terry's 2-stage *in vitro* techniques. Variables that observed in this research were: pH, concentration of volatile fatty acids (VFA, total and individual), ammonia (NH₃), and microbial protein. The results were analyzed statistically by followed completely randomized design (one way) and any differences among treatments were tested with Duncan's multiple range test. Results showed that palm kernel cake supplementation was significantly affected VFA, NH₃, and microbial protein concentrations without negatively affected culture pH. Palm kernel cake supplementation at 30% showed the greatest VFA and microbial protein concentrations (52.18 mM and 7.49 mg/mL, respectively; P<0.05), while the NH₃ concentration was the lowest (9.06mg/100mL; P<0.05). It can be concluded that palm kernel cake supplementation at 30% results in the most optimum of ruminal fermentation.

Keywords: Fermented rice straw, *In vitro* fermentation characteristic, Palm kernel cake, Supplementation, Tapioca by-product