

**KARAKTERISTIK FERMENTASI *IN VITRO* JERAMI PADI DENGAN
SUPLEMENTASI GAPLEK DAN PAKAN SUMBER PROTEIN
PADA IMBANGAN YANG BERBEDA**

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi gaplek dan pakan sumber protein pada imbalan yang berbeda terhadap karakteristik fermentasi *in vitro* jerami padi. Dengan mengikuti rancangan acak lengkap pola searah, lima imbalan gaplek (dengan 1% urea) dan pakan sumber protein (25% bungkil sawit dan 75% bungkil kopra) ditambahkan pada ransum dengan pakan basal jerami padi. Kelima perlakuan tersebut adalah: T0 (20% jerami padi dan 80% gaplek), T1 (20% jerami padi, 10% pakan sumber protein, dan 70% gaplek), T2 (20% jerami padi, 20% pakan sumber protein, dan 60% gaplek), T3 (20% jerami padi, 30% pakan sumber protein, dan 50% gaplek), dan T4 (20% jerami padi, 40% pakan sumber protein, dan 40% gaplek). Untuk mengetahui karakteristik fermentasi rumen, semua ransum perlakuan diinkubasikan selama 48 jam sesuai dengan tahap pertama pada metode *in vitro* 1-tahap. Variabel yang diamati adalah komposisi nutrisi ransum perlakuan, pH, VFA, NH₃, dan protein mikroba. Data komposisi nutrisi ransum dianalisis secara deskriptif, sedangkan data karakteristik cairan rumen dianalisis dengan menggunakan analisis variansi. Apabila terdapat perbedaan antara data yang diperoleh karena perlakuan maka dilanjutkan dengan uji DMRT. Hasil penelitian menunjukkan penambahan proporsi pakan sumber protein berpengaruh nyata terhadap peningkatan konsentrasi NH₃ dan protein mikroba tanpa berefek negatif terhadap VFA dan pH. Suplementasi 50% gaplek dan 30% pakan sumber protein menghasilkan efek yang paling baik terhadap konsentrasi NH₃ dan protein mikroba (9,54 mM dan 1,30 mg/mL, masing-masing; $P < 0,05$). Berdasarkan hasil penelitian dapat disimpulkan bahwa suplementasi 50% gaplek dan 30% pakan sumber protein menghasilkan kondisi yang optimal untuk fermentasi rumen.

Kata kunci: Jerami padi, Gaplek, Pakan sumber protein, Suplementasi, Fermentasi rumen

RUMEN FERMENTATION CHARACTERISTIC ON *IN VITRO* BASED ON RICE STRAW WITH SUPPLEMENTATION CASSAVA CHIP AND PAKAN SUMBER PROTEIN AT DIFFERENT RATIO

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ABSTRACT

This study was determined to study the effect of cassava chip and protein sources supplementation at different ratio on *in vitro* fermentation characteristic (pH, VFA, NH₃ and microbial protein) based on rice straw. By using followed completely randomized design, five ratio cassava chip (with 1% urea) and protein sources (25% palm kernel cake and 75% cocounut meal) supplemented to ration with rice straw. Five different ratio of ration is T0 (20% rice straw and 80% cassava chip), T1 (20% rice straw, 70% cassava chip and 10% protein sources), T2 (20% rice straw, 60% cassava chip and 20% protein sources), T3 (20% rice straw, 50% cassava chip and 30% protein sources) and T4 (20% rice straw, 40% cassava chip and 40% protein sources). All treatments were run in the first stage of Tilley and Terry's 1-stage *in vitro* techniques. Variable that observed in this research were: pH, VFA (total and individual), NH₃ and microbial protein. The result were analysed statistically, and any differences among treatments were tested with Duncan's multiple range test. Results showed that cassava chip and protein sources supplementation were significantly affected NH₃ and microbial protein without negatively affected VFA and pH. Supplementation at 50% cassava chip and 30% protein sources showed the greatest NH₃ and microbial protein concentrations (9,54 mM dan 1,30 mg/mL, respectively; $P < 0,05$). It can be concluded that supplementation of 50% cassava chip and 30% protein sources resulted in the most optimum ruminal fermentation.

Keywords: Rice Straw, Cassava chip, Protein sources, Supplementation, Rumen fermentaion