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SUPLEMENTASI MINERAL TERHADAP KECERNAAN DAN KARAKTERISTIK KONDISI RUMEN PADA TERNAK SAPI

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ABSTRACT

Two step of experiment have been conducted in order to improve the nutritive value of low quality agro-industrial by-products as feed for ruminants. In the present experiment, the highest quality of ammoniated-rice straw as assessed by in vitro methods in the previous experiment, was combined with various levels concentrate. The concentrate consisted of 25% rice bran, 8% cassava waste, 5 % tofu waste dan 2 % blood meal and 60% rice straw. For experimental rations were allocated according to completely randomized design, its treatment was replicated in four replications. One rumen cannulated cattle has been used as source as rumen fluid for in vitro digestion trials. The following experimental diets : * 60% ammoniated-rice straw + 40 concentrate and Ca, P, Mg and S Supplementation (ration A): 60% ammoniated-rice straw + 40 concentrate and 1.0 of Ca, P, Mg and S Supplementation (ration B): *60% ammoniated-rice straw + 40 concentrate and 1.5 of Ca, P, Mg and S Supplementation (ration C) and *60% ammoniated-rice straw + 40 concentrate and 2.0 of Ca, P, Mg and S Supplementation (ration D). Objective of the present experiment was to find the best the combination of mineral supplementation consist it Ca, P, Mg and S of rice straw or 60% ammoniated-rice straw + 40 concentrate and 1.5 Ca, P, Mg and S Supplementation (ration C). The result showed that ratio of ammoniated rice straw and concentrate in ration significantly ($p < 0.05$) affect the digestibility of nutrients. Digestibility of dry matter, organic matter, crude protein, NDF and ADF were significantly higher ($P < 0.05$) in ration D than those A, B and C rations. However, the characteristics of ruminal condition were not significantly affected by any treatment rations, in which the ruminal pH, concentrations of ruminal $\text{NH}_3\text{-N}$ and total VFA were almost constant for all the treatment rations. The concentrations of $\text{NH}_3\text{-N}$ ranged from 7.27-7.76 mg/100ml, total VFA 60.12-87.90 mM and ruminal pH ranged from antara 7.03-7.12. From these results it could be concluded that ration C of ammoniated rice straw and concentrate in the ration with supplementation of 1.5 Ca, P, Mg and S affected nutrient digestibility and characteristics of ruminal condition.

Key Words : Mineral supplementation, degradability, ruminal condition

PENDAHULUAN

Salah satu penyumbang protein hewani yang paling potensial melalui produknya berupa daging dan susu yaitu ternak ruminansia. Peningkatan produksi ternak ruminansia saat sekarang ini mengalami kendala karena ketersediaan hijauan yang tidak mencukupi dimana semakin meluasnya areal pemukiman penduduk dan perkembangan industri yang menyebabkan areal penanaman rumput semakin sedikit. Oleh karena itu diperlukan integrasi usaha ternak ruminansia dengan pertanian tanaman pangan berupa hasil ikutan jerami padi yang dapat memainkan perannya sebagai sumber hijauan pengganti rumput unggul. Faktor pembatas utama pemanfaatan jerami padi yaitu tingginya kadar lignin dan silika sehingga sumber energi utama terutama lignin-selulosa dan ligno-hemiselulosa akan kurang bermanfaat. Perlakuan jerami padi dengan urea ($\text{CO}(\text{NH}_2)_2$) sebagai sumber amonia dapat meningkatkan kadar protein kasar jerami padi sampai 9% (Komar, 1984),