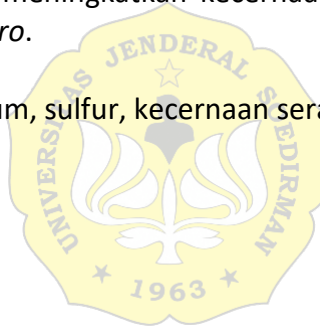


ABSTRAK

Penelitian bertujuan untuk mengkaji pengaruh fortifikasi mineral magnesium dan sulfur dalam pakan terhadap pencernaan serat kasar dan produksi gas metan secara *in vitro*. Pakan yang digunakan terdiri dari jerami padi amoniasi dan konsentrat dengan imbang 50 : 50. Metode penelitian menggunakan Rancangan Acak Lengkap (RAL) *One Way Classification* dengan tiga perlakuan, yaitu P0 (kontrol), P1 (P0 + magnesium 0,11% berdasarkan BK pakan), dan P2 (P1 + sulfur 0,83% berdasarkan BK pakan), masing-masing perlakuan diulang 6 kali. Data yang diperoleh dianalisis variansi dan uji Beda Nyata Jujur (BNJ). Variabel yang diukur yaitu pencernaan serat kasar pakan dan produksi gas metan. Hasil penelitian menunjukkan bahwa fortifikasi magnesium dan sulfur secara signifikan meningkatkan pencernaan serat kasar ($P < 0,01$), dengan rata-rata tertinggi pada perlakuan fortifikasi magnesium dan sulfur (P2) sebesar $59,31 \pm 3,51\%$ dibandingkan dengan fortifikasi magnesium (P1) sebesar $49,12 \pm 2,95\%$ dan kontrol (P0) sebesar $34,33 \pm 4,92\%$. Produksi gas metan mengalami penurunan signifikan ($P < 0,01$), di mana perlakuan fortifikasi magnesium dan sulfur (P2) memiliki rata-rata produksi gas metan terendah yaitu $1,05 \pm 0,33$ mM dibandingkan dengan fortifikasi magnesium (P1) sebesar $1,55 \pm 0,39$ mM dan kontrol (P0) sebesar $3,22 \pm 0,56$ mM. Kesimpulan dari penelitian ini adalah fortifikasi magnesium dan sulfur dalam pakan dapat meningkatkan pencernaan serat kasar serta menurunkan produksi gas metan secara *in vitro*.

Kata kunci: Fortifikasi, magnesium, sulfur, pencernaan serat kasar, gas metan, *in vitro*



ABSTRACT

The study aimed to assess the effect of magnesium and sulfur mineral fortification in feed on crude fiber digestibility and methane gas production *in vitro*. The feed used consisted of ammoniated rice straw and concentrate with 50:50 ratio. The research method used a completely randomized design (CRD) One Way Classification with three treatments, namely P0 (control), P1 (P0 + 0.11% magnesium based on dry matter), and P2 (P1 + 0.83% sulfur based on dry matter), with 6 replication. The data obtained were analyzed with Anova and Honestly Significant Difference (HSD) test. The measured variables were feed crude fiber digestibility and methane gas production. The results showed that magnesium and sulfur fortification significantly increased crude fiber digestibility ($P < 0.01$), with the highest average in P2 at $59.31 \pm 3.51\%$ compared to P1 at $49.12 \pm 2.95\%$ and P0 at $34.33 \pm 4.92\%$. Methane gas production decreased significantly ($P < 0.01$), where P2 had the lowest average methane gas production of 1.05 ± 0.33 mM compared to P1 of 1.55 ± 0.39 mM and P0 of 3.22 ± 0.56 mM. The conclusion of this study is that magnesium and sulfur fortification in feed can increase crude fiber digestibility and reduce methane gas production *in vitro*.

Keywords: Fortification, magnesium, sulfur, crude fiber digestibility, methane gas, *in vitro*

