

## The Efficacy of Methanol Extract of Garlic (*Allium sativum*) to Improve Rumen Fermentation Products

<b>Title</b>	The Efficacy of Methanol Extract of Garlic ( <i>Allium sativum</i> ) to Improve Rumen Fermentation Products
<b>Author Order</b>	of
<b>Accreditation</b>	
<b>Abstract</b>	<p>Abstract. This study was aimed to evaluate the effect of the increase levels of garlic extract (<i>Allium sativum</i>, As) in beef cattle feed on rumen fermentation products and microbial populations. The materials used were rumen fluid and control feed (40 % fermented rice straw:60% concentrate). The research method was experimental using Randomized Complete Block Design (RCBD) applying 7 treatments which were repeated 3 times. The tested feed treatments were S0 (control feed), S1 (S0 + 1.5 ppm of Cr, S2 (S0 + 250 ppm of As extract), S3 (S1 + 250 ppm of As extract), S4 (S1 + 500 ppm of As extract), S5 (S1 + 750 ppm of As extract) and, S6 (S1 + 1000 ppm of As extract). The data were analyzed using analysis of variance and followed by Honestly Significant Difference test. The results showed that the treatment effects on total bacteria, protozoa population, total gas and methane were highly significant but had no effect on dry matter digestibility DMD and organic matter digestibility OMD and production of VFA. The treatments increased total bacteria but decreased total gas and methane. The best result was achieved on treatment S6 (supplementation of As at the level of 1000 ppm in the feed) of which the feed with adequate Cr will result in the most efficient of fermentation. Keywords: Extract of <i>Allium sativum</i>, organic Cr, microbial population, rumen fermentation, beef cattle</p> <p>Abstrak. Penelitian ini bertujuan untuk mengevaluasi pengaruh dan level penambahan ekstrak bawang putih (<i>Allium sativum</i>, As) dalam pakan sapi potong terhadap produk fermentasi dan populasi mikroba rumen. Materi yang digunakan dalam penelitian adalah cairan rumen sapi potong dan pakan kontrol (jerami fermentasi : konsentrat; 40:60%). Metode penelitian adalah eksperimental menggunakan Rancangan Acak Kelompok (RAK) 7 perlakuan, setiap perlakuan diulang 3 kali. Pakan perlakuan yang diujicobakan pada sapi potong yaitu S0: pakan kontrol, S1: S0 + 1,5 ppm Cr, S2: S0 + 250 ppm ekstrak As, S3: S1 + 250 ppm ekstrak As, S4: S1 + 500 ppm ekstrak As, S5: S1 + 750 ppm ekstrak As, S6: S1 + 1000 ppm ekstrak As. Data dianalisis menggunakan analisis variansi dilanjutkan uji Beda Nyata Jujur. Hasil penelitian menunjukkan perlakuan berpengaruh terhadap total bakteri, populasi protozoa, gas total dan metan tetapi tidak berpengaruh terhadap pencernaan bahan kering dan bahan organik serta produksi VFA. Perlakuan mampu meningkatkan total bakteri serta menurunkan gas total dan metan. Hasil terbaik, pada pakan perlakuan S6 yaitu suplementasi ekstrak As pada taraf 1000 ppm pada pakan yang tercukupi Cr organik menghasilkan efisiensi fermentasi yang paling baik. Kata kunci : Ekstrak <i>Allium sativum</i>, mineral mikro organik, populasi mikroba, fermentasi rumen, sapi potong</p> <p>CH Prayitno and N Hidayat/Animal Production 15(1):69-75, January 2013</p>
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<b>Author</b>	Dr Ir CARIBU HADI PRAYITNO, M.P.