PENURUNAN PRODUKSI METAN MELALUI REKAYASA PAKAN ADITIF SECARA *IN VITRO*

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Abstrak. Penelitian yang bertujuan untuk mengkaji penggunaan Iso Butirat, *Saccharomyces cereviseae* dan minyak kedelai untuk menurunkan populasi protozoa, konsentrasi asam asetat dan produksi metan, telah dilaksanakan pada bulan Juli - September 2020 di Laboratorium Ilmu Nutrisi dan Makanan Ternak, Fakultas Peternakan Unsoed. Menggunakan metode eksperimental *in vitro*, Rancangan Acak Lengkap. Sebagai perlakuan yaitu P_1 = pakan basal terdiri dari 60% konsentrat dan 40% rumput, $P_2 = P_1$+ 0,5% iso butirat, $P_3 = P_2$ + 0,5% *Saccharomyces cereviseae* dan $P_4 = P_3$ + 1% minyak kedelai dari bahan kering pakan, setiap perlakuan diulang 5 kali. Materi yang digunakan cairan rumen tiga ekor sapi, diambil dari Rumah Potong Hewan Desa Bantarwuni Purwokerto segera setelah sapi dipotong. Inkubasi *in vitro* dilaksanakan selama empat jam. Variabel yang diukur yaitu populasi protozoa, konsentrasi asam asetat, produksi gas metan. Data yang diperoleh dianalisis ragam dan dilanjutkan uji Orthogonal Contras (Steel dan Torrie, 1995). Hasil penelitian menunjukkan bahwa populasi protozoa, konsentrasi asam asetat dan produksi ngas metan terendah dicapai oleh cairan rumen yang diberi substrat yang terdiri dari 60% konsentrat dan 40% rumput gajah + 0.5% iso butirat + 0,5% *Saccharomyces cereviseae* + 1% minyak kedelai..

Kata kunci: *Saccharomyces cereviseae*, iso butirat, minyak kedelai, protozoa, metan.

Abstract. The research which aims to study the use of Iso Butyrate, Saccharomyces cereviseae and soybean oil to reduce the population of protozoa, acetic acid concentration and methane production, was carried out in July - September 2020 at the Laboratory of Nutrition and Animal Feed Science, Faculty of Animal Husbandry Unsoed. Using an in vitro experimental method, Completely Randomized Design. As treatment, P1 = basal feed consisting of 60% concentrate and 40% grass, P2 = P1 + 0.5% isobutyrate, P3 = P2 + 0.5% Saccharomyces cereviseae and P4 = P3 + 1% soybean oil from dry matter feed , each treatment was repeated 5 times. The material used was the rumen fluid of three cows, taken from the Animal Slaughterhouse in Bantarwuni Village, Purwokerto immediately after the cattle were slaughtered. In vitro incubation was carried out for four hours. The variables measured were the population of protozoa, the concentration of acetic acid, the production of methane gas. The data obtained were analyzed for variance and continued with the Orthogonal Contras test (Steel and Torrie, 1995). The results showed that the lowest protozoa population, acetic acid concentration and methane gas production were achieved by rumen fluid given a substrate consisting of 60% concentrate and 40% elephant grass + 0.5% isobutyrate + 0.5% Saccharomyces cereviseae + 1% oil. soy.

Keywords: Saccharomyces cereviseae, iso butyrate, soybean oil, protozoa, methane.