PENGARUH INOKULASIISOLAT CAMPURAN SELULOLITIK UNGGUL TERHADAP POLA FERMENTAS1 RUMEN KAMBING PERANAKAN ETAWA

INTISARI

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Penelitian ini bertujuan untuk mengetahui pengaruh pemberian isolat campuran seluloiitik unggui (ICSU) terhadap pola fermentasi rumen Kambing Peranakan Etawa. Dalam penelitian ini digunakan 18 ekor kambing Peranakan Etawa berumur ± 4 bulan dengan berat badan ± 11,0 kg. Temak dibagi menjadi tiga perlakuan, setiap perlakuan terdapat enam ulangan. Perlakuan pertama (P0) temak tanpa inokulasi ICSU sebagai kontrol, perlakuan kedua (PI) temak dengan inokulasi ICSU sebanyak 5,0% dan perlakuan ketiga (P2) temak dengan inokulasi ICSU sebanyak 10,0% dari rata-rata konsumsi pakan selama dua minggu awal penelitian. Pakan yang diberikan adalah jerami kacang tanah dan konsentrat dengan perbandingan 60% : 40%. Pengambilan data dilakukan 12 minggu setelah temak di inokulasi (ICSU) ; data yang diperolah dianaiisis dengan analisis variansi berdasarkan rancangan percobaan Completlv Randomized Design (CRD) pola searah dan dilanjutkan dengan uji Duncams New Multiple Range Test (DMRT). Hasil penelitian menunjukan bahwa Inokulasi isolat campuran seluloiitik unggui (ICSU) memberikan pengaruh yang nyata (P<0,05), terhadap peningkatan aktivitas enzim CM-selulase, aktivitas enzim β-glukosidase, protein mikrobia dan terhadap penurunan konsentrasi asam propionat, asam butirat dan amonia. Aktivitas enzim CM-selulase yaitu 1,88(P0), 2,35(PI) dan 2,98(P2) ug glukosa/mg protein enzim/menit, aktivitas enzim β-glukosidase yaitu 1,19(P0), 1,68(P1) dan 1,07(P2) ug nitrophenoi/mg protein enzim/menit dan kandungan protein mikrobia yaitu 0,079(P0), 0,152(PI) dan 0,177(P2) mg/lOOml cairan rumen. Konsentrasi asam propionat yaitu 5,45(P0), 3,14(PI) dan 1,67(P2) µM, konsentrasi butirat yaitu 4,02 (P0), 2,2(PI) dan 0,53(P2) µM dan kandungan amonia yaitu 0,438(PG), 0,359(PI) dan 0,249(P2) mg/lOOml cairan rumen. inokulasi isolat campuran seluloiitik unggui (ICSU) tidak berpengaruh nyata terhadap produksi asam asetat.

(Kata Kunci : kambing Peranakan Etawa, ICSU, fermentasi)

EFFECT OF SUPERIOR CELLULOLYTIC MIXED CULTURE INOCULATION ON ETAWA BREED PATTERN

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Abstract

This experiment was conducted to determine the effect of superior cellulolytic mixed culture (SCMC) Isolate on ruminal fermentation pattern of Etawa Cross bred. Eighteen Etawa Crossed bred, 4 months old, average body weight 11,0 kg and selected anaerobic mixed culture (SCMC) as starter were used in this study. The Etawa Crossed bred were grouped into 3 treatments, with 6 animal as replication for each group. The first group (P0) :animals were not given SCMC as a control, the second group (PI) and the third group (P2) : animals were inoculated by 5,0% and 10,0% (v/w) SCMC of daily fed consumption respectively. All animals were fed *arachis hypogaea* and concentrate mixture (60% : 40%). After twelve weeks the samples were collected. The data obtained were analyzed by analyses of variance methode. The variables obtained that showed significant differentses were determined using Duncant,s New Multiple Range Test. The result of this experiment showed that SCMC inoculation of affected CM-cellulase activity, 0-glukosidase activity, protein microbial productions and decreasing of rumen fluid pH, lactic acid, butirate acid, amonia contents. CM-cellulase activity (ug/g/mmute) were 1,88(P0), 2,35(PI), and 2,98(P2) respectively. β-glukosidase activity (ug/g/minute) were 1,19(P0), 1,68(P1), and 1,07(P2) respectively. Protein microbial (mg/100ml) was 0,079(P0), 0,152(Pi), and 0,177(P2). Degree of rumen fluid pH were 6,71(P0), 6,48(P1), and 6,36(P2) respectively. Butirate (p M) was 4,02(P0), 2,20(P1) and 0,53(P2) respectively, propionate (iiM) was 5,45(P1), 3,14(P2) and 1,67(P2) respectively, Amonium(mg/ld0 ml) was 0,438(P0), 0,359(P1) and 0,249 (P2). SCMC inoculation did not affect acetate contents.

(Key Words : SCMC, Etawa Cross Breed, Fermentation Parameter)