The Cellulolytic Activity And Volatile Fatty Acid Product Of Rumen Bacteria Of Buffalo And Cattle On Rice Straw, Elephant Grass, and Sesbania Leaves Substrates

Title	The Cellulolytic Activity And Volatile Fatty Acid Product Of Rumen Bacteria Of Buffalo And Cattle On Rice Straw, Elephant Grass, and Sesbania Leaves Substrates
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Abstract	Experiment on The Cellulolytic Activity and Volatile Fatty Acid Product of Rumen Bacteria of Buffalo and Cattle on Rice Straw, Elephant Grass, and Sesbania Leaves Substrates had been conducted at Feedstuff Laboratory of Animal Science Soedirman University. The basic designÃƒÂ,Ã‚Â that was used in this experiment was Completely Randomized Design (CRD) with factorial pattern of 6 x 3, three replications. The bacteria isolate as the factors were cellulolytic rumen bacteria isolate of buffalo (A1, A2, and A3) and cattle (A4, A5 and A6) while the substrates (second factor)ÃƒÂ,Ã‚Â were NDF rice straw (S1), elephant grass (S2), and sesbania leaves (S3) Cell walls.ÃƒÂ,Ã‚Â The result of this experiment showed that the interaction between bacteria isolate and substrate ÃƒÂ,Ã‚Â type were significant on pH, NDF digestibility, cellulase activity, pH wasÃƒÂ,Ã‚Â 6.28 until 6.43.ÃƒÂ,Ã‚Â The NDF digestibility range was 12.27 until 55.61 percent. The lowers of cellulase activity was 5.11 IU/ml and the higher was 24.47 IU/ml. The range of acetic acid yield was 63.37 to 307.467 mg/100 ml. Range of ÃƒÂ,Ã‚Â propionic production was 15.17 to 352.20 mg/ 100 ml. The production of butiric acid was 8.77 to 40.87 mg/ 100 ml.ÃƒÂ,Ã‚Â The cellulase activityÃƒÂ,Ã‚Â of cellulolytic rumen bacteria of buffalo was higher than cattle, and also their effect on NDF digestibility of rice straw, elephant grass, and sesbania leaves cell walls. The A3 of cellulolytic rumen bacteria isolate ofÃƒÂ,Ã‚Â buffalo changed cell walls substrat to volatile fattyÃƒÂ,Ã‚Â acid was more effective than cattle, especially on cell elephant grass. Propionic and butiricÃƒÂ,Ã‚Â acid that was produced by cellulolytic rumen bacteria isolate of buffalo more higher than cattleÃƒÂ,Ã‚Â (Animal Production 1 (1) : 1-9 (1999)Key Words: Cellulolytic, VFA, Rumen Bacteria, Buffalo, Cattle.
Publisher Name	Universitas Jenderal Soedirman, Faculty of Animal Science, Purwokerto-Indonesia
Publish Date	2011-05-04
Publish Year	1999
Doi	
Citation	
Source	ANIMAL PRODUCTION
Source Issue	Vol 1, No 1 (1999): January
Source Page	
Url	http://animalproduction.net/index.php/JAP/article/view/1
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