

Nutritive Value Evaluation on Rumen Content and Sludge Fermented with *Cellulomonas* sp. as Rabbit Feed

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Abstract: Livestock feed availability is affected by more green field conversion to residential, industrial, and transportation areas. To anticipate the limited land for animal feed plants, and to reduce the environmental pollution. Waste utilization for animal feed has important and meaning for efficient farm development. Rumen content and sludge are wastes available in high number and even can contaminate the environment. Both animal wastes are rich in essential amino acid and potential as animal feed. The use of cellulolytic bacteria (*Cellulomonas* sp.) starter in the fermentation is expected to be able to degrade crude fibers and to increase protein content. This study aims to evaluate the nutritive value of rumen content and sludge fermented using *Cellulomonas* sp. that the best level of microbe addition and incubation to make feed matter mixture for rabbits. The study applied factorial experiments in completely randomized design with 4 replications. First factor was cellulolytic bacteria colony concentration (K), $K_1 = 10^7$ cfu/g dry matter, $K_2 = 10^8$ cfu/g dry matter, and $K_3 = 10^9$ cfu/g dry matter, respectively, and second factor was incubation period (L) at room temperature, $L_1 = 6$ days, $L_2 = 8$ days, and $L_3 = 10$ days, respectively. Results revealed that rumen content and sludge mixture fermented at the bacteria concentration of 10^7 cfu/g dry matter and 8-day incubation gave an optimal outcome based upon its nutrient content for rabbit feed. In addition, the use of these wastes could also solve quality and sustainable feed availability problems and reduce environmental pollution impacts.

Keywords: Rumen content, sludge, fermentation, *Cellulomonas* sp.

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