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EVALUATION OF DRY MATTER DIGESTIBILITY AND ORGANIC MATTER OF IN VITRO UNSATURATED FATTY ACID BASED RATION OF RUMINANT

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ABSTRACT

This study aims to evaluate digestibility in feed ruminant based on unsaturated fatty acids in vitro. This research used cow rumen fluid, forage substrate and conception with a ratio of 10:40. The measured variables were digestibility values including dry matter digestibility and organic matter in vitro. The experimental design used was Completely Randomized Design consisting of 4 treatments consisting of (R1) feed without soybean oil, (R1) feed with 2.5% soybean oil, (R2) feed with 5% soybean oil, (R3) feed with soybean oil 7.5% in 100% dry matter (DM). While for experiment using calcium fish oil was consisted of (R1) feed without fish oil, (R1) feed with fish oil 2.5%, (R2) feed with fish oil 5%, (R3) feed with fish oil 7.5% in 100% dry matter (DM). Each treatment was performed four replications. The results showed that both soybean oil and calcium fish oil had significant effect (P<0.05) on the digestibility of dry matter and organic matter. The conclusion in this research is in order to 7.5% of both soybean oil and fish oil could be used in ruminant diets because it is able to maintain good digestibility of dry matter and organic matter. Digestibility value of 2.5% use of soybean oil and calcium fish oil gives the digestibility value such as without adding oil.

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INTRODUCTION

Feed is one of important factors that contribute to achieve optimal production of a livestock. Feed should be put into top priority of livestock management because 60-70% of production costs are determined by the main feed. Feed for ruminant could be raw forage. As we know that feeding fresh forage is limited to meet the needs of livestock, in addition to the forage is still a major source of methane gas

The use of unsaturated fatty acids in the diet can provide benefits for livestock because these fatty acids can utilize electrons to reduce methane production in the rumen. Unsaturated fatty acids are also able to maintain the stability of propionic acid in the rumen, so that this acid can be maximized in the chemical process for the determination of meat quality. Use unsaturated fatty acid could be interesting to investigate considering the process of the metabolism in the rumen, even though a source of hydrolysis