

EFFECT OF FEEDING COCONUT OIL AT DIFFERENT DIETARY LEVELS ON THE PROTEIN PROFILE OF GOAT MILK

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Introduction

The rumen microbial ecosystem in ruminants mainly consists of bacteria and protozoa. The presence of ciliated protozoa in the rumen ecosystem is associated with an increased recycling of microbial nitrogen in the rumen (Jouany *et al.*, 1996) and reduced amino acid supply to the intestine. Thus, elimination of protozoa from the rumen is desirable, when performance of the animal is limited by the availability of amino acids for protein synthesis. Such effects sometimes lead to protein deficiencies in ruminants. Previous studies have reported that feeding of a diet rich in fat either saturated or unsaturated fatty acids could decrease the protozoal population in the rumen. Thus, the objective of this study was to determine the effect of coconut oil, which is rich in saturated fatty acids on the crude protein content and the protein profile of goat milk.

Materials and Methods

Twenty four Jamnapari lactating goats reared at the goat breeding center, Imbulandanda, were used. They were divided into three groups and were

assigned to different dietary treatments. The composition of each diet is shown in Table 1. Since the treatment groups contained 2.5 % and 5 % of coconut oil, sucrose was added to balance the energy levels of each of the diets. Paddy husk was used as a filler to make sure all three diets are identical in all nutrients. A 250 g of the experimental diet was given to each goat daily. Total nitrogen content of milk was determined by the Kjeldahl method using DK 6 heating digester and UDK 132 semiautomatic distillation unit. Protein profile was determined from sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS PAGE), using Mini-PROTEAN II Electrophoresis Cells. Four milk samples from each of the dietary groups were randomly selected for SDS PAGE analysis. Total protein content of skimmed milk was determined by Bradford method.

One-way ANOVA with Neuman Keuls post hoc test was used for the statistical analysis of the concentrations of crude milk proteins in goats fed with the different diets.

