

Low-Cost Forage Preservation and Evaluation in Relation to Nutrient Intake, Digestibility and Rumen Fermentation Characteristics of Indigenous Cross Bred Cattle

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An experiment was conducted to evaluate the nutrient intake, digestibility and rumen fermentation characteristics of maize (*Zea mays*) and napier (*Pennisetum purpureum*) silages preserved in Bamboo-mat Fenced Chamber (BFC) in comparison with fresh napier fodder. Three cannulated indigenous cross-bred animals with similar live weight (170 ± 5 kg) and age (5-6 years old) were assigned into 3x3 Latin Square Design (LSD) in 3 consecutive studies. Each study period was continued for 21 days in which 14 days were considered as adjustment period followed by 7 days for collection and measurement period. Maize and napier fodder were ensiled with 2% molasses (on DM basis) in Bamboo-mat Fenced Chamber (BFC) for 30 days. Napier fodder diet (T0) contained 35% DM from napier fodder while diets of maize silage (T1) and napier silage (T2) contained 35% DM from maize and napier silage respectively. In addition to 30% DM from rice straw and 35% DM from concentrates in all diets. The higher non-fiber carbohydrates (NFC) presence in maize silage than napier fodder and napier silage. Overall ruminal pH of napier fodder, maize and napier silages preserved in BFC were around normal physiological range (6.4-7.0). Post feeding, $\text{NH}_3\text{-N}$ concentration of napier silage was significantly ($P < 0.05$) higher than maize silage and napier grass. At 1, 2, 3 and 4 hrs after feeding, average $\text{NH}_3\text{-N}$ concentrations obtained in this present experiment above 50 mg/l were thought to be optimum value for microbial protein synthesis and ruminal volatile fatty acids (VFA) concentrations (mM/l) was not significantly ($P > 0.05$) changed. Results of nutrient intake, digestibility and rumen fermentation characteristics of maize and napier silage in comparison with napier fodder proved that the forages can be preserved in BFC without any harmful effects of nutritional and rumen fermentation characteristics.

Biography:

Md. Abdullah Al Mamun is an Assistant Professor, Dept. of Food Technology and Nutrition Science (FTNS), Noakhali Science and Technology University (NSTU), 3814 Noakhali (Bangladesh). Responsibilities includes as an Assistant Professor taking courses on Assessment of Nutritional status, Community Nutrition, Nutrition Problem, Development Nutrition and Data Management Analysis, Human Anatomy and Physiology, Food Chemistry and Biochemistry. Moreover, I am a member of Academic Council. Being a member of Research cell of Food Technology and Nutrition Science Department, my task is to conduct seminar on recent issues.