Tropentag, October 9-11, 2007, Witzenhausen

"Utilisation of diversity in land use systems:
Sustainable and organic approaches to meet human needs"

Nutritive Value and Utilisation of Ruzi (*Brachiaria ruziziensis*) and Napier (*Pennisetum purpureum*) Grass Silages by Cattle

Choke Mikled[1], Therdchai Vearasilp[1], Udo ter Meulen[2], Sonthaya Moonsikeaw[1]

[1] *Chiang Mai University, Department of Animal Science, Thailand*
[2] *Georg-August-Universität Göttingen, Institute of Animal Physiology and Animal Nutrition, Germany*

Abstract

Four experiments were carried out to evaluate the nutritive value and potential utilization of ruzi (*Brachiaria ruziziensis*) and napier (*Pennisetum purpureum*) grass silages. The grasses were ensiled with different additives and assessments were carried out using conventional digestibility trials, indicator method and an in vitro gas production technique. In experiment I ruzi grass was ensiled with 5 % molasses (T1), 5 % molasses + 5 % coconut meal (T2), 5 % coconut meal (T3) and 3 % urea + 3 % rice bran (T4). In experiment II napier grass was ensiled with 5 % molasses (T1), 15 % cassava leaf (T2), 20 % soybean hulls (T3) and 20 % leucaena leaf (T4). In experiment III, four crossbred native × Holstein cannulated cows were used to assess in sequence the digestibility of the respective silages. In experiment IV, the Menke in vitro gas technique was used to derive the energy values of the silages. The quality of all silages was assessed to be good with a quality score ranging between 70.17 and 90.25. The pH was less than 4.1. The lactic acid content was significantly ($p < 0.05$) different with ruzi grass (T2) and with napier grass (T1) having the highest values. Metabolisable energy content was however highest in ruzi grass (T1) and for napier grass (T1). Efficiency of nitrogen uptake with ruzi grass was significantly ($p < 0.05$) highest with T1 while with napier grass this was significantly ($p < 0.05$) highest with T1 as well. Therefore Ruzi grass ensiled with 5 % molasses + 5 % coconut meal and napier grass ensiled with 5 % molasses were relatively better utilised than the other treatments. It is important to carry out further work assessing animal performance on the silages.

Keywords: *Brachiaria ruziziensis*, *Pennisetum purpureum*, silage, nutritive value, cattle

Contact Address: Udo ter Meulen, Georg-August-Universität Göttingen, Institute of Animal Physiology and Animal Nutrition, Kellnerweg 6, 37077 Göttingen, Germany, e-mail: umeulen@gwdg.de