

***IN-VITRO* DIGESTIBILITY AND METHANE
PRODUCTION OF FORAGE VARIETIES (CO-3,
CO-4, SUGARGRAZE) GROWN IN SOUTHERN
PROVINCE OF SRI LANKA DURING YALA
SEASON**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture

Uva Wellassa University

in partial fulfillment of the requirement of

the degree of

Bachelor of Animal Science

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2018

ABSTRACT

The study was conducted to assess the nutritive values of some forage varieties by using *in-vitro* fermentation technique. Therefore, a field experiment was carried out during yala season (May to September 2017) to assess the nutritive values of sorghum (*Sorghum bicolor* (L.) Moench) and Hybrid Napier varieties (*Pennisetum perpureum* X *Pennisetum americanum*) in the research plot of Faculty of Agriculture, University of Ruhuna Sri Lanka. The experimental design was Randomized Complete Block Design with three varieties namely Sorghum (variety Sugargraze) and Hybrid Napier (varieties CO-3 and CO-4) and with three cutting intervals (4th, 6th and 8th week). All harvested forages were chopped and dried in an oven at 60°C. Dried samples were ground and analyzed for Dry Matter (DM) content, Ash content, Crude Protein (CP) content, Organic Matter Digestibility (OMD), Metabolizable Energy (ME) and Methane production. Results revealed that, Greater ($p < 0.05$) DM% was found in Sugargraze (94.76%, 98.56%) at 4 and 8 weeks of growth respectively. The CP% and Ash% were decreased in all varieties with the increased cutting frequency. Sugargraze showed the highest ($p < 0.05$) CP% (21.19%) and ash content (12.78%) at 4 weeks of growth while least CP% (20.33%) and ash (9.26%) content were in CO-4. Sugargraze harvested at 4, 6 and 8 weeks of growth had highest ($p < 0.05$) OMD% (63.18%, 59.49% and 55.87%) respectively. ME% was highest (9.2%, 8.70%) for Sugargraze at 4 and 6 weeks of growth respectively. The lowest methane production was recorded in Sugargraze (10.05 mg/ g of digested dry matter) at 4th week of harvesting. Nutritive values reported for various fodders in this communication could be used for better utilization of locally available feed resources at correct time of harvesting. Among the varieties Sugargraze was superior ($p < 0.05$) to others in terms of CP%, Ash content, OMD%, ME% and methane production.

Keywords: Sugargraze, Methane production, Organic Matter Digestibility, Metabolizable energy, Cutting intervals