(Benvenutti *et al*. 2005) where the animals had similar weight gains either grazing sugar cane or feeding chopped or whole sugar cane in troughs. However, the cane grazing method is more cost effective as it avoids the cost of cutting, carrying and chopping the sugar cane. The steers of T3 had a significantly lower weight gain than those of T1 and T2 ($P \leqslant 0.05$). *A. catarinensis* did not seem to provide the same level of nutrition as the protein supplement used in T1 and T2. However, the weight gain of the animals of T3 was reasonable considering that the protein supplement was not used in this treatment. This reduces the costs and contributes to the economic sustainability of beef production.

Conclusions

Fully grown sugar cane grazing results in similar weight gain to chopped sugar cane fed in troughs. The simultaneous grazing of sugar cane and *A. catarinensis* results in lower weight gain than grazed sugar cane with protein supplement. However, the use of *A. catarinensis* is cost effective as it does not requires the use of protein supplement and allows a reasonable animal performance during winter.

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Nutritional evaluation of a bagasse-based ration for cows

Geerjanand Saraye[†]

Agricultural Research and Extension Unit, Newry complex, 230 Quatre Bornes, Mauritius

Introduction

In Mauritius the most readily available plant material to be used as ruminant feed is from the sugar cane industry. With the phasing out of the sugar protocol in 2009, much attention is being given to alternative use of sugar cane including livestock production. The use of sugar cane by products as animal feeds has therefore been reconsidered locally and in many countries (Pires *et al*., 2004). It is within this context that this study was carried out so as to evaluate the use of locally available materials for formulating a feed for ruminants based on bagasse as the source of fibre. Other locally available ingredients such as molasses, wheat bran, mineral mixture, salt and urea were used. The objective was to assess the palatability and intake of a bagasse-based ration by cows and to determine its effect on milk production.

Materials and Methods

Sugar cane bagasse (35%) was used with other locally available ingredients (molasses (35%), wheat bran (16%), cotton seed cake (10%), common salt (0.5%), mineral mixture (0.5%) and urea (3%)) to constitute a ration for ruminants, bagasse based feed (BBF). The digestibility of BBF was studied with ten entire male and two female goats in a completely randomized design in digestibility crates. The experimental period lasted for 18 days and comprised an adaptation period (10 days) followed by a feed intake, digestibility and nitrogen balance trial and rumen fluid sampling on the last 2 days of measurements for ammonia-N and PH determination. *In-situ* dry matter degradability of BBF was also investigated using nylon bag technique with fistulated bulls according to the procedures described by Ørskov, 2000. A feeding trial was conducted with fourteen lactating cows in 100 days in milk to determine the effects of feeding BBF on milk production. The animals were grouped in a completely randomised block design, each animal representing one block.

Results

The apparent digestibility of DM, OM and NDF for BBF were 76.92, 76.77 and 59.14 compared to the control diet were 68.21, 69.98 and 69.87 which was significantly different ($P<0.05$). There was no difference in the apparent digestibility of CP, which was on average 73.5. The N- retention was on average 72% of the N- intake for both of the diets. BBF did not affect the rumen pH but there was a significant increase in ammonia-N. The DM degradability of BBF was 77% compared to control diet 57%. There was no significant difference of DM intake for the BBF compared to the control diet. The milk production was not significantly different ($P < 0.05$) for the BBF compared to the control diet. There was a positive live weight change during the experiment for both groups of animals. The high dry matter intake of the BBF was mainly

[†] E-mail: nimishe@yahoo.com

due to supplementation with molasses, cotton seed cake and urea. Supplementation is one means of increasing nutrient supply to animals that are unable to consume sufficient nutrients as forage (Romney and Gill, 2000). This suggests that BBF can maintain milk production as well as contribute to the building up of the body reserve of lactating animals.

Conclusions

BBF can be used as feed for ruminants which can sustain growth and milk production.

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Performance and carcass characteristics of lambs fed high moisture corn silage with soybean seeds, sunflower seeds or urea

Cloves Cabreira Jobim†, Moysés Calixto Júnior and Antonio Ferriani Branco

Universidade Estadual de Maringá, Av. Colombo, 5970, 87020-900, Maringá – Paraná, Brazil

Introduction

Silage of high moisture corn using additives to increase nutritional value, especially in relation to crude protein and energy could give to farmers an alternative to commercial concentrates (Jobim *et al*., 2009). This research was conducted to evaluate the effect of diets with high moisture corn that received inclusion of soybean grain, sunflower grain or urea as additive during ensiling over lambs performance.

Material and Methods

The performance of lambs was evaluated in a feedlot using a diet with corn silage and a concentrate based on high moisture corn grain with inclusion of soybean grains, sunflower grain or urea. Treatments evaluated were the following: high moisture corn silage (CG); high moisture corn silage with 20% of soybean seeds (CGSO); high moisture corn silage with 20% of sunflower seeds (CGSU) and high moisture corn silage with 1% of urea (CGU). The diet was composed of 50% roughage and 50% concentrate. A total of 32 crossbred lambs (Texel × Santa Ines) were used. Animals were slaughtered, carcass were weighted to obtain hot carcass weight (HCW) and then stored in a maturation chamber

Table 1 *Initial live weight (ILW), final live weight (FLW), average daily gain (ADG), hot carcass weight (HCW), cold carcass weight (CCW), lost of weight by refrigeration (LWR), true yield (TY) and compacity carcass index (CCI)*

Parameters	CG	CGSO	CGSU	CGU	Mean	*P*-value	CV (%)
ILW (kg)	19.40	17.62	19.42	18.56	18.71	0.26	24.33
FLW (kg)	32.07	31.86	32.67	32.43	32.25	0.54	4.17
ADG (kg)	0.23	0.23	0.24	0.24	0.24	0.18	16.65
HCW (kg)	14.35	14.08	14.80	14.40	14.41	0.84	6.17
CCW (kg)	13.73	13.70	14.44	14.12	13.99	1.76	5.12
LWR (%)	4.15	2.65	2.40	2.24	2.83	1.56	12.04
TY (%)	54.70	54.68	56.10	55.64	55.27	2.08	2.39
CCI (kg/cm)	0.218	0.226	0.231	0.234	0.227	1.57	6.78

CG = high mosture corn silage, CGSO = high moisture corn silage with soybean seeds, CGSU = high moisture corn silage with sunflower seeds and CGU = high moisture corn silage with urea. CV = Coefficient of variation.

† E-mail: ccjobim@uem.br