

Table 1. Regression analysis of the actual dry mater intake (DMI) values and predicted by systems NRC, CNCPS e BR-CORTE to Nellore and Red Norte

Nellore							
System	r ² a	Slope			Intercept		
		Value	SEM	P	Value	SEM	P
NRC	-0.0301	-0.09011	0.130	<0.01	9.807	1.401	<0.01
CNCPS	-0.0390	-0.07674	0.134	<0.01	10.318	1.444	<0.01
BR-CORTE	-0.0513	-0.07212	0.206	<0.01	10.433	2.213	<0.01
Red Norte							
System	r ² a	Slope			Intercept		
		Value	SEM	P	Value	SEM	P
NRC	0.0116	0.12409	0.111	<0.01	7.95	1.164	<0.01
CNCPS	0.0060	0.12703	0.119	<0.01	8.56	1.253	<0.01
BR-CORTE	-0.0443	0.05078	0.153	<0.01	9.010	1.607	<0.01

Key Words: *Bos indicus*, crossbreed, requirements systems

Ruminant Nutrition: Grass Cattle

T328 Nutrient balance and fermentive parameters of continuously cultured rumen fluid maintained with bermudagrass hay and supplied with additional soybean hulls and(or) corn. A. I. Orr* and B. J. Rude, *Mississippi State University, Mississippi State.*

Ruminal fluid was continuously cultured using the BioFlo® 110 fermentation system to evaluate the *in vitro* fermentive parameters of ground moderate-quality bermudagrass hay either alone (HAY; 20 g DM L⁻¹ d⁻¹) or supplemented (7 g DM L⁻¹ d⁻¹) with corn (CORN), soybean hulls (SBH), or both (25:75; MIX). Each of 4 vessels were maintained at 2L and 39°C while under constant agitation and N₂ sparging. Every 3h (between 0700 and 1900) fresh mineral-buffer was added. Culture pH did not to exceed 6.5 by automated addition of 2N H₂SO₄. Data was analyzed as a Randomized Complete Block, blocked by week (n=5). Each week, fresh ruminal cultures were grown for 9 d with sampling d 7, 8, and 9. Addition of hay DM was uniform (P = 0.34) among cultures (ranging from 39.07 to 39.14 g). Total DM added was slightly greater (P < 0.0001) for CORN (53.78 g) than SBH or MIX (53.61 and 53.58 g, respectively), and all 3 received more DM than HAY (39.07 g). Nutrient balance indicated DM disappearance was greatest (P < 0.0001) for MIX and least for HAY (0.0045 and -0.0058 g, respectively). No differences (P = 0.10) were observed for CP (-0.24 to -0.17 g), NDF (-0.04 to -0.01 g), or ADF (-0.001 to 0.02 g) disappearance. Culture pH was least (P < 0.01) for CORN from 2 to 6 h post-feeding (5.94 to 6.18). Ruminal ammonia-N was least (P < 0.01) for CORN 0 thru 12 h post-feeding (from 13.3 to 17.33 mg/dL) with MIX resulting in the next lowest (P < 0.01), 6 thru 12 h post-feeding (ranging from 16.59 to 18.55 mg/dL). Ammonia-N concentrations were evaluated as polynomial functions over time revealing a weak fit to the model for CORN (quartic; P < 0.01; Adj-R² = 0.1135), SBH (cubic; P < 0.01; Adj-R² = 0.1024), and MIX (quadratic; P < 0.01; Adj-R² = 0.0849). Data for HAY did not adequately fit any of the polynomial models. Analysis of VFA is forthcoming. Fermentive characteristics indicate a more complete and efficient utilization of nutrient DM and ammonia-N by cultures provided CORN and MIX. Additional evaluation is needed to assess nutrient disappearance under each ascribed diet.

Key Words: continuous culture, rumen, soybean

T329 Effects of dietary energy source in late gestation diets on pre- and post-partum beef cow performance. A. E. Radunz*, H. N. Zerby, F. L. Fluharty, and S. C. Loerch, *The Ohio State University, Wooster.*

Mature Angus-cross (n = 180) beef cows (initial body weight = 573 ± 5 kg) were used to determine the effects of late gestation dietary energy source on pre- and post-partum cow performance. Cows were blocked by location (n = 3) and stratified by body weight (BW), body condition score (BCS) and age (5 pens/treatment). Cows were adapted to diets starting at approximately 200 d of gestation and fed until 1 wk prior to expected calving date. Cows were fed 1 of 3 energy sources: hay (HAY); corn (LFC); and dried distiller grains (DDGS). Cows allotted to HAY were allowed ad libitum access to round-bale grass hay and averaged 12.2 kg DMI/d. Limit-fed corn and DDGS diets provided 4.8 kg whole corn or 4.0 kg DDGS, plus 2.2 kg hay, and 1.0 kg supplement to meet nutritional needs during late gestation. Following parturition, cows were fed a common diet and managed as one group per location. Milk production was measure by weigh-suckle-weigh at an average of 31, 100, and 164 d postpartum. At 2 locations, cows were synchronized for estrus and bred 81 ± 4 d postpartum. Cows fed DDGS gained more BW than either HAY or LFC (1.6, 1.1, and 1.1 ± 0.8 kg/d, respectively; P < 0.01) and had improved (P = 0.02) BCS as compared to HAY at the end of gestation. However, at the end of lactation (164 & polusmn; 7 d) BW (P = 0.23) and BCS (P = 0.13) were not different between treatments. Prepartum energy source did not affect first service conception rates (P = 0.31) or overall pregnancy rates (P = 0.79) postpartum. Milk production and composition were not different (P > 0.2) among treatments. Daily feed costs during late gestation were less for DDGS as compared to LFC and HAY. Limit-feeding DDGS as an alternative energy source in late gestation diets can improve cow BCS and BW gain and reduce daily feed costs; however these differences in weight gain and BCS at the end of gestation did not impact postpartum reproduction performance, milk production, or cow performance. Calf data are presented in a companion abstract.

Key Words: prepartum nutrition, beef cattle, energy source

T330 Growth performance and metabolism of cow-calf pairs receiving a high or low total non-structural carbohydrate diet with or without folic acid and vitamin B₁₂ supplementation of the dams. J. Mercier*¹, C. L. Girard², D. Cinq-Mars¹, and R. Berthiaume², ¹Département des Sciences Animales, Pavillon Paul-Comtois, Université Laval, Québec, QC, Canada, ²Agriculture et Agroalimentaire Canada, Centre de Recherche sur le Bovin Laitier et le Porc, Sherbrooke, QC, Canada.

Our objective was to study the effects of a maternal supplementation of folic acid and vitamin B₁₂ (v+ vs. v-) and of dietary total non structural carbohydrates (HTNC vs. LTNC) on milk production, cow and calf weights and cow plasma concentrations of glucose and non-esterified fatty acids (NEFA). Thirty-two spring calving cows (723 ± 92 kg) and calves (77.8 ± 19.5 kg) were blocked according to parity and calving date (8 blocks of 4 cows) and randomly assigned to each treatment according to a randomised complete block design. Within each block, 2 cows were fed a LTNC diet, whereas the 2 other cows were fed a HTNC diet. Within each diet, cows received either no vitamins (v-) or weekly intramuscular injections of 160 mg of folic acid plus 10 mg of vitamin B₁₂ (v+). During the first 100 days of lactation, the cows were fed daily grass silage ad libitum with (HTNC) or without 1 kg of dried molasses (LTNC). From day 100 to 200, cow-calf pairs were allotted new pasture every day at 0630h (LTNC) or 1830h (HTNC). During days 200 to 300, cow-calf pairs were fed ad libitum silage cut at 0600h (LTNC) or 1800h (HTNC). All calves were weaned at 300 d and slaughtered within 30 d. Treatments had no effect on milk yield (P=0.17) or cow plasma NEFA (P=0.41) but v+ cows tended to lose less BW than v-cows (+12.8 vs. -10.1 ± 9.9 kg; P=0.10). A TNC x vitamin interaction (P=0.02) was observed as the combination v+ and LTNC increased cow plasma glucose concentrations (3.95 vs. 3.80 ± 0.06 µM; P=0.03) and calf weights (246 vs. 223 ± 6.2 kg; P=0.01) whereas it had no effect on HTNC (P=0.26 and P=0.47 for plasma glucose and for calf weight, respectively). Our results suggest an interaction between dietary TNC levels and dam folic acid and B₁₂ supplementation. The latter seems to have a beneficial effect when a LTNC diet is fed.

Key Words: beef, total nonstructural carbohydrates, B-vitamins

T331 Camelina meal and crude glycerin as feed supplements for developing replacement beef heifers. P. Moriel*, E. P. Goncalves, P. L. Price, V. Nayigihugu, and B. W. Hess, *University of Wyoming, Laramie.*

Ninety-nine Angus × Gelbvieh rotationally crossed heifers were used in a randomized complete block designed experiment to determine the effect of feeding camelina biodiesel co-products (meal and crude glycerin) on serum thyroid hormone concentrations as well as growth and reproductive performance. Heifers were stratified by initial BW (300 ± 2.1 kg) and randomly assigned to receive 1 of 3 experimental supplements (12.6% dietary CP): control (50% ground corn and 50% soybean meal, as-fed); camelina meal; and glycerin (50% soybean meal, 33% ground corn, 15% crude glycerin, 2% corn gluten meal; as-fed). Bromegrass hay and supplements were offered daily at 2.40% and 0.3% of BW (as-fed) for the first 30 days and at 2.26% and 0.29% of BW (as-fed) for last 30 days, respectively. Blood samples were taken from the coccygeal vein or artery at the beginning, after 30 days, and at the end of the 60-d experimental feeding period. Serum concentrations of T3 and T4 were determined by RIA. On d 60, heifers were synchronized for estrus using a 1-shot PGF2α protocol and any heifer showing estrus was bred via AI 12 hours after standing heat. Heifers not detected in estrus were bred via AI 14 days after the end of the experimental feeding

period. No treatment effect was observed for ADG (P = 0.978), final BW (P = 0.967), heifers detected in estrus before timed AI (P = 0.787), first conception rate to timed AI (P = 0.541), overall first conception rate (P = 0.945), initial (P = 0.392), mid- (P = 0.499), and final (P = 0.498) serum concentration of T4, or initial (P = 0.731) and mid- (P = 0.905) serum concentrations of T3. Final concentrations of T3 in serum (P = 0.034) were 79.54, 83.30 and 92.95 ng/dL for heifers fed control, glycerin and camelina meal, respectively. These preliminary results indicate that camelina biodiesel co-products are acceptable dietary supplements for developing replacement beef heifers.

Key Words: camelina, glycerin, heifers

T332 Growth performance and breeding soundness of Angus bulls fed FlaxLic®. A. C. Pesta* and J. S. Drouillard, *Kansas State University, Manhattan.*

We evaluated growth performance and semen attributes of Angus bulls fed molasses-based block supplements containing ground flaxseed and linseed oil. Yearling bulls (n=120; initial BW=507 kg) were allocated equally among three feeding pens equipped with GrowSafe feeders and fed *ad libitum* amounts of a forage-based total mixed ration (TMR) for 70 d. Treatments consisted of the TMR only (Control); TMR plus a block supplement containing linseed oil and ground flaxseed (FlaxLic; 15% ether extract and ~8% alpha linolenic acid [ALA]); or a similar supplement in which a portion of molasses was replaced with corn steep liquor (CSL). Feed intakes of individual animals were monitored using the GrowSafe system. Blood serum and semen samples were retained from a random subset of bulls in each treatment on d 70. Compared to control bulls, FlaxLic and CSL increased serum and decreased semen concentrations of omega-3 fatty acids (P < 0.05). Supplements had no effect (P > 0.10) on percentages of normal or motile sperm compared to Control bulls, and breeding soundness scores were similar among treatments (P > 0.10). FlaxLic increased ADG by 11 and 19% compared to Control and CSL treatments, respectively (P < 0.05), and improved gain efficiency by 18% (P < 0.05) compared to bulls fed Control and CSL treatments. Supplementation with sources of alpha linolenic acid can increase serum concentrations of omega-3 fatty acids, but increases do not necessarily manifest as improvements in semen quality. Additionally, ingredient composition of supplements (though similar in nutrient content) can impact growth performance.

Table 1. Performance, Serum, and Semen Attributes of Yearling Bulls

Item	Control	FlaxLic	CSL	SEM
DMI, kg	12.2 ^a	1.7 ^b	11.6 ^b	0.14
ADG, kg	1.33 ^a	1.48 ^b	1.24 ^a	0.046
Gain/feed	0.11 ^a	0.13 ^b	0.11 ^a	0.003
Serum ALA, ug/g	126 ^a	147 ^b	140 ^{a,b}	5.1
Semen ALA, ug/g	11.9 ^a	7.3 ^b	8.9 ^b	1.08

^{a,b}Means without common superscripts are different, P < 0.05.

Key Words: omega-3 fatty acid, semen

T333 A meta-analysis of dry matter intake in Nelore and Zebu-crosses cattle. J. A. G. Azevedo^{1,2}, S. C. Pina², M. L. Chizzotti³, and O. G. Pereira^{*2}, ¹Universidade Estadual de Santa Cruz, Ilheus, Bahia, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Universidade Federal do Vale do São Francisco, Petrolina, Pernambuco, Brazil.

This experiment was carry out aiming develop and evaluate new equations for dry matter intake (DMI) prediction in Nelore cattle and Zebu-crosses using meta-analysis. The data used for parameter estimation were collected from independent performance experiments with growing and fattening Nelore and crossbred (Nelore × Bos taurus), compiled from 27 thesis (study) and 561 of N experimental units. Prior to propose an equation to DMI predict was observed that the genetic group was a significant (P<0.15) source of variation. Therefore, different equations to predict DMI in the Zebu-Crosses e Nelore cattle were independently developed. The model used included terms for body weight (BW or BW^{0.75}), average daily gain (ADG) and average daily gain quadratic (ADG²). Equation development was conducted in PROC MIXED using mixed-model regression techniques. In the Validation of the DMI predict equation were utilized independent experiments published between 2005 and 2008 in the Brazilian Journal of Animal Science and one thesis with independent datasets. The predictions of the fitted equations for Nelore cattle overestimated DMI, when the DMI were smaller than 7 and more than 10 kg d⁻¹, however, the predicted DMI for the both equation fitted were next the tendency line. For Zebu-Crosses cattle dispersions of 3 kg d⁻¹ was observed when extreme intakes were appraised. While for the prediction equation that includes BW^{0.75} the intercept did not differ of zero and the slope did not differ of 1, beyond the largest coefficient of determination values were for equations with Zebu-Crosses cattle. According to the statistics from regression, both, Zebu-Crossed and Nelore cattle, the prediction equation that includes BW^{0.75}, were more precise and with a slight advantage than the equation with BW, when the values of mean square prediction error, mean absolute error and mean bias were evaluated. Fitted equations DMI = -2.6098 + 0.08844BW^{0.75} + 4.4672ADG - 1.3579ADG² and DMI = -2.7878 + 0.08789BW^{0.75} + 5.0487ADG - 1.6835ADG² they should be targeted at alternate to predict DMI of Zebu-Crosses and Nelore beef cattle, respectively, in tropical conditions.

Key Words: beef cattle, feed intake, meta-analysis

T334 Dry matter intake and performance of steers fed sugar cane ensiled with different levels of calcium oxide. F. H. M. Chizzotti¹, O. G. Pereira^{*1}, S. C. Valadares Filho¹, M. L. Chizzotti², and R. T. S. Rodrigues², ¹Universidade Federal de Viçosa, Viçosa, MG, Brazil, ²Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.

A trial was conducted with thirty-five crossbred steers (Holstein x Nelore), averaging 350 kg BW, distributed in seven randomized blocks to evaluate levels of calcium oxide (CO) as additive of sugar cane silage. Diets consisted of 50% roughage and 50% concentrate, formulated to be isonitrogenous (12% CP, DM basis). The five treatments consisted of sugar cane ensiled with four CO levels (0, 0.5, 1.0, and 1.5%) and a standard diet with corn silage. The experiment lasted 99 d and steers were fed individually. DMI was measured daily and individually. A mixed model with random effect of blocks was used. There was a negative linear effect (P<0.01) of CO levels on intake of DM (kg/d), while DMI as % of the BW had a quadratic effect with maximum intake of 2.15%BW at 0.53% of CO in sugar cane silage. Quadratic effects of levels of CO were observed on ADG and gain efficiency. Steers fed sugar cane silage with 0.5% of CO or corn silage had similar DM

intakes. However, the ADG of steers fed corn silage diets was higher than those fed sugar cane silages. The addition of up to 0.5% of calcium oxide in sugar cane ensilage improves sugar cane silage quality and animal performance.

Table 1. Effect of calcium oxide (CO) in sugar cane silage on DMI, ADG, gain efficiency and dressing percentage (DP)

Item	CO levels in sugar cane silage, %				Corn silage	P ¹	
	0	0.5	1	1.5		L	Q
DMI, kg	8.83 ^b	9.5 ^{ab}	8.48 ^{cd}	7.73 ^d	9.92 ^a	0.01	0.03
DMI, %BW	2.04 ^{ab}	2.19 ^a	2.03 ^b	1.87 ^c	2.19 ^a	0.03	0.01
ADG, kg	0.89 ^c	1.13 ^b	0.89 ^c	0.71 ^c	1.34 ^a	0.04	0.01
G:F, g/kg	101 ^{bc}	120 ^{ab}	106 ^{bc}	90 ^c	134 ^a	0.17	0.02
DP, %	53.1 ^{bc}	54.3 ^{ab}	53.2 ^{bc}	52.3 ^c	55.6 ^a	0.17	0.09

¹Linear, quadratic effect of CO in sugar cane silage; ^{a,b,c,d}Means within a row differ, Tukey 5%

Key Words: additive, feedlot, roughage supplementation

T335 Effects of protein or fat supplements for finishing beef cattle grazing tropical grass during dry season. A. A. Souza^{*1}, T. I. Ferreira², C. F. Martins¹, and J. C. Hadlich³, ¹UNIDEP/ANHANGUERA, Campo Grande, Mato grosso do Sul, Brazil, ²IAGRO, Campo Grande, Mato grosso do Sul, Brazil, ³UNESP, Botucatu, Sao Paulo, Brazil.

This study has evaluated the effects of additional fat or protein supplements on animal performance and carcass characteristics of Nelore cattle grazing tropical pastures during the dry season. The trial was conducted at University for development of State and Pantanal Region, Mato Grosso do Sul, Brazil. Thirty-six Nelore steers were divided and evaluated in 3 treatments as follows: Control = *Brachiaria brizantha* + mineral supplement; Supl. Fat = *Brachiaria brizantha* + commercial supplement with 10% fat (soybean oil); Supl. Prot = *Brachiaria brizantha* + commercial supplement with 40% protein. The quantities of supplements fed daily were 0.3% of liveweight/animal. The initial and final live weight were 424-463; 415-487; and 415-471 kg for Control, Supl Fat and Supl Prot, respectively. After 130 days on trial, all animals were slaughtered at a commercial plant and backfat thickness measured. The average daily gains were 0.35; 0.50; and 0.57 kg/animal/day for control, Supl. Fat and Supl. Prot, respectively (Table 1). Higher carcass yield was observed for both groups fed supplemented feed. Backfat results were similar to carcass yield results (table 1). The use of fat or protein as grazing supplement had beneficial effects in animal performance and carcass characteristics, finishing grazing animals with higher backfat thickness and carcass yield. The use of supplements for increased nutrient intake during dry season is a necessary step to improve carcass and meat quality of animals finished on tropical pastures.

Table 1. Average daily gains and backfat and carcass yield after chilling

Treatments	Daily Gains (kg)	Backfat (mm)	Carcass Yield (%)
Control	0.35 ^a ± 0.05	2.67 ^a ± 0.20	51.5 ^a
Supl. Fat	0.57 ^b ± 0.04	3.01 ^b ± 0.31	53.3 ^b
Supl.Prot	0.50 ^b ± 0.03	3.42 ^b ± 0.33	53.1 ^b

*means with different superscripts are statistically different (P< 0.05)

Key Words: beef cattle, carcass characteristics, meat quality

T336 Effect of supplemental energy level on performance, blood parameters and carcass characteristics of steers finished on pasture. H. O. Patino^{*1}, F. S. Medeiros¹, K. C. Swanson², and M. A. Sierra¹, ¹Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, ²Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

To evaluate the effect of supplemental energy levels on performance, blood parameters and carcass characteristics, 24 Aberdeen Angus × Charolais steers were used. The experimental treatments were levels of feeding (0, 0.4, 0.8 and 1.2% BW) of a corn based supplement in a winter pasture of annual ryegrass (*Lolium multiflorum* L) and oats (*Avena strigosa* Schreb) managed in order to avoid constraints to animal performance. Animals were supplemented daily (14:00 – 16:00) in individual pens and slaughtered when they achieved 4.5 mm of fat cover on the rump point. No differences were observed in fat deposition,

measured in live animals with ultrasound at the end of the performance period, and in live weight gain, which had average values of 3.9 mm and 1.54 kg/d, respectively ($p > 0.05$). Blood serum levels of urea were linearly decreased ($p < 0.01$) and cholesterol linearly increased ($p < 0.01$) by energy supplementation, with no differences in the serum levels of glucose and triglycerides ($p > 0.05$). Energy supplementation linearly increased dressing percent ($p < 0.06$) and carcass weight gain ($p < 0.05$), but no differences were observed for rib eye area, slaughter weight and hot carcass weight, which averaged 67.85 cm², 438.95 kg and 227.75 kg ($p > 0.05$). Increasing the levels of energy supplementation resulted in greater dressing percent and greater carcass daily gains, without changes in performance and carcass parameters.

Key Words: blood parameters, energy supplementation, winter pasture

Small Ruminant: Lactation, Physiology, Reproduction, Health

T337 Long-term effects of lipid supplementation on milk concentration of conjugated linoleic (CLA) and vaccenic acid (VA) in dairy goats. G. A. Gagliostro^{*1}, M. A. Rodriguez², V. I. Cejas², M. Martinez³, A. V. Cano¹, P. Gatti², G. Muset², R. A. Castañeda³, and Y. Chilliard⁴, ¹Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina, ²Instituto Nacional de Tecnología Industrial, PTM San Martín, Buenos Aires, Argentina, ³Instituto Nacional de Tecnología Agropecuaria, Salta, Salta, Argentina, ⁴Institut National de la Recherche Agronomique, Theix, Ceyrat, France.

The objective of the study was to test the persistency in milk of fatty acids (FA) that have potential benefits to human health over 150 d after lipid supplementation in Saanen goats. Six animals/treatment grazed a grass based pasture and were individually supplemented with : T1) 1 kg/d cracked corn grain, T2) 1 kg/d corn grain + 30 g/d fish oil (FO) + 109 g/d soybean oil (SO), and T3) 0.5 kg/d corn grain + 0.5 kg/d cracked soybean grain (SG) + 30 g/d FO. Milk samples were collected every 15 d. Data were analyzed using a model including treatment, sampling time, and the interaction. Concentrations of individual FA in milk were expressed as g/100 g of total FA. Protein and lactose concentrations in milk were not affected. Milk fat content increased ($P < 0.06$) by 8.3 g/kg in T2 compared to T1 and T3. In T2, pre-treatment basal concentrations of de novo FA (C4:0-C15:1), C12:0, and C14:0 decreased ($P < 0.01$) after lipid supplementation, but C16:0 concentration did not change. The basal atherogenicity index (AI) decreased ($P < 0.01$) from 2.91 to 1.30 in T2, and from 2.57 to 1.53 in T3. Supplementary lipids decreased C12:0 (-1.31) and C14:0 (-1.74) in T3 ($P < 0.01$). Compared to T1 (2.29 g/100 g) concentrations of VA increased ($P < 0.01$) in T2 (+11.9) and T3 (+9.15) and remained high throughout the experiment. Trans-10 C18:1 ranged from 0.21 to 0.24 g/100 g FA in T1, and from 0.98 to 1.10 in T2 and T3. Basal 9-cis 11-trans CLA averaged 1.27 g/100 g (T1), 1.03 (T2), and 1.26 (T3). The average increase in CLA after 150 d was 4.28 g/100 g in T2 and 3.75 in T3. In T1, CLA concentrations ranged from a minimum of 0.83 g/100 g FA in samples taken at d 135 to a maximum of 1.84 at d 15. SO combined with FO were the most effective to increase milk concentration of trans-11 C18:1 but differences between effects of SO or SG on milk CLA contents were not observed. Feeding SG or SO combined with FO reduced the concentrations of FA linked to cardiovascular risk disease and the AI of milk, and increased the concentrations of CLA and VA over an extended period after lipid supplementation.

Key Words: goat milk, conjugated linoleic acid, vaccenic acid

T338 Effects of mechanical processing of sugarcane on performance and milk composition of dairy goats. V. P. Santos^{*}, L. G. Nussio, G. B. Muraro, S. G. Toledo Filho, R. C. Amaral, J. L. P. Daniel, R. S. Goulart, I. Susin, G. B. Mourão, R. S. Gentil, and C. Q. Mendes, *University Of Sao Paulo/ESALQ, Piracicaba, SP, Brazil.*

The experiment was conducted to evaluate the effects of mechanical processing of sugarcane on milk production and composition in dairy goats. Twelve Sannen × Boer goats (20 ± 5 d in milk) were assigned to a three latin square 4×4 design. Experimental diets were formulated to meet the AFRC (1998) requirements for energy, protein, Ca, and P, and consisted of four treatments (diets). Treatment 1 contained corn silage (C) in a 50:50 (concentrate:roughage ratio) total mixed ration, and the three other treatments were based on sugarcane chopped to mean particle size 0.52, 6.53, 12.40 mm, mixed in a 44:56 ration. Each period consisted of a 10-d period of adaptation followed by 4-d for sample collection. The goats were fed ad libitum individually once daily at 0800 h to allow at least 5 to 10%orts and milked twice daily at 0730 and 1530 h. Milk weight was recorded for each goat and samples were collected for composition during the morning and afternoon across the last 3-d of each sampling period. There were no differences ($P > 0.05$) for intake of DM (kg/d) and DMI (%BW), where the values found for C were 1.63 and 2.73% BW, DM animal/d, and mean values for other treatments (chopped sugarcane) were 1.55, and 2.5% BW, respectively. Differences between treatments were not observed for milk yield (kg/d). However, the percentage of milk fat (%) and 3.5% milk corrected yield (3.5 FCM; kg/d) was higher for C treatment (4.32 and 2.57, respectively) when compared with treatments containing sugarcane. It might be related to the smaller particle size of sugarcane when compared to the corn silage. For the treatments containing sugarcane processed in sizes 0.52, 0.63, 12.4 mm, the observed values for 3.5 FCM and milk fat were 2.09, 2.24, and 2.07 kg/d and 3.92, 3.82, and 3.75%, respectively.

Key Words: silage corn, roughage, fat

T339 Thyroid hormones and blood metabolites of dairy goats supplemented with dietary iodine. A. Nudda¹, G. Battacone¹, G. Bomboi², B. Floris², and G. Pulina^{*1,3}, ¹Dipartimento di Scienze Zootecniche, University of Sassari, Italy, ²Dipartimento di Biologia Animale, University of Sassari, Italy, ³Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.