

leaves in that day. The hand plucking technique is an excellent tool in the determination of the forage quality intake by the animal during the

grazing. However, it is necessary a meticulous evaluation of the habit of grazing to the animal for sampling at a coherent way.

Key Words: light interception, hand-plucked, crude protein

Graduate Student Paper Competition-CSAS Poster Competition: CSAS Graduate Student Competition 2

T98 Effects of ruminally-degradable starch and ruminally-degradable protein levels on urea-nitrogen recycling, microbial protein synthesis, and nitrogen balance in beef heifers. K. Baker*¹, J. J. McKinnon¹, T. A. McAllister², and T. Mutsvangwa¹, ¹*University of Saskatchewan, Saskatoon, SK, Canada*, ²*Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada*.

The objective of this study was to determine the effects of dietary levels of ruminally-degradable starch (RDS) and ruminally-degradable protein (RDP) on urea-N recycling to the gastrointestinal tract (GIT), microbial protein synthesis and N balance of beef heifers. Four ruminally- and duodenally-cannulated beef heifers (723 ± 57 kg BW) were used in a 4 × 4 Latin square design with a factorial arrangement of dietary treatments and 23-d periods. Dietary treatments were 2 levels (DM basis) of RDS (30% vs. 70%) and 2 levels of RDP (36% vs. 52%). Levels of RDS were manipulated by feeding whole or steam-rolled corn. All diets contained 10% CP (DM basis). Jugular infusions of [¹⁵N¹⁵N]-urea (220 mg/d) were conducted for 4 d (d 18-22), with total collection of feces and urine to estimate urea-N kinetics. Both N intake and N balance were unaffected by diet ($P > 0.05$), however, ruminal NH₃-N concentrations were greater ($P = 0.01$) in heifers fed high RDP as compared to those fed low RDP (8.6 vs. 6.3 mg/dL). Endogenous production of urea-N (UER; 129.6 to 152.8 g/d) and urea-N transfer to the GIT (GER; 72.4 to 93.5 g/d) were similar across diets; however, there was a tendency for a RDS × RDP interaction for UER ($P = 0.11$) and UER ($P = 0.10$). The amount of urea-N returned to the ornithine cycle (ROC; 69.6 g/d vs. 61.9 g/d) tended ($P = 0.08$) to be greater in heifers fed high RDP compared to those fed low RDP. Feeding a high level of RDP increased ($P = 0.03$) microbial N supply to the duodenum compared to feeding low RDP. In summary, at a low dietary CP level (10%), feeding high RDP tended to increase the amount of urea-N returned to the ornithine cycle and increased microbial N supply to the duodenum compared to feeding low RDP.

Key Words: fermentable carbohydrate, ruminally-degradable protein, urea-N recycling

T99 Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed diets varying in ruminally-fermentable carbohydrate. D. Kiran* and T. Mutsvangwa, *University of Saskatchewan, Saskatoon, SK, Canada*.

We examined how interactions between ruminal protozoa and ruminally-fermentable carbohydrate (RFC) alter urea-N recycling to the gastrointestinal tract (GIT), microbial protein synthesis and N balance in growing lambs. Four Suffolk ram lambs (61.5 ± 4.0 kg BW) were used in a 4 × 4 Latin square design with 28-d periods and a 2 × 2 factorial arrangement of treatments. Treatments were: 1) partial defaunation vs. faunation; and 2) dry-rolled vs. pelleted barley as the principal sources of RFC. Linoleic acid-rich sunflower oil was fed (6% of DM) as an anti-protozoal agent. Nitrogen balance was measured from d 22 to d 26, with concurrent measurements of urea-N kinetics using continuous intra-jugular infusions of [¹⁵N¹⁵N]-urea. Only minor ruminal protozoa

× RFC interactions were detected. Feeding sunflower oil decreased ($P < 0.01$) total protozoa by 92%, thereby decreasing ($P < 0.01$) ruminal NH₃-N concentration. Intake of N was unaffected ($P \geq 0.12$) by diet; however, urinary N excretion was lower ($P < 0.01$) and retained N was higher ($P < 0.01$) in partially-defaunated compared to faunated lambs. Endogenous production of urea-N (UER) was similar across diets (22.6 to 24.6 g/d); however, urea-N transfer to the GIT (GER), when expressed in absolute amounts (16.4 vs. 13.1 g/d) or as a proportion of UER (0.69 vs. 0.57), and its anabolic use (9.0 vs. 6.0 g/d) were higher ($P < 0.01$) in partially-defaunated compared to faunated lambs. Partial defaunation increased ($P < 0.01$) microbial N supply. Source of RFC did not alter UER; however, urea-N loss in urine, when expressed in absolute amounts (9.5 vs. 7.5 g/d) or as a proportion of UER (0.40 vs. 0.34) were higher ($P < 0.01$), whereas GER as a proportion of UER was lower (0.60 vs. 0.66; $P < 0.01$) in lambs fed dry-rolled compared to those fed pelleted barley. Feeding pelleted barley tended ($P = 0.09$) to increase microbial N supply compared to feeding dry-rolled barley. In summary, partial defaunation or increasing RFC by feeding pelleted barley increased the proportion of UER that was recycled to the GIT, while also increasing microbial N supply.

Key Words: fermentable carbohydrate, ruminal protozoa, urea-N recycling

T100 Effect of feed borne *Fusarium* mycotoxins on the performance of grain fed veal calves. L. M. Martin*¹, K. M. Wood¹, P. L. McEwen^{2,1}, T. K. Smith¹, I. B. Mandell¹, A. Yiannikouris³, and K. C. Swanson¹, ¹*University of Guelph, Guelph, ON, Canada*, ²*Ridgetown Campus, University of Guelph, Ridgetown, ON, Canada*, ³*Alltech, Nicholasville, KY*.

Holstein bull calves (n=32; 177±6.7 kg body weight) were used in a randomized complete block design with a 2 × 2 factorial arrangement of treatments to determine the effects of corn naturally contaminated with *Fusarium* mycotoxins on grain fed veal production and to examine the efficacy of a polymeric glucomannan mycotoxin adsorbent (GMA). Calves were blocked according to room and fed in individual pens, one of four dietary treatments for at least 84 days: 1) control corn + pellet, 2) control corn + GMA pellet, 3) contaminated corn + pellet, and 4) contaminated corn + GMA pellet. Corn and GMA were fed at 75 and 1% of the diet respectively. Deoxynivalenol (DON) was the major mycotoxin contaminant present at 8.31 mg/kg of the total ration. Zearalenone (1.49 mg/kg) and 15-acetyl DON (1.01 mg/kg) were also present in the contaminated corn. Body weight, dry matter intake (DMI), acute phase proteins (haptoglobin, fibrinogen), immunoglobulin A (IgA), blood analytes [glucose (BG) and urea nitrogen (BUN)], organ weights and carcass traits (rib eye area, back fat (BF), marbling and colour value) were measured. Results were analyzed using Proc Mixed in SAS. There were no differences ($P > 0.05$) in total weight gain, DMI, acute phase proteins, IgA, or organ weights between treatments. Calves fed the contaminated corn had a tendency for greater ($P = 0.07$) average daily gain and decreased ($P = 0.003$) feed:gain than calves fed control corn. BG and BUN decreased ($P = 0.004$) and increased ($P = 0.001$), respectively,

for calves fed contaminated corn compared to calves fed control corn. Calves fed contaminated corn had a tendency for less ($P=0.06$) marbling than calves fed control corn and those fed diets containing GMA had greater BF ($P=0.02$) than calves fed the control pellet. These results suggest that the levels and combination of *Fusarium* mycotoxins fed in this experiment can be largely tolerated by grain fed veal calves.

Key Words: veal calf, adsorbent, *Fusarium* mycotoxin

T101 Effect of replacing barley grain with triticale-based dry distillers grains with solubles on lamb performance and nutrient digestibility. L. E. McKeown^{1,2}, A. V. Chaves², M. Oba¹, T. A. McAllister², and E. Okine¹, ¹University of Alberta, Edmonton, AB, Canada, ²Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada.

The objective of this research was to determine the effects of replacing increasing proportions of barley grain with triticale-based dried distillers' grains with solubles (TDDGS) on growth, carcass traits and nutrient digestibility in lambs. In the growth study, sixty weaned lambs were blocked by live weight (26.6 ± 3.6 kg), and assigned to one of four diets. The control diet consisted of 72.5% barley grain, 10.0% beet pulp, 9.0% sunflower hulls, 3.0% alfalfa hay and a 5.5% mixture of molasses, calcium carbonate, vitamins and minerals. Treatment diets replaced barley grain with 20, 40 or 60% TDDGS (DM basis). The metabolism study used twelve ram lambs in a 4×4 replicated Latin square design with 16 d of adaptation followed by 5 d of total fecal and urine collection. Data were analyzed using the MIXED model of SAS and assessed for linear (L) and quadratic (Q) responses to amount of TDDGS. As TDDGS increased, DMI tended to increase (L, $P = 0.08$) whereas ADG tended to peak at 20% TDDGS (Q, $P = 0.08$) for growing lambs. At slaughter, both body weight and grade rule showed quadratic trends ($P < 0.08$) peaking at 20% TDDGS. Treatment did not affect other carcass traits ($P > 0.28$). As TDDGS increased in the diet, apparent total tract digestibility of DM, NDF and CP decreased (L, $P < 0.006$), and urine N excretion increased (L, $P < 0.006$). Increasing the amount of TDDGS in the diet resulted in excess protein supply. The energy used to convert excess protein to urea may explain why lambs fed 40 and 60% TDDGS did not have faster growth rates or higher carcass weights. In conclusion, 20% TDDGS inclusion may be optimal for maximizing lamb performance.

Key Words: triticale DDGS, carcass traits, apparent digestibility

T102 Effect of bioethanol co-product type and bioethanol plant on situ degradation kinetics, effective degradability and rumen bypass of nutrient components. W. G. Nuez Ortin* and P. Yu, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

The objective was to investigate differences on rumen degradation characteristics among different types of dry distiller grains with solubles (DDGS) and between different bioethanol plants. Corn DDGS, wheat DDGS, blend DDGS (70% wheat:30% corn), wheat and corn feedstock samples were collected during 2007 in Canada. Degradation rate (Kd), lag time (T₀), rapidly degradable (S), potentially degradable (D), and undegradable fraction (U), and effective degradability (% ED) for DM, OM, CP and NDF were determined by in situ technique and analyzed by the modified First Order Kinetic Model. Statistical analysis was performed using the Mixed procedure of SAS. In addition, the rumen

undegraded fraction (% RU) of each component was determined according to NRC 2001. The results showed some significant differences ($P < 0.05$) on rumen degradation kinetics among the three types of DDGS, between DDGS and original feedstock, and between plants. ED of DM was 79, 55, 58, 52 and 55% for wheat, corn, wheat DDGS, corn DDGS and blend DDGS respectively; for CP was 74, 40, 46, 34, and 36%; for NDF was 35, 42, 36, 37, and 32%, and for OM was 76, 49, 54, 46, and 49%. In comparison with original seed, S fraction of DM and OM as well as D fraction of NDF augmented ($P < 0.05$) in DDGS. Thus, ED and RU fraction in DDGS were numerically lower and higher respectively for DM, CP and OM. Compared with corn DDGS, wheat DDGS and blend DDGS resulted numerically in higher U fraction of OM and NDF, and higher ($P < 0.05$) D fraction of CP. Consequently, wheat DDGS showed the highest ($P < 0.05$) ED of CP and DM, while corn DDGS showed the numerical highest RU fraction of DM, CP and OM (Kd numerically lower). In conclusion, rumen degradation characteristics of DDGS differ from original feedstock and among different types. While ED is numerically lower in DDGS than in original feedstock, it increases in DDGS samples as the proportion of wheat increases.

Key Words: dried distillers grains with solubles, effective degradability, rumen bypass

T103 Protein and carbohydrate fractions of new co-products of bioethanol production: Comparison among blend DDGS, wheat DDGS and corn DDGS, and between different bioethanol plants. W. G. Nuez Ortin* and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.

The objectives of this study were to compare different types of dry distiller grains with solubles (DDGS) and different bioethanol plants on protein (CP) and carbohydrate (CHO) fractions. The CP and CHO fractions were partitioned according to the Cornell Net Carbohydrate and Protein System (CNCPS). Protein fractions included rapidly non-protein degradable (PA), rapidly degradable (PB1), intermediately degradable (PB2), slowly degradable (PB3), and unavailable (PC), while carbohydrate fractions included highly degradable free sugars (CA), rapidly degradable (CB1), intermediately degradable (CB2), and unavailable (CC). Corn DDGS, wheat DDGS, blend DDGS (70% wheat: 30% corn) and wheat and corn feedstock samples from different batches were obtained during 2007 in Canada. Statistical analysis was performed using the Mixed procedure of SAS. The results showed that wheat and corn seeds had different ($P < 0.05$) CP fractions but similar ($P > 0.05$) CHO fractions. Comparing among DDGS, the three types of DDGS had zero PB1. Wheat DDGS was lower ($P < 0.05$) in PB2 (27.7 vs. 54.2% CP) and higher ($P < 0.05$) in PA (16.3 vs. 11.4% CP) and PB3 (51.2 vs. 27.9% CP) in comparison with corn DDGS, but similar ($P > 0.05$) to blend DDGS. The content of NPN in wheat DDGS, corn DDGS and blend DDGS were 100% of SCP. In terms of CHO fractions, only wheat DDGS, corn DDGS, and blend DDGS showed significant differences. Wheat DDGS was higher ($P < 0.05$) in the non-structural CHO fraction (48.3 vs. 18.4% CHO), higher ($P < 0.05$) in CA (35.9 vs. 9.1% CHO), higher ($P < 0.05$) in CC (20.4 vs. 14.2% CHO), similar ($P > 0.05$) in CB (average 10.8% CHO), and lower ($P < 0.05$) in CB2 (31.3 vs. 67.4% CHO) in comparison with corn DDGS. Moreover, there were significant bioethanol plant effects on CP and CHO fractions. The inclusion of wheat in DDGS improves the degradation of protein but reduces the degradation of carbohydrates in rumen.

Key Words: protein and carbohydrate fractions, bioethanol co-products, dried distillers grains with solubles

T104 Influence of feeding increasing levels of dry or modified wet corn distillers grains plus solubles in whole corn grain-based finishing diets on performance and carcass traits in feedlot cattle. H. Salim*¹, K. M. Wood¹, P. L. McEwen², I. B. Mandell¹, S. P. Miller¹, and K. C. Swanson¹, ¹University of Guelph, Guelph, ON, Canada, ²Ridgetown Campus, University of Guelph, Ridgetown, ON, Canada.

One hundred and fourteen cross-bred steer calves and seventeen heifers (BW = 357.2 ± 5.8 kg) were used in a completely randomized block design (2×3 factorial arrangement of treatments plus a control) to determine the effect of inclusion level and form of distillers grains plus solubles (DGS) on feedlot performance and carcass characteristics using whole corn grain-based finishing diets. The DGS were fed at 0 (control), 16.7, 33.3, and 50% of ration DM using dry (DDGS) or modified wet (50% DM; MWDGS) product. All diets contained 10% haylage as a forage source, and were formulated to meet or exceed the estimated requirements for MP. Steers were fed until ultrasound backfat thickness reached 10 mm. Data were analyzed using GLM of SAS; treatment means were compared using contrast statements (control vs. others, DDGS vs. MWDGS, inclusion levels of DGS (linear, quadratic), and interactions between form and linear and quadratic inclusion levels). There were no effects ($P > 0.05$) of dietary treatment on final BW, ADG, days on feed, rumen pH at slaughter, longissimus muscle area and marbling score. A form by quadratic effect of inclusion level interaction ($P = 0.03$) was observed for hot carcass weight (HCW) because HCW increased as DDGS increased from 16.7 to 33.3% of diet DM and then decreased as DDGS increased from 33.3 to 50%, while the opposite response occurred with increasing inclusion of MWDGS. These data indicate that feedlot performance and carcass characteristics were not affected by feeding DDGS or MWDGS up to 50% diet DM in whole corn grain-based finishing diets.

Key Words: distillers grains, beef cattle, growth performance

T105 Effects of supplementing beef cows grazing low quality roughages with wheat dried distillers grains with solubles. A. Van De Kerckhove*¹ and H. A. Lardner^{1,2}, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Western Beef Development Centre, Humboldt, SK, Canada.

Two experiments were conducted to determine the effects of supplementing wheat dry distillers grains with solubles (DDGS) on cow performance and production costs. Dry, pregnant Black Angus cows (n=48, mean BW=598.2±4.2 kg) stratified by body weight and days pregnant were randomly allocated one of three replicated (n=2) treatments. Cows were managed on stockpiled crested wheatgrass pasture (TDN=43.0, CP=6.8 (% DM)) in experiment one (EXP 1) and barley straw-chaff residue (TDN=34.2, CP=8.5 (% DM)) in experiment two (EXP 2). EXP 1 treatments were (1) control (CONT) – no supplement; (2) 100% DDGS (DDGS); or (3) 100% commercial supplement (COMM). EXP 2 treatments were (1) 100% rolled barley grain (CONT); (2) 100% DDGS (DDGS); or (3) 50% DDGS + 50% rolled barley (50:50). Cow body weight (BW), body condition score, and rib and rump fat were measured at start and end of trial for both experiments. Cow BW was also measured every 14 d and results were analyzed using PROC MIXED repeated measures. Cow BW was corrected for conceptus gain based on calving data. Average cow BW in EXP 1 was greater ($P=0.03$) for DDGS supplemented cows than CONT cows over the course of the trial. Costs per cow per day were \$0.75, \$1.10, and \$1.36 for CONT, DDGS, and COMM, respectively. In EXP 2, cow BW change was greater ($P=0.003$) for DDGS and 50:50 versus CONT treatments, with BW changes of -2, 12, and 8 kg for CONT, DDGS, and 50:50 treatments, respectively.

Changes in rump fat were greater ($P=0.04$) for the DDGS treatment versus the CONT treatment. Costs per cow per day were \$2.71, \$2.63, and \$2.66 for CONT, DDGS, and 50:50 treatments, respectively. Wheat DDGS showed no adverse effects on animal performance when used as a supplement for beef cows grazing low quality roughages.

Key Words: wheat dried distillers grains with solubles, low quality roughage, beef cows

T106 Effect of microalgal type and length of incubation on fatty acid composition *in vitro* cultures of rumen fluid. C. Whitney*¹, J. Ronquillo¹, C. Enright¹, J. Green-Johnson², L. MacLaren¹, A. Fredeen¹, and K. Glover¹, ¹Nova Scotia Agricultural College, Truro, NS, Canada, ²University of Ontario Institute of Technology, Oshawa, ON, Canada.

Polyunsaturated fatty acids can be biohydrogenated in the rumen. The aim of this study was to determine the effect of microalgal type and length of incubation on the content of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), saturated fatty acids (SFA), monounsaturated fatty acids (MUFA) and polyunsaturated fatty acids (PUFA) in *in vitro* batch cultures of rumen fluid. Three microalgal types: MA1 (diatom), MA2 (flagellate) and MA3 (heterotroph); and two controls: CS (cottonseed oil) and NL (no added lipid) were incubated at 39°C in a solution containing 10mL rumen fluid, 40mL buffer, 2mL reducing solution and 500mg dried TMR. Except for the NL control the cultures were isolipidic and contained 100mg supplemental lipid. The experiment was conducted as a completely randomized block with three replications incubated for 0, 6, 12, and 24h. The pH was measured at the beginning and end of each incubation when samples were taken for fatty acid analysis by gas chromatography. The pH consistently decreased for all treatments over time. Regression analysis was conducted on the natural logarithm of the data; the linear slope was used to calculate the rate of change (expressed as a percent) and differences were compared using LSD. The percent SFA present in the cultures remained relatively constant for all treatments over the 24 h incubation with the exception of the CS, where the SFA content dropped by 39% ($P<0.05$). The percent MUFA of all treatments increased over the 24 h incubation ranging from 11-44% for the MA (but this was not significantly different from NL) and 192% for CS ($P<0.05$). The percent PUFA decreased for all treatments (32-49%) except for MA3 which decreased by only 7% ($P<0.05$). With respect to percent EPA and DHA, MA3 showed no significant change over the incubation period whereas the percent EPA decreased for both MA1 and MA2 (~40%) but for percent DHA, MA2 had no change while MA1 decreased (~40%). Changes in fatty acid composition of *in vitro* ruminal cultures varied significantly with respect to microalgal type and should be considered in selection of a microalgal supplement for ruminants.

Key Words: microalgae, ruminal degradation, DHA

T107 Effects of alfalfa hay on chewing behavior, rumen pH, and milk production for lactating dairy cows fed dried distillers grains plus solubles in place of barley silage. S. Z. Zhang*, G. B. Penner, and M. Oba, University of Alberta, Edmonton, AB, Canada.

The objective of this study was to determine the effects of alfalfa hay on chewing behavior, rumen fermentation and milk production when barley silage was partially replaced by wheat-based dried distillers grain plus solubles (DDGS). Thirty lactating Holstein cows (220 ± 51 days in milk), of which six were ruminally cannulated, were used in a 3×3 Latin square design with 21-d periods. Cows were fed the control

diet (CON: 50% barley silage, and 50% concentrate mix on DM basis), the diet partially replacing barley silage with DDGS (DG: 30% barley silage, 20% DDGS, and 50% concentrate mix on DM basis) or the diet partially replacing barley silage with DDGS and alfalfa hay (DG+AH: 20% barley silage, 20% DDGS, 10% alfalfa hay, and 50% concentrate mix on DM basis). All diets were formulated to contain 19.7% crude protein by replacing beet pulp in DG and DG+AH with corn gluten meal and urea in CON. Compared to CON, DG and DG+AH increased dry matter intake (23.2, 22.7 vs. 20.1 kg/d, $P < 0.0001$), milk yield (26.7, 27.5 vs. 23.9 kg/d, $P < 0.0001$), milk protein yield (0.97, 0.99 vs. 0.87 kg/d, $P < 0.0001$) and body weight gain (385, 408 vs. 84.7 g/d, $P < 0.0001$) but no differences were observed between DG and DG+AH.

While milk fat concentration differed ($P < 0.0001$) among the three diets, (3.91%, 3.60% and 3.37% for CON, DG, and DG+AH, respectively), milk fat yield was not affected by treatment ($P = 0.52$) with an average of 0.92 kg/d. The DG and DG+AH decreased chewing time (703, 709 vs. 763 min/d, $P < 0.0001$) and mean ruminal pH (5.89, 5.85 vs. 6.11, $P = 0.005$) and increased the duration that ruminal pH was below 5.8 (667, 705 vs. 438 min/d, $P = 0.02$) with no differences between DG and DG+AH. These results indicate that partially replacing barley silage with DDGS can improve productivity of lactating dairy cows, but it may also decrease chewing time, rumen pH, and milk fat concentration. The dietary inclusion of alfalfa hay may not help alleviate such decreases.

Key Words: barley silage, DDGS, alfalfa hay

Growth and Development

T108 Genetic group and slaughter weight influence on carcass quantitative traits of feedlot cattle. R. Mello^{*1}, F. D. de Resende², A. C. de Queiroz³, M. H. de Faria², P. V. R. Paulino³, and G. R. Siqueira², ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, ³Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

The purpose of this study was to investigate the genetic group and slaughter weight influence on carcass quantitative characteristics of the cattle. Thirty six young (20 mo) bulls, 18 crossbred F1 Red Angus × Nellore (1/2 RA 1/2 N) and 18 F1 Blonde D'Aquitaine × Nellore (1/2 BA 1/2 N) were used. The young bulls were finished in a feedlot and slaughtered at 480, 520 and 560 kg of shrunk body weight (SBW). A completely randomized experimental design of a 2 × 3 (2 genetic groups × 3 slaughter weights) factorial arrangement with six replicates was used. The animals were slaughtered in a commercial slaughter-house. Data were analyzed with SAS[®] software using initial SBW as a covariate. The table below shows the least-square means of cold carcass wt (CCW), carcass compactness index (CCI), daily carcass gain (DCG), kidney, pelvic and inguinal fat (KPI), backfat thickness (BFT), ribeye area (REA) and dressing percentage (DP). There was detected effect ($P < 0.05$) of genetic group (GG) and slaughter weight (SW) on carcass quantitative characteristics. However, the interaction between GG and SW were not significant ($P > 0.05$) for all measured traits. The 1/2 BA 1/2 N young bulls had a higher DCG, absolute (kg) and relative (kg/100kgCCW) KPI than 1/2 RA 1/2 N young bulls, or vice-versa. As the slaughter weight risen the CCW, CCI, absolute (kg) and relative (kg/100kgCCW) KPI, absolute (mm) and relative (mm/100kgCCW) BFT, absolute REA (cm²) and DP increased; while the DCG decreased with increasing in SW. The relative REA was not affected by the different treatments (28.7 cm²/100kgCCW). Thereby, finishing of crossbred F1 Blond D'Aquitaine × Nellore young bulls on feedlot until the animals achieve heavier slaughter weights allow the production of the better carcasses.

Table 1. Least square means

	Genetic Group (GG)		Slaughter Weight (SW)		
	½ RA	½ N	480	520	560
CCW, kg	275.9	281.7	250.4 ^c	273.8 ^b	312.2 ^a
CCI, kg/cm	2.1	2.1	1.9 ^c	2.1 ^b	2.3 ^a
DCG, kg/d	1.2 ^B	1.4 ^A	1.5 ^a	1.1 ^b	1.2 ^b
KPI, kg	5.8 ^B	7.6 ^A	4.4 ^c	6.9 ^b	8.9 ^a
KPI, kg/100kgCCW	2.1 ^B	2.7 ^A	1.8 ^b	2.5 ^a	2.9 ^a
BFT, mm	2.9	3.2	2.1 ^c	2.7 ^b	4.4 ^a
BFT, mm/100kgCCW	1.0	1.1	0.8 ^b	1.0 ^b	1.4 ^a
REA, cm ²	80.2	78.0	72.9 ^b	79.2 ^{ab}	85.2 ^a
DP, %	53.0	53.7	52.3 ^b	52.7 ^b	55.1 ^a

Within a row, means followed by different capital and small letters differ ($P < 0.05$), respectively, among GG and SW by Tukey test.

Key Words: beef cattle, carcass dressing, subcutaneous fat thickness

T109 Physical carcass composition of crossbred beef cattle slaughtered at different end points. R. Mello^{*1}, F. D. de Resende², A. C. de Queiroz³, M. H. de Faria², G. F. Alleoni², and P. V. R. Paulino³, ¹Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, ³Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

The objective in this trial was to assess the physical carcass composition of finished crossbred feedlot beef bulls and slaughtered at different body masses. Thirty six young (20 mo) bulls, 18 crossbred F1 Red Angus × Nellore (1/2 RA 1/2 N) and 18 F1 Blonde D'Aquitaine × Nellore (1/2 BA 1/2 N) were used. The young bulls were finished on feedlot and slaughtered at 480, 520 and 560 kg of shrunk body weight (SBW). A completely randomized experimental design in a 2 × 3 (2 genetic groups × 3 slaughter weights) factorial arrangement with six replicates was used. Physical composition was predicted for each carcass using separation (bone, lean, fat) of 9-10-11th rib sections from one side. Data were analyzed with SAS[®] software using initial SBW as a covariate. The table below shows the least-square means of physical carcass composition. There was significant effect ($P < 0.05$) of genetic group (GG) and slaughter weight (SW) on physical composition of the carcasses. The interaction between GG and SW were not significant ($P > 0.05$) for all measured traits. The 1/2 BA 1/2 N young bulls had a higher ($P < 0.05$) lean proportion, lean to bone ratio, and lower ($P < 0.05$) bone proportion than 1/2 RA 1/2 N young bulls. The lighter young bulls were associated ($P < 0.05$) to a higher proportion of bone, leaner carcass, and lower lean