W277 Effect of age at weaning and creep feeding on carcass composition and IGF-I concentrations in 5-month-old females calves. C. Viñoles*[1], A. L. Astessiano[2], D. Guggeri[1], A. Meikle[3], and M. Carriquiry[2], *[1]Instituto Nacional de Investigación Agropecuaria, Tacuarembó, Uruguay, [2]Facultad de Agronomía, Montevideo, Uruguay, [3]Facultad de Veterinaria, Montevideo, Uruguay.*

We tested the hypothesis that carcass composition and IGF-I concentrations are affected by age at weaning and plane of nutrition before weaning by assigning Hereford female calves (n = 21) to 3 different treatments between 2 and 5 mo of age: (1) early weaning at 2 mo of age (EW, n = 6); (2) late weaning at 5 mo of age (LW, n = 7) and (3) LW plus creep feeding (LW+CF, n = 8). Calves were weighed every 2 weeks from 2 to 5 mo of age, when a blood sample was collected and the urea dilution technique (Rule et al., 1986; J. Anim. Sci. 63:1935–1948) applied to evaluate the in vivo carcass composition (CL = carcass lipids; CP = carcass protein; CW = carcass water; EBW = empty body water; EBF = empty body fat). Data were analyzed using a linear mixed model and means were considered to differ when $P < 0.05$. LW+CF calves gained faster and were heavier at 5 months of age compared to LW calves, which were heavier that EW calves (Table 1). The carcass composition was not affected by age at weaning or creep feeding (Table 1). LW+CF calves had higher IGF-I concentrations that LW calves, and the latter higher concentrations than EW calves (Table 1). We conclude that age at weaning and creep feeding affect IGF-I concentrations, but not carcass composition.

Table 1. Average daily gain between 2 and 5 mo of age and live weight, IGF-I concentrations and carcass composition at 5 months of age in EW, LW, and LW + CF calves (LSM ± SEM)

	EW	LW	LW + CF
Average daily gain (kg/d)	0.333 ± 0.03[a]	0.764 ± 0.03[b]	0.926 ± 0.03[c]
Live weight (kg)	122 ± 7.5[a]	177 ± 7.2[b]	194 ± 4.2[c]
IGF-I (ng/ml)	47.8 ± 10.4[a]	80.6 ± 9.9[b]	158 ± 10.8[c]
CL (%)	20.5 ± 0.8	19.1 ± 0.9	19.4 ± 0.8
CP (%)	17.2 ± 0.2	17.0 ± 0.2	17.2 ± 0.2
CW (%)	58.6 ± 0.5	57.3 ± 0.5	57.6 ± 0.5
EBW (%)	59.7 ± 0.6	58.5 ± 0.6	59.1 ± 0.5
EBF (%)	17.9 ± 0.9	19.3 ± 0.8	18.2 ± 0.7

[a] versus [b] P.

Key Words: weaning, creep feeding, growth

W278 Effect of palmitoleic acid on body composition and adipocyte cell size in obese sheep. S. K. Duckett*, M. C. Miller, G. Volpi Lagreca, M. Alende, T. A. Burns, A. Wright, J. G. Andrae, and N. M. Long, *Clemson University, Clemson, SC.*

Southdown wethers (n = 15; 95 kg BW) were used to assess the effects of palmitoleic (C16:1) acid infusion on body composition and adipocyte cell size in obese sheep. An n-7 (omega-7) enriched oil (45% palmitoleic acid) was infused, twice daily for 28 d via indwelling jugular catheter at 3 levels of palmitoleic acid: 0 (CON), 5 (MED) or 10 (HI) mg·kg $BW^{-1}\cdot d^{-1}$. The oil was solubilized in 40% ethanol and immediately injected into the catheter at 0800 and 1600 h for each lamb. All lambs received the same amount of 40% ethanol per dose regardless of oil level. Blood samples were collected at 5 min post dosing on a weekly basis to assess uptake of palmitoleic acid into circulation. After 28 d, lambs were slaughtered. At slaughter, weights of omental and mesenteric adipose tissue were collected as well as hot carcass weight. At 24 h postmortem, carcass data was collected and samples obtained from subcutaneous and intramuscular adipose tissues for cell size determination. Serum palmitoleic acid contents (mg/mL) at 5 min post injection were 60% higher ($P < 0.05$) in HI compared with CON. Serum palmitoleic acid content also tended ($P = 0.09$) to be higher (+ 31%) in MED compared with CON. Serum *cis*-11 vaccenic acid was also elevated ($P < 0.05$) in HI compared with CON, which increased ($P < 0.05$) over time for HI but not in CON. The ratio of C16:1 to C16:0 was elevated ($P < 0.05$) in both the MED and HI treatments. Average daily gain during the 28 d treatment period was lower ($P < 0.05$) by 76% for HI compared with CON. Carcass parameters and visceral adipose depots were not different ($P > 0.05$) between treatments. Mean subcutaneous adipocyte size did not differ ($P > 0.05$) between treatments and averaged 92.2 μm. Mean intramuscular adipocyte size was reduced ($P < 0.05$; 66.1 vs. 74.2 μm) in HI compared with CON. Administration of an n-7 enriched oil to obese sheep increased circulating C16:1, reduced average daily gains and intramuscular adipocyte size.

Key Words: sheep, palmitoleic acid, adipocyte

W279 Palmitoleic (C16:1) acid alters glucose and insulin metabolism in obese lambs. T. A. Burns*, N. M. Long, M. Alende, G. Volpi Lagreca, A. K. G. Kadegowda, M. C. Miller, and S. K. Duckett, *Clemson University, Clemson, SC.*

Palmitoleic (C16:1) acid has been proposed to function as a lipokine and alter insulin sensitivity. The objective of this study was to assess C16:1 effects on glucose and insulin tolerance in obese sheep. Southdown wethers (86.7 ± 1.5 kg BW; n = 4) with indwelling jugular catheters were used in a crossover design. Treatments were intravenous infusion of 2 doses of C16:1, 0 (CON) or 5 (LIPO) mg/kg BW in 40% (vol/vol) ethanol, immediately followed by a glucose (0.25 g/kg) tolerance test. The design was repeated with CON and LIPO treatments immediately followed by an insulin (0.02 μU/kg) challenge. Catheters were inserted 1 d before first infusion. Lambs were fasted 18 h before treatment with 44 h rest between tests. Blood samples were collected at −15 min, immediately before infusion, and serially for 4 h. Plasma was analyzed for fatty acids using GLC, glucose using a colorimetric assay, and insulin using a commercial RIA. Repeated measures data were analyzed using Proc Mixed procedure. Plasma C16:1 was increased ($P < 0.01$) in LIPO compared with CON lambs. At 2 min post-infusion, percent C16:1, mg of C16:1/mL of serum, and ratio of C16:1/C16:0 was maximal with 9.5-, 10.9-, and 10.6-fold increase over baseline, respectively. By 30 min post-infusion, plasma C16:1 levels had returned to baseline. In addition, C17:0 and C18:0 (mg/mL) increased ($P < 0.05$) in LIPO compared with CON lambs. During the glucose tolerance test, C16:1-administration increased ($P < 0.05$) peak and overall glucose concentrations in LIPO lambs compared with CON. Glucose peaked at 2 min post-infusion and returned to baseline in both treatment groups by 180 min. During the insulin test, LIPO lambs had increased ($P < 0.05$) peak and overall plasma insulin compared with CON; in addition, glucose was greater ($P < 0.05$) in LIPO compared with CON lambs. Insulin peaked at 2 min post-infusion and returned to baseline in both treatment groups by 20 min. In conclusion, fatty acid profiles indicated rapid removal of C16:1 from plasma after pulse dose infusion. In addition, C16:1 infusion appears to affect insulin signaling to alter plasma glucose in obese lambs.

Key Words: palmitoleic acid, glucose, insulin

W280 Influence of maternal linseed supplementation on brain and muscles fatty acid composition in newborn lambs. A. Nudda, B. Gianni, R. Boe, M. Lovicu, NPP Macciotta*, and G. Pulina, *Dipartimento di Agraria, Sezione di Scienze Zootecniche, Universita di Sassari, Sassari, Italy.*

The increase of polyunsaturated fatty acids (PUFA) n3 content in meat has been a key objective of applied animal science. The metabolism of 18:3 n-3, by desaturation and elongation pathway, leads to the production of long-chain PUFA, including 20:5 n-3 (eicosapentaenoic acid; EPA), 22:5 n-3 (docosapentaenoic acid; DPA) and 22:6 n-3 (docosahexaenoic acid; DHA). Research on laboratory animals evidenced that the capacity to convert 18:3 n-3 into long-chain metabolites increases during pregnancy. Among vegetable sources, linseed has a high content of α-linolenic acid (C18:3 n-3; ALA) and can be used in animal diet to provide dietary n-3 PUFA. This study investigated the effect of linseed ALA dietary supplementation to dairy ewes during late-pregnancy on fatty acid (FA) profile of brain and muscles in newborn lambs. From the last 8 weeks of gestation, 8 pregnant Sarda ewes were divided into 2 groups fed 2 different diets: a control (CTL) diet and an ALA-enriched diet by adding linseed (LIN). Four lambs from each group were slaughtered at birth. Brain samples, and the Semitendinosus and Longissimus dorsi muscles of lamb carcasses were collected to determine their FA composition by GC. The LIN supplementation to the ewes increased ($P < 0.05$) the concentration of ALA (0.85 vs. 0.20 g/100 g of total FA; SE 0.164), C18:4 n-3 (0.035 vs. 0.010; SE 0.006), EPA (0.65 vs. 0.31; SE 0.036) and DPA (2.14 vs. 1.70; SE 0.164), but did not influence that of DHA (1.00 vs. 0.89; SE 0.099) concentration in the muscles of newborns. The maternal LIN supplementation increased ($P < 0.05$) the concentration of EPA (0.51 vs. 0.45; SE 0.020), DPA (1.38 vs. 1.00; SE 0.103), but did not influence that of DHA (10.97 vs. 10.48; SE 0.397; $P = 0.35$) in brain tissue. The ALA was not detected in lambs from CTL ewes and its concentration was low in LIN lambs (0.04 g/100 g FA; SE 0.006). In this study the maternal ALA supplementation during gestation increased the LC-PUFAn-3 but did not enhanced the concentration of DHA in muscles and brain tissues of newborn lambs. Acknowledgments: research supported by Cargill-Animal Nutrition Division, Milan, Italy.

Key Words: linseed, long-chain PUFA, lamb tissue

W281 Uptake of palmitoleic (^{13}C16:1) acid in blood and adipose tissue of obese lambs. T. A. Burns*, A. K. G. Kadegowda, M. C. Miller, A. M. Wright, and S. K. Duckett, *Clemson University, Clemson, SC.*

Palmitoleic (C16:1) acid is proposed to function as a lipokine and regulate metabolism. The primary objective of this study was to assess the uptake of U-^{13}C16:1 in circulation and adipose tissue of obese lambs. In addition, a secondary objective of this study was to evaluate blood glucose and serum insulin in response to C16:1 infusion. Southdown wethers (67.4 ± 1.4 kg; n = 3) were used in a 3 × 3 Latin square with a pulse dose infusion of U-^{13}C16:1 infused at 0 (CON), 2 (LOW), and 5 (HI) mg/kg BW in 40% ethanol (vol/vol). For each period, lambs were fitted with an indwelling jugular catheter 1 d prior and grain-fasted 18 h before treatment with 10 d rest between periods. Blood samples were collected before (−30, −15, and 0 min) and after U-^{13}C16:1 infusion at 15 min intervals for 3 h. Immediately following the last blood sample, an adipose tissue biopsy was performed at alternating sites within the tailhead region of each lamb. Blood glucose levels were monitored with a hand-held glucometer. Serum insulin was measured with a commercial ELISA. Fatty acids were quantified using GLC and enrichments were analyzed with GLC/mass spectrometry. Repeated measures data were analyzed using Proc Mixed procedure. At 15 min post-infusion, serum C16:1 (mg/mL) was elevated in LOW and HI lambs compared with CON by 1.8- and 3.1-fold increase, respectively. By 30 min, serum C16:1 did not differ ($P > 0.10$) between treatment groups. Enrichment of U-^{13}C16:1, however, peaked at 15 min and remained elevated ($P < 0.01$) in HI lambs compared with CON through 3 h. Also, LOW lambs had peak U-^{13}C16:1 at 15 min, but had returned to baseline by 60 min post-infusion. Blood glucose was also elevated ($P < 0.05$) in HI lambs compared with LOW and CON lambs from 15 to 60 min post-infusion. Serum insulin and adipose tissue fatty acid composition did not differ ($P > 0.10$) between treatment groups. In conclusion, U-^{13}C16:1 infusion induced a short-term increase in overall serum C16:1 concentrations, although enrichment of ^{13}C16:1 was maintained in serum for a slightly longer period. In addition, U-^{13}C16:1 increased blood glucose in a dose-dependent manner without affecting serum insulin.

Key Words: palmitoleic acid, isotope, lamb

W282 Nutritionally mediated prenatal growth restriction is associated with reduced somatotroph cell density in the late gestation ovine fetus. N. Craig[1], N. P. Evans*[1], M. Bellingham[1], C. L. Adam[2], J. M. Wallace[2], and J. E. Robinson[1], *[1]Institute of Biodiversity, Animal Health and Comparative Medicine, University of Glasgow, Glasgow, UK, [2]Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, UK.*

Maternal malnutrition during pregnancy adversely affects fetal nutrient supply and prenatal growth velocity leading to low body weight and altered organ development at birth. Such prenatal growth restriction (PGR) affects postnatal growth trajectories, body composition and reproductive performance. As the pituitary gland is central to both somatotropic and reproductive function we herein investigated whether PGR altered the population of GH and LHb cells in the fetal sheep pituitary. Singleton pregnancies to a single sire were established by embryo transfer and adolescent dams offered control (C, n = 24) or high dietary intakes (n = 24) during the first 2 thirds of pregnancy to induce normal or compromised placental size, respectively. The latter group was further categorized as PGR or non-PGR after determination of fetal weight at necropsy on d 130 of gestation on the basis of a minus 2 SD cut-off relative to the control group mean. Pituitaries were frozen at necropsy and the density of GH or LHb immunoreactive cells subsequently determined in 6 microscope fields/fetal pituitary. Both total placentome weight (511 ± 24, 389 ± 28 and 241 ± 12g) and fetal weight (4450 ± 84, 4273 ± 166 and 3037 ± 146g) were greater ($P < 0.001$) in C and non-PGR compared to the PGR group. While late gestation fetal growth status did not impact LHb cell density it did influence GH cell density. GH cell density was 5.64 ± 0.40, 5.53 ± 0.57 and 4.12 ± 0.40 cells/1000 μm^2 in C, non-PGR and PGR groups, respectively, with a significant post hoc comparison ($P = 0.012$) between C vs. PGR. This difference appears to be sex specific, being evident in female but not male fetuses [C vs. PGR GH cells/100 μm^2: Females 6.26 ± 0.39 (n = 17) vs. 4.64 ± 0.49 (n = 7), $P = 0.023$; Males 4.13 ± 0.74 (n = 7) vs. 3.52 ± 0.61 (n = 6), $P = 0.541$]. The attenuated GH cell density in severely nutritionally growth restricted lambs may affect somatotrophic axis function in postnatal life.

Key Words: somatotropic axis, pituitary, placentome

W285 Development of gravid uterus components in function of days of gestation and feeding level in pregnant Nellore cows. M. P. Gionbelli[1], M. S. Duarte[1], S. C. Valadares Filho[1,2], H. C. Freetly[3], P. V. R. Paulino[1], F. C. Rodrigues[1], B. C. Silva[1], T. R. Santos[1], D. F. T. Sathler[1], M. G. Machado[1], and M. I. Marcondes*[1,2], *[1]Universidade*

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Thirty-two multiparous Nellore cows with average initial body weight of 451 ± 10 kg, age of 5.6 ± 0.5 years were used in an experiment aiming evaluate the influence of maternal nutrition and days of gestation on development of gravid uterus components. Sixteen cows were fed 1.2 times maintenance and 16 cows were fed ad libitum a diet with 85% of corn silage and 15% of concentrate. Four cows of each group were harvested at 136, 189, 239 and 269 d of pregnancy and had their gravid uterus dissected into fetus, uterus, placenta and fetal fluids. The effect of feeding level and time of gestation was evaluated by a 2 × 4 factorial scheme. After, non-linear functions were fitted to the data to describe the development of gravid uterus components in function of time of gestation. For each function, an F-ratio was calculated to test whether estimation of parameters specific to each feeding level improved fit of the data relative to estimation of parameters from a pooled data set, ignoring the feeding level. Weight of fetus was greater ($P < 0.05$) in ad libitum cows compared to the 1.2 times maintenance cows at 269 days of gestation (29.7 vs. 24.4 kg) but not different in early gestation. No differences *(*$P > 0.05$) were observed on weight of uterus and fetal fluids in function of feeding level. The placenta weights from ad libitum fed cows were greater ($P < 0.05$) than placentas of 1.2 times maintenance cows (average of 1.12 vs. 0.90 kg). Logistic functions [Aexp(B – Ct) t] were those that better described the growth of uterus components in function of time of pregnancy (t, days). For fetus and placenta the F test showed better fit of non-linear functions when functions were estimated separated for the two levels of feeding, but for uterus and fetal fluids pooled equations showed better fit. The functions to describe the growth of fetus and placenta in function of time of pregnancy were: for 1.2 times maintenance cows, Fetus weight (kg) = $0.0000225\exp^{(0.10225 - 0.000188t)t}$ and Placenta weight (kg) = $0.01729\exp^{(0.02947 - 0.0000499t)t}$; for ad libitum cows, Fetus weight (kg) = $0.0003202\exp^{(0.07573 - 0.000123t)t}$ and Placenta weight (kg) = $0.05511\exp^{(0.02123 - 0.0000323t)t}$.

Key Words: fetal programming, gestation, maternal nutrition

W286 Residual feed intake and hormonal parameters in Nellore cattle. R. H. Branco*[1], C. F. Nascimento[1], E. Magnani[1], L. F. Oliveira[2], S. F. M. Bonilha[1], and J. N. S. G. Cyrillo[1], *[1]Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertaozinho, Sao Paulo, Brazil, [2]Departamento de Zootecnia, Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil.*

Residual feed intake (RFI) is used to identify more efficient animals in feed utilization. Its physiological bases are still unknown, but the insulin hormone, linked to the mechanisms of hunger and satiety, can elucidate such efficiency. The increase of insulin hormone triggers the release indirect of IGF-I. This hormone acts on cellular proliferation saving glucose and using fatty acids from adipose cells as energy. This study aimed to assess the relationships between RFI groups and concentrations of insulin and IGF-I in Nellore cattle. The experiment was conducted at Instituto de Zootecnia, São Paulo, Brazil. We utilized 118 Nellore steers, tested for feed efficiency (112 d in individual pens) and classified as low RFI (<mean − 0.5SD, n = 40), medium RFI (SD ± 0.5, n = 42) and high RFI (>mean + 0.5SD, n = 36). Blood samples were collected and analyzed for insulin and IGF-I determination. Differences were found for concentration of insulin and IGF-1 among RFI groups, which were greater in low RFI animals. This demonstrates that the increase in insulin concentration can cause effects on the growth axis stimulating the production of IGF-I, which acts on the proliferation of somatic cells with glucose economy and determines the animals´ satiety feeling. Therefore there are differences in growth mechanisms between RFI groups, in which low RFI animals have higher concentrations of insulin and IGF-I influencing the growth and feed efficiency.

Table 1. Insulin and IGF-I concentrations in blood of Nellore cattle classified for RFI

	Low RFI	Medium RFI	High RFI	P-value
Number	40	42	36	—
RFI, kg/d	$-0.33^{a} \pm 0.02$	$0.00^{b} \pm 0.02$	$0.34^{c} \pm 0.02$	<0.01
DMI, kg/d	$5.74^{a} \pm 0.11$	$6.07^{b} \pm 0.12$	$6.41^{c} \pm 0.11$	<0.01
IGF-I, ng/mL	$41.49^{a} \pm 1.69$	$43.82^{a} \pm 1.62$	$39.05^{b} \pm 1.76$	0.057
Log[1] Insulin	$1.63^{a} \pm 0.04$	$1.55^{a} \pm 0.04$	$1.46^{b} \pm 0.04$	0.017

[a–c]Means followed by the same letter, in the same row, do not differ significantly by testing t, 10% of probability.
[1]Log = transformation basis for variables that did not show normal distribution.

Key Words: growth, IGF-I, satiety

W287 Residual feed intake studies in cattle reveal a potential role for gonadotropin releasing hormone (GnRH) in regulating feed efficiency. S. D. Perkins*, C. D. Foradori, C. L. Bratcher, L. A. Kriese-Anderson, and T. D. Brandebourg, *Auburn University, Auburn, AL.*

Residual feed intake (RFI) is a heritable feed efficiency measure. Mechanisms underlying variation in feed efficiency are currently poorly understood. To address this issue, 48 Angus-sired steers were trained to the Calan Gate (Northwood, NH) system at the Beef Evaluation Unit at Auburn University to facilitate measurement of individual feed intake. Daily feed intake and RFI were assessed during a 70 d feeding trial. The test diet was 50% sorghum-sudan silage, 50% grain (2.9 Mcal ME/kg DM). Body weights and hip heights were recorded at 14 d intervals. Ultrasound measurements of rib eye muscle area (REA) and subcutaneous backfat (BF) were recorded initially and before slaughter. RFI was calculated for each animal as the difference between actual feed intake and the expected intake to create 2 divergent cohorts consisting of High (H) and Low (L) RFI individuals. Upon harvest, carcass characteristics were measured and hypothalamic tissue (HT) samples were collected to facilitate gene expression studies into the mechanisms underlying variation in RFI. As expected feed intake was higher for the H individuals versus the L steers ($P < 0.001$) while on test gain was not different between the 2 groups ($P < 0.87$). There were no differences in intramuscular fat ($P < 0.17$), BF ($P < 0.44$), or REA ($P < 0.33$) between L and H cohorts indicating there is no relationship between RFI and body composition. Targeted gene expression studies indicate that neuropeptide-Y (NPY), relaxin-3 (RLN3), melanocortin 4 receptor (MC4R), and GnRH mRNA expression was 64%, 59%, 58%, 86% lower respectively in the arcuate nucleus of low RFI steers while pro-opiomelanocortin (POMC) expression was 350% higher in these more efficient animals ($P < 0.01$). Pituitary expression of gonadotropin β subunits (FSHβ, LHβ) was correlated to hypothalamic GnRH levels (FSHβ: r = 0.580, $P < 0.01$; LHβ: r = 0.783, $P < 0.01$) suggesting changes in gene expression in the arcuate nucleus indeed had functional consequences. Furthermore, these expression profiles suggest GnRH may play a role in regulating feed efficiency.

Key Words: steer, RFI, GnRH

W288 Fatty acids profile of muscle and fat from Nelore bulls classified for residual feed intake. S. F. M. Bonilha*[1], K. Zorzi[2], R. H. Branco[1], M. M. C. Silva[3], J. N. S. G. Cyrillo[1], and M. E. Z.

Mercadante[1], *[1]Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil, [2]Departamento de Zootecnia, Universidade Estadual do Norte Fluminense, Campos do Goytacazes, Rio de Janeiro, Brazil, [3]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.*

Residual feed intake (RFI) is defined as the difference between actual feed intake and expected requirements for maintenance and gain. Studies have shown association between RFI and BW gain composition, which could affect fatty acids (FA) profile of body lean and fat tissues. This study aimed to identify associations between RFI and FA profile of muscle and fat in Nelore bulls. Fifty-nine and 25 bulls were used, respectively, for longissimus muscle (LM) and kidney, pelvic and heart fat (KPH) FA profile determination. Bulls were divided into high (>mean+0.5 SD) and low (<mean-0.5 SD) RFI groups and slaughtered with 4 mm of ultrasound fat thickness between 12th and 13th ribs, with average BW and age of 421 kg and 552 d. Samples of LM and KPH were vacuum packed for FA profile determination. Data were analyzed using mixed model and LS means tested by *t*-test. The FA found in highest concentration in LM were the saturated palmitic (20.1%) and stearic (16.0%); the monounsaturated oleic (29.4%); and the polyunsaturated linoleic (14.1%), constituting 79.6% of the total FA identified. There were no significant differences between RFI groups for LM SFA, MUFA and PUFA concentrations. For KPH, the FA found in highest concentration were the saturated stearic (27.3%); and the monounsaturated oleic (38.9%) and myristoleic (23.0%), totaling 89.2% of FA identified. Significant differences between RFI groups were detected for oleic, SFA, and MUFA, having low RFI animals higher concentrations of oleic and MUFA, and lower concentration of SFA. Nelore bulls more efficient in converting feed into meat have similar lean tissue FA profile and different FA profile on fat tissue.

Table 1. Fatty acids profile of LM and KPH from Nelore bulls classified for RFI

	LM Low RFI	LM High RFI	*P*-value	KPH Low RFI	KPH High RFI	*P*-value
Number	32	27	—	13	12	—
Oleic, %	27.1 ± 1.17	25.6 ± 1.23	0.31	41.2 ± 1.16	36.4 ± 1.21	0.01
Linoleic, %	16.1 ± 1.04	17.7 ± 1.10	0.21	1.99 ± 0.13	1.98 ± 0.13	0.95
Linolenic, %	0.27 ± 0.13	0.48 ± 0.13	0.18	0.19 ± 0.02	0.21 ± 0.02	0.41
CLA, %	0.51 ± 0.04	0.55 ± 0.04	0.31	0.33 ± 0.04	0.26 ± 0.03	0.18
SFA, %	38.8 ± 1.08	38.0 ± 1.14	0.55	51.4 ± 1.34	56.8 ± 1.39	0.01
MUFA, %	36.1 ± 0.94	34.2 ± 0.99	0.10	44.4 ± 1.30	38.9 ± 1.35	0.01
PUFA, %	23.8 ± 1.50	26.5 ± 1.58	0.15	2.40 ± 0.15	2.41 ± 0.15	0.97

Key Words: beef, efficiency, lipid