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**210 Effect of genotype on carcass composition and meat quality characteristics.** B. F. Wolter<sup>\*1</sup>, M. Ellis<sup>1</sup>, F. K. McKeith<sup>1</sup>, and M. Culbertson<sup>2</sup>, <sup>1</sup>University of Illinois, <sup>2</sup>Cotswold USA.

Thirty pigs from each of five great grandparent lines of pigs (N=150) were evaluated for carcass composition and meat quality characteristics. Lines evaluated included: Landrace (L), Maternal Large White (MLW), Terminal Large White (TLW), Duroc (D), and Pietrain (P). Slaughtering took place on 5 occasions with six animals from each line, selected on the basis of sire, on-farm weight, and birth date, being slaughtered on each occasion. Measurements were obtained on the left side of the carcass and quality assessment was carried out on longissimus chops obtained posterior to the tenth rib. Results are presented as line deviations from the population mean. Dressing percentage was highest ( $P < .001$ ) for P (deviation from mean = +1.08%) and lowest for MLW (-.57%) and L (-.63%). Tenth rib backfat was greatest ( $P < .01$ ) in lines D and P (+2.0 and +2.1 mm, respectively), least for lines MLW and TLW (-1.5 and -2.0 mm, respectively), and intermediate for L (-.5 mm). Interestingly, line P had the highest tenth rib backfat, but also the greatest ( $P < .001$ ) loin eye area (+4.1 cm<sup>2</sup>). Deviations from the mean for loin eye area were +.4, -1.8, +.4, -3.2 cm<sup>2</sup> for lines D, MLW, TLW, and L, respectively. Ultimate pH was lowest ( $P < .001$ ) for line P (-.11), highest for D and MLW (+.09 and +.06, respectively), and intermediate for lines TLW and L (.00 and -.03, respectively). Subjective marbling was significantly higher ( $P < .001$ ) and twenty-four hour drip loss was lower ( $P < .001$ ) in line D (+1.1 and -1.7%, respectively) than for the other lines which were similar for these traits. In addition, Hunter L\* values indicated that muscle color was less pale ( $P < .001$ ) for line D (-2.60) than for lines P, MLW, TLW, and L (+1.05, -.38, +1.11, and +.84, respectively) which were similar. There were significant differences ( $P < .001$ ) between the lines for Warner-Bratzler shear force and taste panel tenderness (evaluated on a 15 point scale) with line L having higher shear force and lower tenderness values (+.66 kg and -.52, respectively), both indicating a lower degree of tenderness than lines D (-.35 kg and +.58, respectively) and P (-.49 kg and +.40, respectively). Generally, line P had greater carcass muscling, and line D demonstrated superior meat quality characteristics compared to the other lines evaluated in this study.

**Key Words:** Meat Quality, Carcass Traits, Pigs

**211 Sensory evaluation of loin chops from lambs fed concentrate or grazed on ryegrass to traditional or heavy weights.** R. J. Borton<sup>\*</sup>, K. E. McClure, and D. M. Wulf, *The Ohio State University / OARDC.*

Palatability of loin chops from lambs either fed concentrate in drylot (C) or grazed on ryegrass (F) with slaughter weights at 65 or 100% of physiological mature BW of their dams was evaluated. Lambs (64) were randomly allotted by sex with initial BW for ewes (E) and wethers (W) (23 and 24 kg) in a 2x2x2 factorial design. Slaughter weights at 65% of E and W at normal (N) BW were 49.5 and 53.2 kg slaughter weights at 100% for E and W at heavy (H) BW were 75.9 and 81.8 kg. Days on test for CN, CH, FN, and FH were: 82, 161, 171, and 448. Boneless loin chops obtained from 53 (ECN=8, ECH=8, EFN=8, EFH=3, WCN=7, WCH=8, WFN=5, WFH=6) carcasses were vacuum packed, frozen and stored at -10°C. Chops were thawed, wrapped in foil, baked at 177°C for 30 minutes and evaluated by a 10 member panel. Panelists rated the chops for off-odor (OO), lamb flavor (LF), off-flavor (OF), tenderness (T), juiciness (J) and overall acceptability (OA) using a scale of 0-9 with 0 representing the least and 9 the most of each attribute. Data were analyzed using a General Linear Models Procedure. OO was more ( $P \leq .001$ ) for F than C ( $1.48 \pm 0.12$  vs  $0.94 \pm 0.10$ ). LF was higher ( $P \leq .001$ ) for the C than for F ( $5.53 \pm 0.12$  vs  $4.58 \pm 0.14$ ). OF was stronger ( $P \leq .001$ ) for F than C ( $2.01 \pm 0.16$  vs  $1.06 \pm 0.14$ ). OF was stronger ( $P \leq .05$ ) for H than N ( $1.78 \pm 0.16$  vs  $1.30 \pm 0.15$ ). ECH were more T ( $P \leq .03$ ) than ECN or WFN ( $6.34 \pm 0.32$  vs  $5.09 \pm 0.30$  or  $5.00 \pm 0.38$ ). WC were more J ( $P \leq .01$ ) than EC, EF, or WF ( $5.39 \pm 0.12$  vs  $4.73 \pm 0.12$ ,  $4.77 \pm 0.15$  or  $4.63 \pm 0.14$ ). CH were more J ( $P \leq .01$ ) than CN, FN, or FH ( $5.54 \pm 0.12$  vs  $4.59 \pm 0.12$ ,  $4.78 \pm 0.14$  and  $4.62 \pm 0.15$ ). OA was higher ( $P \leq .001$ ) for C than for F lambs ( $5.51 \pm 0.12$  vs  $4.72 \pm 0.14$ ). Chops from C lambs had less OO and OF and more LF. This could be related to the fact that C lambs were younger and appeared fatter than the F lambs. The magnitude of differences found by the panel, while significant, were small enough to indicate H or F lamb chops were acceptable.

**Key Words:** Lamb, Flavor, Sensory Evaluation

**212 Effects of Dorper genetics on tenderness, fatty acid and cholesterol content of lamb.** S. K. Duckett<sup>\*1</sup>, S. L. Cuvala<sup>1</sup>, and G. D. Snowden<sup>2</sup>, <sup>1</sup>University of Idaho, Moscow, <sup>2</sup>U.S. Sheep Experiment Station, Dubois.

The objective of this study was to assess the effects of Dorper (D) genetics in comparison to Suffolk (S) on the longissimus muscle tenderness, fatty acid and cholesterol content. Lambs (n = 30) were sired by either Suffolk or Dorper rams and gestated by Columbia mature ewes. Fatty acid composition and cholesterol content of subcutaneous (SQ) and intramuscular (IM) lipid were determined by GLC. Fatty acid and cholesterol data were analyzed using the GLM procedure of SAS with breed and tissue as main effects with the two-way interaction tested. Warner-Bratzler shear force data was analyzed as above with only breed in the model. Warner-Bratzler shear force values for rib chops aged 10 d were 1.1 kg lower ( $P < .05$ ) for D than S. Total fatty acid and cholesterol contents of the IM and SQ were similar ( $P > .05$ ) between breeds. However, the total fatty acid content was higher ( $P < .05$ ) for SQ than IM and cholesterol content lower for SQ than IM. For all the fatty acid percentages, no breed by tissue interactions were significant ( $P > .05$ ). The percentage of palmitic acid in the IM was lower ( $P < .05$ ) for D than S. The percentages of palmitoleic acid, stearic acid and total odd chain fatty acid were higher ( $P < .05$ ) in D than S IM. Fatty acid percentages differed ( $P < .05$ ) between IM and SQ tissues. Intramuscular lipid contained higher ( $P < .05$ ) percentages of myristoleic, palmitoleic, oleic, linoleic, and arachadonic acids than SQ. The percentage of monounsaturated and polyunsaturated fatty acids was also higher ( $P < .05$ ) for IM than SQ. Subcutaneous lipid contained higher ( $P < .05$ ) percentages of capric, myristic, pentadecylic, margaric, and stearic acids than IM. Total saturated and odd chain fatty acid percentages were higher ( $P < .05$ ) in SQ than IM. Conjugated linoleic acid content (18:2c11; mg/g lipid) did not differ ( $P > .05$ ) between breed or tissue. The use of Dorper genetics increased the tenderness and reduced palmitic acid content in the longissimus. Intramuscular lipid contains higher percentages of monounsaturated and polyunsaturated fatty acids than SQ.

**Key Words:** Lamb, Tenderness, Fatty acids

**213 Effects of rearing system on meat quality in young kids.** A. Argüello<sup>\*1</sup>, A. Marichal<sup>1</sup>, R. Gimás<sup>2</sup>, J. Capote<sup>2</sup>, J. M. Afonso<sup>1</sup>, and J. L. López<sup>1</sup>, <sup>1</sup>Animal Production Unit, Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, <sup>2</sup>Animal Production Unit, Pastures and Forage, ICIA, Tenerife, Spain.

The objective of our study was to examine the effects of rearing system, nursed from their dams (ND) and fed a commercial milk replacer (CR), on meat quality in young kids. Thirty male and twin kids were allotted in two feeding regimens (15 ND and 15 CR). All the kids were slaughtered at live weight of ten kg. After slaughter, pH was measured on *Longissimus dorsi* (LD), *Semimembranosus* (SM) and *Triceps brachii* (TB). Twenty-four hours later (the carcasses were chilled at 4°C), pH, Warner-Bratzler shear force (WBSF), Color (Lightness, L, Chroma, C, Hue, H), Water holding capacity (WHC) of LD, SM and TB muscles were measured. In LD muscle it didn't founded differences between ND and CR group for all measurements. In TB muscle, it didn't founded differences between groups for WBSF, C and H; in contrast, CR group have a higher value of L ( $56.28 \pm 2.65$  vs  $50.77 \pm 5.13$ ,  $P \leq .05$ ), smaller WHC ( $6.5 \pm 1.04$  vs  $9.27 \pm 3.12$  (%),  $P \leq .05$ ) and pH 24 hours postmortem ( $5.73 \pm 0.07$  vs  $5.84 \pm 0.10$ ,  $P \leq .05$ ). In LD muscle only, it didn't founded differences for C value ( $16.84 \pm 7.18$  vs  $8.97 \pm 7.55$ ,  $P \leq .05$ , in CR and ND respectively). Feeding a commercial milk replacer has small effects in kids' meat quality, almost exclusively in TB muscle. Standard ANOVA procedures were used to analyze the differences between muscles; TB muscle was more firm ( $8.58 \pm 1.53$  kg,  $P \leq .05$ ), had less WHC ( $7.96 \pm 2.72$  (%),  $P \leq .05$ ) and a higher pH final ( $5.79 \pm 0.11$ ,  $P \leq .05$ ). Differences between muscles could be raised on different metabolic activities.

**Key Words:** Kid, Rearing System, Meat Quality

**214 Survival of *Escherichia coli* O157:H7 in soil.** R. G. Espinosa<sup>\*</sup>, B. Larkin, J. Thomas, and T. May, *New Mexico State University, Las Cruces.*

Enterohemorrhagic *E. coli* O157:H7 is a major concern of the food industry and the general public. Cattle have been implicated as the primary reservoir for this pathogen. It is of interest to study the characteristics of this microorganism's survival in the environment. Our