

ANIMAL SCIENCE

Title: Pork Muscle Profiling Study 2002 - NPB #02-188-yr2

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Abstract: Twenty-five individual muscles from a selected variety of pork carcasses were evaluated for physical, chemical, nutritional and sensory properties. Six muscles in the shoulder, the *infraspinatus*, *supraspinatus*, *subscapularis*, *teres major*, *pectoralis profundi* (fan portion) and *triceps brachii*, and three muscles in the ham, the *rectus femoris*, *vastus lateralis* and *gracilis*, were found to have good-to-excellent eating quality and very good potential for marketing as new products. The *infraspinatus*, *subscapularis* and *teres major* were particularly notable in that they were similar in eating quality to the pork tenderloin. Therefore, any of these nine muscles could be separated and marketed as new pork products with significant potential to increase overall value obtained from pork carcasses.

Introduction: The shoulder and ham primals of pork carcasses have traditionally been marketed to processors and retailers in an intact form, for further fabrication and manufacture into consumer products. The final consumer products typically contain a variety of muscles as naturally found in those cuts. However, individual muscles vary a great deal in physical and chemical properties, and in eating quality. In recent years the meat processing industry has sought to develop new value-added products by developing unique products from single muscles or groups of muscles from primal cuts. To facilitate this effort, it is very important to understand the characteristics of individual muscles. While the general properties of the primal cuts of pork as a whole are understood, the characteristics of individual muscles making up the primal are not well known.

Objectives: The objective of this project was to determine the physical, chemical, nutritional and sensory properties of specific muscles from the ham and the shoulder, to enhance selection of raw materials to use in developing new value-added pork items.

Materials and Methods:

Carcass selection (Iowa State University)

A total of sixty-four carcasses were selected at the Swift plant in Marshalltown, Ia. Carcasses were selected on the basis of weight (190-210 lbs. or over 220 lbs.), % lean (50-54% or over 56%) and pH (below 6.3 or above 6.5 at 37 min. postmortem). These combinations of weight, % lean and muscle pH resulted in eight treatment

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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groups (table 1, Appendix). The pH was measured with a probe electrode on the *longissimus dorsi* muscle at the base of the tenderloin. The measurement was done at the Swift plant at a location on the line just prior to the carcasses entering the blast cooler. Time of the measurement was 37 minutes postmortem. After chilling, at 24 hours postmortem, the carcasses were transported to the Iowa State University Laboratory for muscle separation. Four carcasses were selected at the beginning of each of 16 different weeks for the muscle separation and sampling.

Muscle separation and sampling (Iowa State University)

At 48(2 carcasses) or 72(2 carcasses) hours postmortem, carcasses were skinned and all external fat removed. Twenty-five previously selected muscles (table 2, Appendix), each approximately ½ lb. or more, were removed intact from each side, and all external fat and connective tissue removed from each muscle. All muscles were labeled and assigned to predetermined groups for measurement of physical, chemical, nutritional and sensory properties. The muscles were assigned to analytical groups as follows; muscles from one side of carcasses 1, 3, 5 and 7 from each selection group were used for sensory panel analysis and muscles from the other side of these carcasses was used for instrumental tenderness measurements. Muscles from carcasses 2, 4, 6 and 8 of each selection group were used for the remaining chemical and nutritional analyses.

Physical Properties

Weight, length, width and thickness (Iowa State University)

All muscles were weighed on a top-loading balance, and measured with a ruler for length, width and thickness.

Color (Iowa State University)

For color measurement, all muscles were allowed to bloom for 45 minutes at 50F before L*, a* and b* color values were recorded with a hand-held Minolta color meter.

Chemical Properties

pH (Iowa State University)

The pH was measured on all muscles at 48 or 72 hours postmortem, using a probe electrode, prior to subsequent analyses. Following pH and color measurements, muscle samples were ground, packaged and labeled for the remaining analyses.

Proximate analysis (University of Wisconsin)

Muscle samples were shipped to the University of Wisconsin. Fat (crude) was measured using the AOAC Official Method 991.36, moisture was measured using the AOAC Official Method 950.46, ash was measured using the AOAC Official Method 923.03 and protein was measured using the AOAC Official Method 992.15.

Total heme pigments (Michigan State University)

Muscle samples were shipped to Michigan State University. Total heme pigment contents were measured using a modified Warriss (1979) method.

Total collagen (Michigan State University)

Total collagen was determined for each sample using AOAC Official Method 990.26 (Hydroxyproline in Meat and Meat Products).

Water holding capacity (Iowa State University)

Water holding capacity was measured using centrifugation as described by Honikel and Hamm (1994).

Protein solubility (Iowa State University)

Protein solubility was measured by extraction (Camou et al., 1990) and protein content determined by the AOAC (992.15) combustion method.

Gel Strength of salt-soluble proteins (Iowa State University)

Following extraction of the proteins, the gel strength was measured by first diluting the protein extracts to 3 mg/ml, heating the extracts to 70F and cooling to room temperature. A Texture Analyzer with a 8mm diameter probe was used to penetrate the gel to a depth of 4mm, to measure gel hardness and elasticity.

Nutritional Properties

Total fat and fatty acid analysis (Iowa State University)

Total fat and fatty acid composition were measured by methylation of the fatty acids followed by identification using gas chromatography.

Caloric content (University of Wisconsin)

Total calories were determined with the proximate composition of the muscle samples.

Iron determination (Iowa State University)

Total iron was determined using the atomic absorption method after ashing samples in a furnace. Nonheme iron was analyzed using the ferrozine method of Carter (1971), modified for the use in meat samples (Ahn *et al.*,1993). Heme iron was determined by the difference of total iron and nonheme iron.

Cholesterol analysis (Iowa State University)

Analysis of cholesterol was performed with a gas chromatograph equipped with an on-column capillary injector and a FID detector.

Sensory Properties

Yield (Iowa State University)

Muscles were weighed before and after cooking to 71°C to determine percent cook loss.

Sensory panel (Iowa State University)

A highly trained sensory panel evaluated attributes of the cooked samples including: juiciness, tenderness, chewiness, pork flavor, and off-flavor, using a 150mm unstructured line scale, with 1 being a low value for the attribute and 150 representing a high value for the attribute.

Instrumental tenderness (Iowa State University)

Samples for instrumental texture evaluation were cooked in a similar fashion as for the panel evaluation. A circular, five-point star-probe was used to determine the amount of force needed to puncture/compress the surface to 80% of the sample height. Each sample was punctured three times and the average was recorded.

Statistical analyses

Means and standard errors were calculated for each muscle within each carcass selection group. The GLM procedure(SAS, 2002) was performed with the fixed effects including carcass weight, % lean and pH. The interactions for carcass weight x % lean, carcass weight x pH and % lean x pH were tested. Differences in least squares means for main effects and interactions were determined at an alpha level of 0.05. Overall means across all selection groups were also determined and muscles ranked in order of the overall means. The overall means reflect the values for each muscle from the 64 carcasses selected. Because the carcasses were not randomly selected, the overall means are representative of the selected population only. All results are shown in two-table sets in the appendix. Table a includes the means and standard errors for each of the eight selected groups as well as the overall means for all groups combined. Muscles are listed in order of the overall means. Table b shows the interaction of the main effects (groups) for the measured muscle properties for each muscle.

Results:

Physical properties

Weight, length, width and thickness:

Mean weights and standard errors of the muscles for each selection group as well as overall means are shown in table 3a. The range is from slightly less than ½ lb.(140 grams) to slightly over 4 lbs.(1836 grams). Overall, the *biceps*(5) was heaviest, the *subscapularis*(97) was lightest. As might be expected, table 3b shows that there were significant interactions between carcass weight and muscle weight as well as % lean and muscle weight. Tables 4a and 4b(length), 5a and 5b(width), and 6a and 6b(thickness) show means and interaction of these dimensions with carcass groups. The dimensions show interactions most often with carcass % lean.

Color:

The color L* values in table 7a show the greatest lightness for the *cutaneous faciei*(14) and a range of 39.6 to 62.1. The *longissimus dorsi*(50) was also high in the lightness value. There was no consistent interactions with the selection groups(table 7b).

The a* values(redness) in tables 8a and 8b show little difference for muscle redness. The b* values in table 9a show differences between muscles but little interaction with carcass groups(table 9b).

Chemical Properties

pH

Muscle pH, measured at 48-72 hours postmortem, ranged from 5.81 overall to 6.41 overall(table 10a). There was no consistent interaction with the carcass groups(table 10b).

Proximate analysis:

Tables 11-14 show the moisture, protein, fat and ash content of the individual muscles. The % fat was most variable ranging from 1.77% overall for the *rectus femoris*(79) to 18.01% overall for the *cutaneous faciei*(14). Interaction of % fat occurred most often with % carcass lean(table 12b). The *cutaneous faciei*(14) was considerably lower in moisture content(table 11a) and higher in fat content(table 12a) than the other muscles evaluated.

Total heme pigments:

Heme pigment analysis in Table 15a shows the greatest heme content overall in the *vastus intermedius/vastus medialis* muscle combination. The *longissimus dorsi* was lowest overall. There was little interaction between carcass group and heme pigment content.

Total collagen:

Total collagen content was greatest overall(table 16a) in the *biceps*(5) and the *cutaneous faciei*(14). Muscles lowest in collagen content included the *longissimus dorsi*(50) and the *psaos major*(69). Collagen showed frequent interaction with carcass weight/pH and %lean/pH carcass groups(table 16b).

Water Holding Capacity:

Water holding capacity, in table 17a, is shown as percent loss so the larger value represents lower WHC.

Protein solubility:

Tables 18a shows total protein content in the muscle extracts. Interestingly, the *subscapularis*(97) which is one of the most tender muscles appears to be among the lowest for soluble protein. Table 18b shows essentially no interaction with carcass selection groups. Gel strength characteristics of salt-soluble proteins are shown in Tables 19-20. Tables 19a and 19b show the hardness of the gels. Tables 20a and 20b show the gel elasticity. Elasticity showed no differences and very few interactions.

Nutritional Properties

Total fat and fatty acids

The results for total fat analysis which was included as part of the fatty acid analysis, and specific fatty acid contents are shown in Tables 21 through 35. Total fat in table 21a is very similar but generally a little higher in % fat than the values from proximate analysis shown in table 12a. Total fat in table 21a was measured with a chloroform-methanol extract which includes some of the minor lipids not included with the ether extract used for proximate analysis. The fatty acids shown in tables 22-35 include myristic(C14:0), palmitic(C16:0), palmitoleic(C16:1), margaric(C17:0 and C17:1), stearic(C18:0), oleic(C18:1), linoleic(C18:2), linolenic(C18:3), arachidic(C20:0), arachidonic(C20:4), eicosapentaenoic(C20:5), docosapentaenoic(C22:5) and docohexaenoic(C22:6).

Calories:

Total calories are shown in table 36a and closely parallel the fat content shown in table 12a and 21a. The *cutaneous faciei*(14), for example, is highest in caloric content because of the relatively high fat content compared with the other muscles. There was relatively little interaction between the fat content and the carcass groups(table 36b).

Iron:

Tables 37-39 show the total iron, heme iron and non-heme iron. Because heme iron makes up the largest share of iron in muscle, the total iron(tables 37 and 38) are closely related. These results also show good agreement with the heme pigment content(table 15a). There is a very general relationship between redness(table 7a) and heme pigment/heme iron but the muscle rank in each case is somewhat different due to the effects of several variables on meat color that are independent of heme concentrations.

Cholesterol:

The results for cholesterol contents are shown in Tables 40a and 40b. Differences in the overall means for cholesterol content showed most of the muscles to be relatively similar.

Sensory Properties

Yield/Cooking loss:

The cooking losses from each muscle showed an overall range of 8.91% for the *cutaneous faciei*(14) to 21.73% for the *biceps*(table 41a). There was very little interaction with the carcass groups(table 41b).

Sensory panel:

Sensory panel results for tenderness are shown in Tables 42a and 42b.

The *subscapularis*(97), *psoas major*(69), *spinalis*(93), *infraspinatus*(43) and *rectus femoris*(79) were included in the top group of the most tender muscles(table 42a). Juiciness(table 43a) did not differ as greatly as tenderness. In general, results for juiciness appeared to be affected by cooking losses(table 41a) but several individual muscles did not follow that general trend. Flavor intensity(table 44a) did not vary greatly among the different muscles(total range of overall means from 26 to 56 on a scale of 150). Interestingly, the *longissimus dorsi*(50) was among the muscles ranked lowest for flavor intensity. Chewiness in tables 45a and 45b shows the highest scores for muscles with most chewiness. Consequently, the typically tender muscles are ranked low on this table. Examples include the *subscapularis*(97), *psoas major*(69) and *infraspinatus*(43). Off-flavor intensity(tables 46a and 46b) was scored low for all muscles with the overall means ranging from 1 to 38 on a scale of 150.

Instrumental tenderness:

Tenderness measured as Instron peak force to shear the muscle samples is shown in table 47a. As might be expected, these results are closely related to panel tenderness(table 42a). The *biceps*(5) and *semimembranosus*(86) are among the muscles with the greatest shear force(toughest) while the *subscapularis*(97), *spinalis*(93) and *psoas major*(69) were among those that had the lowest shear force(most tender). There was virtually no interaction for shear force and carcass groups(table 47b).

Discussion:

The results include a great deal of information on the 25 individual pork muscles selected for this study. In addition to the 25 muscles originally chosen, it was observed during the study, that an additional muscle in the shoulder, the *teres major*(101), had excellent eating qualities, was relatively accessible and was an attractive shape and size. It had not been included in the initial group of 25 muscles because it weighed about 1/3 lb., which was below the arbitrary cutoff for weight used to select muscles for comparison. However, the *teres major* was included in subsequent sensory testing to provide some information on this muscle as well. In addition to the specific physical, chemical, nutritional and sensory information resulting from this study, an attempt has been made to evaluate the potential of these muscles for new uses by also considering ease of accessibility in deboning and impact of removing specific muscles on remaining muscle groups. Based on all these considerations, 6 muscles in the shoulder and 3 muscles in the ham are suggested as good or excellent candidates for development of new cuts or products. These muscles include the *subscapularis*(97), *supraspinatus*(98), *infraspinatus*(43), *teres major*(101), *pectoralis profundi*(63b,fan) and *triceps brachii*(108) in the shoulder and the *vastus lateralis*(111), *rectus femoris*(79) and the *gracilis*(40) in the ham. The *subscapularis* and the *infraspinatus* were chosen because they showed exceptional eating qualities, equivalent to the pork tenderloin(*psoas major*(69)). However, the *subscapularis* is not easily accessible during deboning of the shoulder, and is an irregularly-shaped muscle. The *infraspinatus* is accessible but has a large strip of connective tissue running through the middle of the muscle that is unattractive. The *teres major* also has excellent eating qualities, is relatively accessible and has an attractive appearance. The *pectoralis profundi*(fan portion) was chosen because it is accessible and has a flat, thin shape that can be used a number of ways. It is, however, relatively tough compared to other muscles. The *triceps brachii* or “cushion” is intermediate for many of the qualities measured but is very accessible and has a shape and size that can be easily utilized. For ham muscles, the *vastus lateralis* and *rectus femoris* were chosen because they showed very good sensory qualities. On the other hand, they are intermediate in accessibility and can already be used for cured hams. The *gracilis* is easily accessible, intermediate in eating quality and has a flat, thin shape that can be utilized in a number of ways, similar to the *pectoralis profundi*.

While this information on individual muscles is very important to the first step in development of new pork products, the next step should be an evaluation of potential uses of the individual muscles by food service and retail markets. An assessment of perceived quality and preparation properties by the primary users is important to the likely market success of these products.

Lay Interpretation:

This research project evaluated a wide variety of pork quality attributes for each of 25 different muscles from 64 carcasses. The results identified 6 shoulder muscles and 3 ham muscles that have quality attributes that could be utilized to separately market these muscles and potentially achieve greater overall pork carcass value.

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Appendix

Table 1. Weight, percent lean, and longissimus muscle pH(at 37 minutes post-mortem) characteristics of selected carcass groups.

	1	2	3	4	5	6	7	8
Weight	>220	>220	>220	>220	190-220	190-220	190-220	190-220
% Lean	>56%	50-54%	>56%	50-54%	>56%	50-54%	>56%	50-54%
pH	>6.5	>6.5	<6.3	<6.3	>6.5	>6.5	<6.3	<6.3

Table 2. Muscles chosen and corresponding numbers used for each muscle according to Porcine Myology(National Pork Producer's Council, 2000).

Muscle	Number
Adductor	1
Biceps femoris	5
Cutaneous faciei	14
Gastrocnemius	34
Gluteus medius	37
Gluteus superficialis	39
Gracilis	40
Infraspinatus	43
Latissimus dorsi	48
Longissimus	50
Pectoralis profundi (tube portion)	63a
Pectoralis profundi (fan portion)	63a
Psoas major	69
Rectus femoris	79
Semimembranosus	86
Semispinalis capitis	87
Semitendinous	88
Serratus ventralis	91
Spinalis	93
Subscapularis	97
Supraspinatus	98
Tensor fasciae latae	100
Triceps brachii long	108
Vastus intermedius/medialis	110
Vastus lateralis	111

Table 3a. Least square subclass¹ means and standard errors for muscle weight in grams.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
5	1836	1672	1824	1514	1618	1476	1636	1515	35.543	1637 ^A
86	1521	1372	1508	1288	1336	1215	1437	1231	30.335	1363 ^B
91	1041	1022	1060	960	973	891	954	931	24.19	979 ^C
37	1013	990	1046	847	937	851	962	844	27.832	936 ^C
108	809	798	859	725	778	672	777	752	23.346	821 ^D
63 b	870	832	887	761	807	710	799	736	19.494	800 ^D
50	690	695	805	635	660	633	759	686	32.912	695 ^E
48	715	732	744	606	635	602	659	621	20.022	664 ^E
88	637	612	625	515	533	506	540	506	17.727	559 ^F
79	582	534	605	488	533	499	561	492	18.295	536 ^F
98	568	531	553	503	526	453	524	475	13.444	516 ^{FG}
34	552	523	573	503	518	460	525	468	15.197	515 ^{FG}
69	507	524	529	488	460	448	517	482	15.73	494 ^{FGH}
111	495	471	493	412	438	407	446	420	12.229	447 ^{GHI}
43	454	422	489	436	434	407	432	436	13.059	438 ^{HI}
1	441	391	425	382	443	362	444	371	14.281	406 ^{IJK}
63 a	420	369	409	365	375	340	397	358	10.797	379 ^{IJK}
110	385	354	376	347	363	327	350	340	11.111	355 ^{JK}
93	335	365	349	476	350	308	341	315	68.067	354 ^{JK}
40	345	327	352	303	329	283	337	296	9.484	321 ^{KL}
39	292	296	329	255	257	257	288	251	11.554	278 ^{LM}
14	326	288	314	246	249	252	281	254	12.879	276 ^{LM}
100	244	279	279	231	230	242	204	233	12.888	255 ^{LM}
87	249	215	227	202	208	200	225	229	10.543	219 ^{MN}
97	168	172	174	169	155	140	158	154	6.779	160 ^N

¹Appendix Table 1.

same superscript are not significantly different (p<0.05).

Overall means with the

Table 3b Main effects and interactions for muscle weight.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1		<.0001				
5	<.0001	<.0001		.0392	.0251	
14	.0003	.0005		.0289	.0156	
34	<.0001			<.0001		
37	.0002	<.0001				.0093
39	.0004	.0015				.0007
40	.0030	<.0001				
43	.0141	.0041	.0437			
48	<.0001	.0009			.0152	.0054
50		.0054	.0268			.0185
63.1	.0028	<.0001				
63.2	<.0001	<.0001				
69	.0017					.0185
79	.0187	<.0001				.0453
86	<.0001	<.0001		.0133		
87		.0428		.0067		
88	<.0001	.0002	.0431		.0223	
91	<.0001	.0014				
93						
97	.0003					
98	<.0001	<.0001				
100		.0500			.0390	<.0001
108						
110	.0110	.0009				
111	<.0001	<.0001			.0169	

Table 4a. Least square subclass¹ means and standard errors for muscle length in cm.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
63 b	48.6	46.8	49.8	47.9	49.4	46.7	48.3	47.6	1.233	46.5 ^A
63 a	45.6	41.1	43.2	45	46.6	43.5	44.5	43.7	1.407	45.1 ^A
91	43.8	42.8	43.8	43.8	43.3	40.8	42.2	42.3	1.307	43.5 ^{AB}
69	42	39.2	40.5	40.8	39.3	40.1	41.1	37.9	1.165	40.2 ^B
48	34.2	33.9	34.1	33.4	34.1	32.5	34	32.1	0.824	33.2 ^{CD}
5	30.8	30.2	31.9	30.7	31.9	30.8	31.3	30.1	0.609	31.5 ^{CD}
93	30.6	29.3	30.3	45.3	31.1	28.7	31.9	30.4	5.029	31.2 ^{CD}
14	31.3	29.3	30.2	27.6	28.6	28.1	29.7	29.2	1.221	30.1 ^{CD}
50	27.6	27.2	27.6	28.3	27.7	27.1	28.2	28.4	0.825	29.2 ^{DE}
86	26.2	25.7	26.6	25.7	26.7	24.8	27.4	25.8	0.616	26.7 ^{EFG}
37	27.1	25.9	27.3	25.3	26	24.2	25.9	24.2	0.506	26.1 ^{EFG}
40	26	24.6	25.9	23.8	25.4	23.9	25.7	23.7	0.056	25.1 ^{FGH}
34	24.9	24.1	24.9	24	24.6	23.9	25.4	23.2	0.636	24.9 ^{FGH}
88	25.1	28	24	38.2	24.8	24.2	24.8	23.9	5.162	24.3 ^{FGH}
43	23.1	21.9	23.6	23.1	23.3	23.3	23.4	22.8	0.412	22.8 ^{GHI}
108	22.5	21.6	23.1	34.9	22.1	22.1	22.8	22.4	4.407	22.3 ^{HIJ}
87	21.9	20	21.4	21.3	21.1	19.3	21.6	19.9	0.605	20.8 ^{IJK}
98	21.1	10.2	20.6	21.3	21.5	24.18	20.1	20.1	1.624	20.3 ^{IJK}
39	20.8	20.4	22.4	20.1	22.5	20.3	21.8	19.1	0.876	19.5 ^{IJK}
100	20.4	22.6	21.3	17.9	21.1	20.7	21.6	19.5	0.784	19.0 ^{JKL}
79	18.9	18.2	19.3	18.5	18.6	18.2	18.4	17.6	0.375	18.4 ^{KL}
111	19.1	17.6	19.1	17.1	30.2	17.3	18.4	16.8	4.361	18.4 ^{KL}
1	14.9	15.2	15.9	15.9	16.3	15.1	16.1	15	0.378	16.1 ^{LM}
110	16.1	15.5	15.8	15.3	16.6	14.9	15.8	15.9	0.423	15.6 ^{LM}
97	14.4	13.8	14.5	14.9	14.1	13.4	14.1	13.9	0.324	14.2 ^M

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 4b Main effects and interactions for muscle length.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1				.0210		
5		.0199				
14						
34		.0137				
37	.0004	<.0001				
39		.0028				
40		<.0001				
43						
48						
50						
63.1						.0322
63.2		.0381				
69						
79	.0416	.0092				
86		.0054				
87		.0017				
88						
91						
93						
97		.0313				
98						
100			.0477			.0015
108						
110		.0205				
111						

Table 5a. Least square subclass¹ means and standard errors for muscle width in cm.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
48	20.9	20.5	21.6	20.8	20.7	19.8	20.9	20.1	0.671	20.5 ^A
5	20.8	20.6	20.8	20	19.8	19.6	19.6	19.9	0.401	20.0 ^A
37	19.7	19.8	19.8	19.2	18.9	18.1	19.5	18.6	0.365	18.7 ^{AB}
91	15.1	15.8	15.5	18	16.4	14.5	15.1	15.6	0.817	17.8 ^{ABC}
63 b	17.4	17.1	18.1	15.3	18.1	16.4	16.9	16.1	0.375	16.7 ^{BCD}
111	14.6	16.3	16	15.4	15.6	15.3	16.3	14.8	0.444	16.1 ^{BCD}
86	15.1	14.9	15.6	14.4	14.5	14.2	14.9	14.4	0.279	15.1 ^{CDE}
34	14.8	14.7	14.8	14.7	14.5	13.9	14.6	14.2	0.321	14.5 ^{DEF}
40	14.5	14.2	14.3	14.6	14.4	14.5	13.7	14.31	0.419	12.9 ^{EFG}
110	13.3	13.4	13.3	13.2	13.4	12.8	13.3	12.8	0.304	12.9 ^{EFG}
108	12.6	12.9	13.2	12.2	13.4	12.6	12.5	12.5	0.412	12.6 ^{EFGH}
14	12.3	11.3	12.6	12	12	10.45	12	11.4	0.469	11.9 ^{FGHI}
100	11.1	12.6	12.1	12.3	11.8	11.3	12.5	11.4	0.357	11.8 ^{FGHI}
98	11.1	10.9	10.7	10.2	10.8	10.1	10.9	10.4	0.253	10.6 ^{GHIJ}
50	10.3	10.1	10.7	9.6	9.8	10.3	10.6	9.8	0.247	10.2 ^{GHIJK}
39	9.8	10.6	9.9	9.9	9.2	9.2	9.9	9.5	0.356	9.7 ^{HIJK}
79	9.5	9.3	9.6	8.9	9.5	8.8	9.6	9.3	0.261	9.4 ^{IJK}
97	10.1	10	10.1	9.8	9.7	8.9	9.6	9.5	0.283	9.4 ^{IJK}
1	9.8	9	9.4	9	9.8	8.8	9.6	8.9	0.216	9.4 ^{IJK}
93	9.4	10.6	9.4	9.2	17.6	9.4	9.6	9.4	2.911	9.3 ^{IJK}
88	10.4	9.6	10.1	9.1	10	9	9.5	8.8	0.365	9.3 ^{IJK}
43	8.7	8.9	9.3	9.1	9.1	8.7	9.1	9.2	0.198	9.0 ^{IJKL}
87	9.3	8.8	9.3	8.6	8.7	8.9	9	8.8	0.303	8.5 ^{JKL}
69	6.6	6.8	7.3	6.2	7.7	6.6	7	6.5	0.278	7.4 ^{KL}
63 a	6.3	5.9	6.9	6.1	6.4	5.7	6.4	6.3	0.299	6.2 ^L

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 5b Main effects and interactions for muscle width.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1		<.0001				
5	.0167					
14		.0111				
34						
37	.0017	.0362				
39	.0235					
40						
43			.025			
48						
50		.0218				.0050
63.1		.0161				
63.2		<.0001	.0147			
69		.0019				
79		.0061				
86	.0125	.0051				
87						
88	.0718	.0014				
91				.0475		
93						
97	.0046					
98		.0060			.0380	
100				.0017		
108						
110						
111				.0238		.0062

Table 6a. Least square subclass¹ means and standard errors for maximum thickness of muscles in cm.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
5	6.63	6.56	6.44	5.75	5.94	6.19	6.5	5.88	0.193	6.09 ^A
86	6.5	6.06	6.13	6.06	5.94	5.88	6.25	5.88	0.178	6.03 ^A
108	5.94	6.38	6.31	5.94	5.88	5.69	6.13	6.06	0.153	5.97 ^{AB}
79	5.63	5.44	5.75	5	5.38	5.38	5.44	5.13	0.161	5.5 ^{BC}
1	5.81	5.38	5.63	5.31	5.43	4.93	5.43	5	0.186	5.25 ^C
50	5.56	5.38	5.69	4.88	5.19	5.25	5.56	5.13	0.165	5.22 ^C
98	4.75	4.68	4.94	4.31	4.63	4.63	4.69	4.38	0.136	4.59 ^D
37	4.56	4.81	4.63	4.25	4.56	4.63	4.81	4.63	0.187	4.56 ^{DE}
91	4.38	4.31	4.31	4.06	3.93	4.19	4.06	4.19	0.152	4.09 ^{EF}
110	4.19	4.25	4.19	3.94	4.19	3.89	4.25	4.25	0.187	4.03 ^F
88	4.31	4.25	4.38	3.88	3.94	3.94	4.19	3.81	0.118	3.97 ^F
69	3.75	3.88	4	3.81	3.81	3.75	3.81	3.56	0.135	3.78 ^{FG}
43	4	4	4.19	3.44	3.56	3.69	4.06	4	0.162	3.75 ^{FG}
111	3.44	3.5	3.56	3.13	3.25	3.25	3.44	3.44	0.132	3.38 ^{GH}
39	3.19	3.38	3.43	2.94	2.94	3.19	3.19	3.38	0.138	3.18 ^{HI}
63 a	3.19	2.88	2.88	2.88	2.88	2.94	2.94	2.88	0.135	2.97 ^{HIJ}
34	3.25	2.94	3.06	2.63	2.75	2.63	2.81	2.63	0.132	2.78 ^{IJK}
48	2.63	3	2.56	2.44	2.38	2.63	2.75	2.69	0.132	2.72 ^{IJK}
100	2.44	2.75	2.81	2.25	2.56	2.31	2.75	2.44	0.138	2.48 ^{JKL}
93	2.38	2.5	2.31	2.13	2.44	2.25	2.31	2.31	0.122	2.34 ^{KLM}
97	2.19	2.25	2.25	2.18	2.06	2.13	2.31	2.25	0.102	2.18 ^{LM}
63 b	2.38	2.31	2.5	2.19	2.25	2.13	4.19	2.19	0.689	2.15 ^{LM}
87	2	2.06	2.06	2	2	2.19	2.06	2.06	0.065	2.09 ^{LMN}
40	1.94	2	1.88	1.81	1.81	1.81	0.175	1.88	0.093	1.9 ^{MN}
14	1.44	1.81	1.56	1.69	1.38	1.63	1.47	1.81	0.12	1.63 ^N

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 6b Main effects and interactions for maximum thickness of muscles.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1	.0138	.0017				
5		.0418			.0240	.0070
14		.0017				
34	.0053	.0053				
37						
39						
40						
43					.0110	.0435
48					.0053	.0318
50		.0038				.0172
63.1						
63.2						
69						
79		.0070				
86						
87						
88	.0058	.0058				.0163
91						
93						
97						
98		.0105				.0247
100		.0398				.0180
108						
110						
111						

Table 7a. Least square subclass¹ means and standard errors for L* color value.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	60.24	55.35	58.54	61.3	56.88	62.07	56.48	58.86	2.054	58.25 ^A
50	55.06	51.43	53.24	53.62	53.3	54.06	50.59	52.38	2.013	52.24 ^B
100	55.05	51.79	54.28	51.61	51.06	52.11	48.65	51.71	1.743	50.65 ^{BC}
86	50.42	48.45	49.05	51.54	49.63	50.82	46.67	50.65	2.147	50.14 ^{BCD}
39	50.25	48.46	48.64	50.35	50.49	48.32	49.11	49.9	1.773	49.79 ^{BCD}
63 b	51.59	49.09	50.07	49.86	56.01	50.39	45.9	51.35	2.269	48.74 ^{BCDE}
88	49.97	47.3	47.62	48.69	44.63	49.95	49.22	48.72	2.219	47.79 ^{CDEF}
5	48.86	43.81	48.57	50.02	47.6	46.67	45.18	47.02	2.234	47.45 ^{CDEF}
63 a	47.18	48.22	48.72	50.3	44.26	48.6	47.12	45.78	1.941	46.87 ^{DEFG}
37	48.57	47.18	50.69	48.84	49.17	45.74	46.33	46.37	1.935	46.74 ^{DEFG}
79	46.7	45.65	46.95	46.62	46.37	47.95	43.63	46.65	2.448	46.05 ^{EFGH}
48	47.16	44.16	48.07	47.31	47.22	49.92	44.63	46.2	1.401	45.73 ^{EFGHI}
87	45.18	43.52	44.07	46.38	43.71	46.27	46.38	45.66	1.3	44.46 ^{FGHIJ}
98	45.55	46.31	45.78	45.27	45.1	42.36	45.66	44.11	1.86	44.21 ^{FGHIJK}
1	44.64	43.13	45.61	45.38	44.16	46.16	42.73	42.31	1.688	43.77 ^{GHIJKL}
111	46.41	44.91	45.17	44.5	44.51	44.97	40.77	43.78	1.951	43.28 ^{GHIJKLM}
69	43.65	42.23	43.45	43.33	43.24	41.15	40.45	42.28	0.905	42.49 ^{HIJKLM}
93	44.32	43.05	43.38	44.27	41.53	43.03	41.58	44.23	1.237	42.22 ^{IJKLM}
91	44.71	41.26	43	42.91	41.91	43.3	43.32	42.48	1.488	42.07 ^{JKLM}
43	43.63	41.65	41.79	43.73	42.4	43.5	40.98	41.87	1.699	41.86 ^{JKLM}
40	42.72	40.89	42.96	41.89	42.83	41.82	39.19	41.71	1.266	41.26 ^{JKLM}
108	43.64	39.3	44.45	41.22	40.86	43.63	40.61	43.05	1.243	41.21 ^{JKLM}
97	42.9	42.09	44.3	40.82	41.61	41.13	44.62	42.47	1.956	40.58 ^{KLM}
110	42.39	40.23	40.38	41.39	40.15	39.91	38.91	40	1.436	40.24 ^{LM}
34	44.31	40.7	43.9	40.99	41.48	39.61	37.92	42.54	1.654	40.07 ^M

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 7b Main effects and interactions for L* color values.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34				.0046		
37						
39						
40						
43						
48					.0150	
50						
63.1						
63.2						.0483
69	.0407					
79						
86						
87						
88						
91						
93						
97						
98						
100						
108				.0013		
110						
111						

Table 8a. Least square subclass¹ means and standard errors for a* color values.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
40	21.03	21.98	22.83	22.14	22.04	20.91	25.39	21.53	0.619	22.58 ^A
110	22.13	21.47	21.5	22.23	21.75	21.95	22.3	21.71	0.583	22.24 ^A
87	21.41	22.47	21.56	21.37	21.87	21.37	23.33	21.8	0.813	22.19 ^A
97	22.86	22.01	21.33	21.83	21.72	21.64	20.84	20.19	0.69	21.96 ^A
93	22.05	22.99	22.28	22.09	21.27	22.36	22.73	21.43	0.569	21.93 ^A
69	21.56	20.98	21.68	21.39	21.49	21.41	21.36	20.64	0.477	21.62 ^A
34	21.03	21.09	20.93	22.19	21.63	21.05	20.8	21.18	0.949	21.61 ^A
43	21.16	23.08	20.89	21.85	19.96	22.39	22	21.44	0.796	21.61 ^A
108	20.86	21.29	20.05	21.99	20.09	21.22	20.71	20.41	0.626	20.92 ^A
91	21.09	20.58	21.31	21.26	20.4	20.96	20.9	20.89	0.56	20.89 ^A
98	20.22	19.57	19.76	21.22	19.99	20.49	20.54	20.36	0.594	20.45 ^A
88	20.3	19.65	20.13	19.49	21.34	19.66	20.57	19.88	1.077	20.44 ^A
63 a	20.45	19.15	18.87	19.78	20.07	19.76	20.08	20.76	0.618	20.2 ^A
100	19.08	18.96	18.23	20.01	19.53	19.23	20.33	19.01	0.867	20.17 ^A
63 b	19.29	19.8	20.37	19.72	18.02	18.9	21.34	19.22	0.78	20.05 ^A
48	20.47	20.84	19.91	20.24	19.26	19.53	19.43	19.66	0.619	19.97 ^A
111	18.67	19.65	19.16	19.71	19.16	19.73	20.24	19.25	0.054	19.45 ^A
1	19.9	19.04	19.11	19.51	18.73	19.64	19.48	18.79	0.467	19.4 ^A
14	18.3	19.62	19.04	16.98	21.1	17.78	20.98	18.6	0.981	19.25 ^A
39	19.39	18.07	18.52	19.03	19.37	18.81	19.08	18.6	0.704	18.75 ^A
37	18.2	17.82	17.83	18.52	17.15	18.26	19.33	18.27	0.482	18.37 ^A
79	18.23	18.1	18.38	18.28	18.26	18.28	18.24	17.39	0.9	18.19 ^A
5	18	17.54	19.27	16.55	17.5	18.35	18.81	17.76	0.68	17.7 ^A
50	16.7	17.72	17.69	17.87	17.38	17.61	17.73	17.48	0.815	17.57 ^A
86	17.75	16.86	17.87	17.06	17.1	17.5	18.11	16.76	0.786	17.21 ^A

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 8b Main effects and interactions for a* color values.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5		.0405				
14						
34						
37						
39						
40		.0085	.0029	.0026		
43						
48						
50						
63.1						
63.2		.0462				
69						
79						
86						
87						
88						
91						
93						.0400
97						
98						
100						
108						
110						
111						

Table 9a. Least square subclass¹ means and standard errors for b* color values.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	7.45	5.91	6.87	6.4	6.84	7.61	7.72	6.6	0.511	6.98 ^A
88	6.72	5.79	6.25	5.92	5.93	5.86	6.45	5.87	0.523	6.08 ^{AB}
100	7.05	5.56	5.97	6.24	5.42	5.74	5.37	6.09	0.464	5.81 ^{AB}
87	5.96	5.72	5.52	5.54	5.95	6.41	6.29	6.45	0.429	5.75 ^{ABC}
93	6.15	6.42	6.15	5.9	5.18	6.43	5.88	6.77	0.584	5.67 ^{BC}
110	6.18	5.24	5.77	5.62	5.05	6	5.33	5	0.636	5.57 ^{BCD}
69	6.13	5.02	6.37	5.18	5.53	5.7	5.12	5.16	0.395	5.51 ^{BCDE}
63 a	5.75	5.09	5.26	6.24	5.41	5.5	5.15	5.41	0.689	5.43 ^{BCDE}
108	5.64	5.51	5.09	5.97	4.73	6.04	5.43	5.48	0.525	5.42 ^{BCDE}
91	5.85	4.95	5.86	5.82	5.23	6.4	5.31	5.29	0.656	5.41 ^{BCDE}
63 b	5.69	5.18	5.97	5.65	6.9	5.36	4.85	5.77	0.599	5.38 ^{BCDEF}
43	5.01	6.52	4.59	5.71	4.53	6.22	5.6	5.42	0.534	5.20 ^{BCDEF}
50	5.41	4.77	5.62	5.62	5.6	5.48	4.88	5.32	0.531	5.12 ^{BCDEF}
97	6.26	5.11	5.04	4.77	5.35	5.63	5.51	4.89	0.407	5.02 ^{BCDEF}
98	5.19	4.67	4.49	5.93	5.17	5.67	5.35	4.69	0.438	4.99 ^{BCDEF}
48	5.81	5.1	5.47	5.26	5.14	6.02	4.6	5.44	0.427	4.97 ^{BCDEF}
40	4.77	4.55	5.23	5.38	5.27	4.33	5.52	4.55	0.4	4.92 ^{BCDEF}
39	5.54	4.26	4.85	5.14	5.61	5.04	4.94	4.44	0.512	4.86 ^{BCDEF}
34	5.15	4.8	5.14	5.19	5.26	5.11	4.25	3.86	0.594	4.55 ^{CDEFG}
86	6.08	3.63	4.6	5.3	4.22	4.84	3.95	4.08	0.643	4.37 ^{DEFG}
5	5.18	3.82	6	4.32	4.35	5.12	4.64	3.86	0.771	4.36 ^{DEFG}
1	4.74	3.79	5.08	4.83	3.98	4.96	4.1	3.59	0.562	4.31 ^{EFG}
111	4.3	3.85	4.66	4.49	3.55	4.86	3.92	3.96	0.588	4.15 ^{FG}
79	3.76	4.21	4.6	4.14	3.02	4.65	3.18	3.02	0.652	3.60 ^G
37	3.96	3.37	4.79	3.81	4.01	4.55	4.25	3.47	0.58	3.57 ^G

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 9b Main effects and interactions for b* color values.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48				.0393		
50						
63.1						
63.2						
69				.0344		
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 10a. Least square subclass¹ means and standard errors for muscle pH.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall	
87	6.24	6.36	6.34	6.49	6.47	6.33	6.42	6.44	0.08	6.41	A
97	6.44	6.43	6.37	6.42	6.38	6.31	6.36	6.45	0.08	6.37	AB
93	6.18	6.34	6.2	6.57	6.47	6.19	6.49	6.39	0.078	6.36	AB
40	6.36	6.33	6.24	6.31	6.24	6.2	6.39	6.4	0.079	6.3	ABC
110	6.3	6.2	6.34	6.35	6.29	6.29	6.44	6.35	0.079	6.29	ABCD
91	6.14	6.29	6.2	6.41	6.27	6.18	6.34	6.42	0.079	6.24	ABCDE
14	5.97	6.34	6.2	6.45	6.37	6.12	6.29	6.18	0.085	6.22	ABCDEF
43	6.32	6.29	6.27	6.2	6.29	6.15	6.31	6.31	0.075	6.21	ABCDEF
79	6.16	6.29	6.11	6.14	6.15	6.01	6.3	6.25	0.091	6.13	ABCDEFG
98	6.24	6.12	6.15	6.01	6.26	6.09	6.19	6.22	0.082	6.13	BCDEFG
100	6.05	6.21	6.06	6.23	6.13	6.14	6.26	6.31	0.085	6.11	BCDEFGH
34	6.06	6.11	5.99	6.08	6.14	6.05	6.15	6.21	0.072	6.08	CDEFGHI
1	6.05	6.14	6.01	6.09	6.07	5.98	6.1	6.17	0.081	6.05	CDEFGHI
63 a	5.98	6.09	6.08	6.13	6.1	5.98	6.19	6.11	0.078	6.05	CDEFGHI
88	6.08	6.19	6.02	6.13	6.15	6.06	6.14	6.21	0.079	6.05	CDEFGHI
48	5.96	6.19	6	6.14	6.1	5.99	6.18	6.24	0.076	6.03	CDEFGHI
111	5.98	6.05	5.99	6	6.06	5.96	6.12	6.13	0.079	6.03	CDEFGHI
69	5.86	6.1	5.98	5.99	5.99	6	6.06	6.06	0.066	6.02	DEFGHI
108	5.96	6.14	6.02	6.11	6.13	5.94	6.13	6.14	0.085	5.98	EFGHI
63 b	5.85	6	5.94	5.99	6.02	5.93	5.95	6.01	0.074	5.96	FGHI
39	5.86	6	5.89	6.03	5.98	5.86	5.99	5.99	0.068	5.88	GHI
86	5.84	5.96	5.9	5.91	5.93	5.84	5.92	5.9	0.064	5.86	GHI
37	5.79	5.91	5.79	5.89	5.92	5.84	5.96	5.91	0.059	5.85	HI
5	5.83	6.04	5.97	5.97	5.94	5.87	6	5.99	0.074	5.84	I
50	5.7	5.78	5.75	5.85	5.87	5.75	5.94	5.81	0.053	5.81	I

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 10b Main effects and interactions for muscle pH.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14				<.0001		
34						
37				.0374		
39				.0429		
40					.0340	
43						
48						
50	.0462			.0057		
63.1						
63.2						
69						
79					.0243	
86						
87						
88						
91			.0341			
93			.0385	<.001		
97						
98						
100						
108						
110						
111						

Table 11a. Least square subclass¹ means and standard errors for % moisture.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
79	77.17	77.17	77.63	77.5	77.51	76.71	77.41	77.12	0.381	77.37 ^A
111	76.16	76.85	76.76	77.13	76.88	75.89	76.97	76.58	0.495	76.83 ^{AB}
110	76.26	76.69	76.1	76.31	77.14	75.46	76.57	76.13	0.557	76.6 ^{AB}
40	74.55	75.91	76.42	76.32	76.32	75.95	76.77	76.15	0.76	76.55 ^{AB}
1	75.69	76.34	75.92	76.52	76.53	75.98	76.61	76.09	0.41	76.42 ^{AB}
69	75.38	75.39	76.86	76.46	76.67	75.63	76.15	76.05	0.425	76.41 ^{AB}
43	74.85	76.79	75.77	76.23	76.86	75.21	75.43	75.19	0.713	76.32 ^{ABC}
98	75.09	76.7	75.58	75.65	77.16	75.93	75.97	75.83	0.58	76.16 ^{ABCD}
108	75.08	75.77	76.21	76.13	75.97	75.36	75.58	75.6	0.596	76.16 ^{ABCDE}
34	75.14	74.93	75.61	75.92	75.46	75.1	75.7	75.46	0.429	75.59 ^{BCDEF}
37	74.45	75.07	75.7	75.59	75.73	74.94	75.57	74.97	0.432	75.58 ^{BCDEF}
97	74.33	75.99	75.13	75.34	76.02	74.64	75.39	75.64	0.631	75.57 ^{BCDEF}
5	74.98	75.01	75.52	75.48	75.67	75.01	75.6	73.93	0.473	75.56 ^{BCDEF}
93	74.49	73.66	74.76	75.04	76.16	74.34	74.89	74.62	0.779	75.47 ^{BCDEF}
50	74.13	74.22	74.7	75.46	75.64	74.32	75.35	74.24	0.478	75.43 ^{BCDEF}
88	74.15	74.31	75.6	75.43	76.25	74.76	75.25	74.06	0.808	75.37 ^{BCDEF}
86	74.63	74.03	75.64	75.48	75.6	75.12	75.51	74.74	0.621	75.35 ^{BCDEF}
39	74.38	74.56	75.18	75.11	75.97	74.14	74.77	73.62	0.487	74.79 ^{CDEF}
63 b	73.62	74.7	74.07	74.11	74.27	73.92	73.7	73.48	0.743	74.58 ^{DEF}
87	74.17	75.43	75.9	75.07	75.2	72.68	72.35	72.6	0.906	74.55 ^{EF}
63 a	73.99	74.82	74.34	74.24	74.61	73.42	72.6	73.67	0.884	74.52 ^F
100	72.75	72.74	73.82	74.06	75.08	73.34	74.29	71.8	0.79	74.39 ^F
91	72.48	74.17	72.94	73.73	74.79	71.82	73.51	73.08	0.829	74.1 ^F
48	70.82	72.78	72.1	70.65	72.73	69.72	71.51	70.1	1.059	71.92 ^G
14	62.17	66.77	66.2	64.57	67.65	64.68	63.66	62.84	1.76	64.71 ^H

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 11b Main effects and interactions for % moisture.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39		.0478		.0343	.0356	
40						
43				.0451		
48						
50				.0230		
63.1						
63.2						
69						
79						
86						
87						
88						
91				.0193		
93						
97						
98						
100				.0204	.0434	
108						
110						
111						

Table 12a. Least square subclass¹ means and standard errors for % fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	21.28	15.88	16.38	19.24	14.17	18.66	18.63	21.05	2.241	18.01 ^A
48	9.28	7.49	7.72	10.48	7.54	10.81	9.69	10.64	1.355	8.63 ^B
91	8.14	6.56	7.3	7.29	6.09	9.09	7.66	8.08	1.053	6.65 ^C
87	7.44	6.13	6.25	6.53	5.7	8.24	9.36	8.79	1.135	6.42 ^{CD}
100	8.13	7.28	6.34	7.16	5.28	8.2	6.87	8.81	1.096	6.1 ^{CDE}
63 a	5.66	5.3	5.32	6.06	5.61	7.04	8.3	6.55	1.11	5.52 ^{CDEF}
88	6.32	6.02	4.96	5.94	3.82	6.16	6.08	6.38	0.967	5.34 ^{CDEF}
63 b	5.84	5.79	5.36	6.21	5.45	6.27	5.87	6.26	0.898	5.15 ^{CDEFG}
93	5.49	6.38	5.26	6.72	4.2	6.4	6.36	5.74	0.865	5.07 ^{CDEFG}
43	6.19	4.88	4.97	4.98	4.12	5.87	6.67	6.21	0.832	4.93 ^{CDEFGH}
98	5.96	4.64	4.81	5.29	4.27	5.46	5.67	5.39	0.659	4.71 ^{DEFGH}
39	5.14	4.59	3.79	4.7	3.24	5.57	5.34	5.99	0.565	4.48 ^{EFGHI}
40	6.39	3.87	4.22	4.17	4.02	5.55	4.77	4.44	0.789	4.14 ^{FGHIJ}
110	4.57	4.08	4.75	4.2	3.61	5.04	4.56	4.68	0.587	4.06 ^{FGHIJ}
34	4.29	4	3.78	4.18	3.41	4.37	4.22	4.24	0.403	3.85 ^{FGHIJK}
5	4.19	4.16	3.68	3.99	3.15	4.87	3.94	5.55	0.56	3.73 ^{FGHIJK}
97	4.97	3.55	4.94	4.38	3.14	4.35	4.49	3.57	0.708	3.72 ^{FGHIJK}
108	4.74	3.69	3.31	3.71	3.2	4.31	4.32	3.79	0.533	3.36 ^{GHIJKL}
86	3.77	3.97	2.79	3.61	2.62	3.73	3.58	3.64	0.781	3.11 ^{HIJKL}
37	3.81	2.8	2.92	3.46	2.27	3.89	3.55	3.64	0.435	3.09 ^{HIJKL}
50	3.47	2.99	2.8	3.56	2.5	3.56	3.11	3.92	0.606	2.76 ^{IJKL}
69	2.84	2.91	2.07	3.11	1.74	2.91	2.63	2.94	0.337	2.37 ^{JKL}
111	2.71	2.85	1.93	2.44	2	3	2.47	2.71	0.315	2.27 ^{JKL}
1	2.2	2.24	2.19	2.13	1.54	2.42	1.98	2.1	0.261	1.95 ^{KL}
79	7.8	1.94	1.3	1.94	1.56	2.25	1.89	2.1	0.166	1.77 ^L

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 12b Main effects and interactions for % fat.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5		.0320				
14						
34						
37						
39		.0476			.0275	
40						
43						
48						
50						
63.1						
63.2						
69		.0126				
79		.0016				
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111		.0400				

Table 13a. Least square subclass¹ means and standard errors for % protein.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
50	22.13	22.56	22.56	21.19	21.9	21.54	21.68	21.73	0.408	21.81 ^A
1	21.87	21.24	21.75	21.24	21.8	21.41	21.36	21.79	0.363	21.61 ^{AB}
86	21.73	21.8	21.47	20.78	21.86	20.33	20.79	21.41	0.616	21.55 ^{ABC}
37	21.32	21.89	21.29	20.6	21.85	20.99	21.12	21.19	0.372	21.18 ^{ABCD}
69	21.5	21.25	20.94	20.16	21.49	21.05	21.12	20.64	0.318	21.1 ^{ABCDE}
111	21.1	20.48	20.88	20.36	21.11	20.77	20.57	20.38	0.521	20.83 ^{ABCDEF}
79	20.75	20.88	20.94	20.54	20.92	19.9	20.84	20.38	0.339	20.74 ^{BCDEF}
39	20.4	20.92	20.75	20.06	20.81	19.96	20.34	20.2	0.456	20.65 ^{BCDEF}
97	20.26	20.08	19.71	20.19	20.86	20.78	20.29	20.57	0.359	20.58 ^{CDEF}
5	20.62	20.72	20.45	20.08	20.96	20.13	20.57	20.51	0.494	20.54 ^{DEFG}
34	20.33	21.25	20.38	19.69	21	20.46	20.11	20.29	0.383	20.49 ^{DEFG}
108	20.15	20.33	20.55	20.04	20.79	19.96	19.84	20.19	0.342	20.28 ^{DEFGH}
63 b	20.23	19.77	20.56	19.62	19.67	19.44	20.63	20.03	0.507	20.17 ^{EFGH}
63 a	19.98	20.02	19.8	19.49	20.18	18.94	19.01	19.48	0.442	19.85 ^{FGHI}
93	19.64	19.05	20.07	18.89	19.71	18.78	19.01	18.93	0.5	19.54 ^{GHI}
100	19.56	20.03	19.18	19.03	19.82	18.18	19.33	18.79	0.478	19.54 ^{GHI}
40	18.93	20.23	19.31	19.59	20.01	18.51	18.81	19.29	0.408	19.44 ^{HIJ}
48	19.45	19.71	19.99	18.61	19.65	19.1	19.07	18.62	0.54	19.31 ^{HIJ}
110	18.47	18.95	18.71	19.39	19.28	18.95	18.74	18.55	0.336	19.11 ^{IJ}
91	18.88	19.21	19.41	18.87	19.02	18.58	18.85	18.42	0.401	19.08 ^{IJ}
87	18.34	18.21	19.72	18.7	18.88	18.52	18.63	17.96	0.532	19.07 ^{IJ}
88	19.29	19.53	18.86	18.76	19.84	18.2	18.76	18.8	0.387	19.06 ^{IJ}
98	18.24	18.5	19.36	18.52	18.31	18.08	18.54	18.12	0.45	18.84 ^{IJ}
43	18.41	18.6	19.26	18.43	18.63	18.8	17.94	18.37	0.428	18.46 ^J
14	15.74	17.42	17.73	16.16	18.29	16.61	17.71	15.67	0.692	17.06 ^K

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 13b Main effects and interactions for % protein.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34			.0329			
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69		.0393				
79						
86						
87						
88						
91						
93						
97	.0349					
98						
100						
108						
110						
111						

Table 14a. Least square subclass¹ means and standard errors for % ash.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
69	1.25	1.24	1.02	1.19	1.21	1.11	1	1.08	0.09	1.14 ^A
108	1.09	1.22	1.11	1.17	1.23	1.15	1.04	1.01	0.109	1.12 ^{AB}
50	1.08	1.2	1.07	1.03	1.23	1.14	0.96	1.08	0.092	1.11 ^{AB}
86	1.07	1.2	1.12	1.19	1.21	1.1	0.87	1.07	0.066	1.11 ^{AB}
5	1.03	1.35	1.18	1.05	1.21	1.02	1.01	1.1	0.084	1.1 ^{AB}
1	1.07	1.22	1.12	1.1	1.09	1.16	0.98	1.21	0.07	1.09 ^{AB}
97	1.21	1.1	0.98	1.12	1.16	1	0.96	1.04	0.103	1.09 ^{AB}
37	1.06	1.28	1.11	1.03	1.31	1.19	0.93	1.13	0.094	1.08 ^{AB}
79	1.1	1.25	1.01	1.17	1.18	0.97	0.93	0.9	0.122	1.07 ^{AB}
88	1	1.09	1.16	1.09	1.12	1.05	0.97	1.05	0.088	1.07 ^{AB}
111	1.06	1.19	1.09	1.06	1.26	1.18	0.99	0.99	0.079	1.07 ^{AB}
48	1.1	1.13	1.03	0.99	1.23	0.96	0.86	0.98	0.092	1.06 ^{AB}
63 a	1.09	0.99	1.05	1.12	1.12	1.01	0.86	0.98	0.074	1.05 ^{AB}
100	1.01	1.17	1	1.12	1.15	0.95	0.95	0.97	0.078	1.05 ^{AB}
87	1.01	1.08	0.99	1.18	1.09	0.99	0.88	0.85	0.083	1.04 ^{AB}
91	1.12	1.1	1.04	1.12	1.04	1.08	0.92	0.9	0.12	1.04 ^{AB}
93	1.11	1.12	1.03	0.99	1.15	0.88	0.94	1.01	0.103	1.04 ^{AB}
110	1	1.05	1.05	1.1	1.18	1	0.98	1.02	0.094	1.04 ^{AB}
34	0.96	1.18	1.05	0.93	0.98	1.07	0.95	0.87	0.076	1.03 ^{AB}
39	1.01	1.11	1.11	0.94	1.2	1.37	0.86	0.94	0.142	1.03 ^{AB}
63 b	1.06	1.06	1.07	1.07	1.13	1.07	0.83	0.99	0.08	1.03 ^{AB}
98	1.04	1.15	1.1	1.01	1.12	1.01	1	0.99	0.106	1.03 ^{AB}
43	0.95	1.11	1.12	1.02	1.17	0.93	0.97	0.88	0.078	1 ^{AB}
40	1.04	1.14	1	1.06	1.18	0.96	0.81	1.04	0.081	0.98 ^{AB}
14	0.77	1.02	0.86	0.78	1.07	1	0.67	0.84	0.11	0.86 ^B

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 14b Main effects and interactions for % ash.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1		.0377				
5						
14						
34						
37						
39			.0457			
40						
43						
48			.0462			
50						
63.1						
63.2						
69						
79						
86					.0410	
87						
88						
91						
93						
97						
98						
100						
108						
110						
111			.0328			

Table 15a. Least square subclass¹ means and standard errors for heme pigment content expressed as mg/g.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
110	2.92	2.86	3.72	3.25	2.93	2.96	3.61	3.47	0.455	3.47 ^A
43	2.82	2.66	2.97	2.74	2.65	2.57	3.11	3.04	0.246	2.8 ^B
91	2.44	2.6	2.81	2.57	2.6	3.03	2.64	2.74	0.229	2.68 ^{BC}
98	2.02	2.89	2.55	2.99	2.45	2.8	2.75	2.4	0.275	2.68 ^{BCD}
93	1.85	2.41	2.66	2.1	2.26	2.23	2.5	2.4	0.288	2.52 ^{BCDE}
108	1.83	1.87	2.09	2.38	2.5	2.17	2.77	2.66	0.268	2.41 ^{CDEF}
97	2.01	2.53	2.39	2.28	2.13	2.34	2.59	2.46	0.24	2.27 ^{CDEFG}
87	1.96	2.32	2.24	2.15	2.17	2.24	2.37	2.15	0.133	2.16 ^{DEFGH}
69	1.76	1.62	2.62	1.65	1.81	1.83	1.94	1.93	0.238	1.9 ^{EFGHI}
34	1.9	1.68	1.92	1.71	1.93	2.18	1.96	1.76	0.18	1.83 ^{FGHIJ}
88	1.77	1.42	1.91	1.89	1.53	1.92	1.89	1.64	0.206	1.8 ^{FGHIJ}
63 a	1.16	1.72	1.67	1.33	1.51	2.07	1.65	2.04	0.312	1.73 ^{GHIJ}
40	1.68	1.72	1.58	1.66	1.56	1.59	1.77	1.66	0.162	1.66 ^{HIJ}
79	1.36	1.5	1.46	1.46	1.35	1.55	1.55	1.29	0.198	1.46 ^{IJK}
1	1.36	1.29	1.49	1.28	1.56	1.48	1.38	1.39	0.163	1.42 ^{IJK}
5	1.12	1.43	1.53	1.22	1.28	1.53	1.71	1.64	0.174	1.39 ^{IJK}
48	1.11	1.69	1.55	1.21	1.27	1.61	1.27	1.77	0.157	1.34 ^{JK}
111	1.15	1.52	1.18	0.94	1.3	1.56	1.65	1.37	0.245	1.31 ^{JK}
39	1.11	0.89	1.29	0.98	1.08	1.13	1.22	1.08	0.138	1.07 ^{KL}
63 b	1.02	1.05	1.37	0.89	1.02	1.28	1.16	1.42	0.133	1.07 ^{KL}
37	0.94	0.9	1.02	1	0.97	1.07	1.04	1.08	0.091	1.03 ^{KL}
100	0.87	0.92	0.99	0.92	0.88	0.93	1.04	0.95	0.08	0.96 ^{KL}
86	1	0.86	1.28	0.92	0.92	1	0.97	0.99	0.145	0.95 ^{KL}
14	0.84	1.06	0.87	0.91	1.01	0.81	0.98	0.99	0.07	0.94 ^{KL}
50	0.63	0.92	0.98	0.76	0.75	0.94	0.83	0.78	0.125	0.77 ^L

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 15b Main effects and interactions for heme pigment content.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14				.0185		
34						
37						
39						
40						
43						
48		.0237				
50						.0435
63.1						
63.2					.0163	
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108	.0179					
110						
111						

Table 16a. Least square subclass¹ means and standard errors for collagen content expressed in mg/g.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	21.23	22.53	18.98	20.82	21.17	20.70	19.30	23.58	0.556	21.04 ^A
97	19.52	10.00	17.07	11.24	12.71	16.38	11.79	13.83	1.023	14.07 ^B
43	8.60	15.38	10.98	16.01	11.07	16.95	10.72	13.18	0.977	12.94 ^B
98	9.49	10.46	10.30	9.27	10.59	11.59	10.08	11.06	0.407	10.36 ^C
34	8.82	8.80	8.87	10.63	8.24	10.69	9.81	7.75	0.409	9.21 ^{CD}
40	8.38	8.66	7.88	8.95	8.21	8.93	9.55	9.03	0.319	8.71 ^{CDE}
63 b	8.18	9.69	6.94	10.48	8.11	8.50	8.90	8.23	0.389	8.63 ^{CDEF}
87	8.00	9.06	6.89	8.90	9.99	8.37	8.66	7.84	0.393	8.47 ^{CDEF}
48	8.12	8.42	8.51	9.24	7.69	7.99	8.63	8.64	0.238	8.44 ^{CDEF}
5	7.80	9.41	8.26	6.91	6.99	7.96	9.21	10.65	0.327	8.40 ^{CDEF}
110	7.81	9.25	8.49	6.39	8.35	7.74	8.18	9.75	0.337	8.25 ^{DEF}
108	9.11	9.47	7.43	8.01	7.22	7.46	6.28	7.95	0.385	7.87 ^{DEFG}
63 a	7.63	8.74	7.16	7.82	6.82	7.70	7.90	8.38	0.273	7.77 ^{DEFG}
100	8.02	8.43	7.68	7.09	6.90	7.35	7.48	8.11	0.239	7.64 ^{DEFG}
39	6.83	7.55	6.14	6.97	7.33	6.14	7.93	7.63	0.217	7.07 ^{EFGH}
111	5.89	7.23	5.83	5.68	7.47	6.38	7.32	7.27	0.313	6.63 ^{EFGHI}
91	6.03	6.75	6.35	7.01	5.34	6.74	8.76	5.59	0.359	6.57 ^{FGHI}
88	6.71	6.64	5.68	5.88	6.83	7.03	6.39	7.10	0.189	6.53 ^{FGHI}
79	5.70	8.26	5.27	5.09	6.25	4.82	6.35	6.86	0.292	6.08 ^{GHI}
86	5.47	6.36	6.16	5.51	5.49	6.30	6.54	6.31	0.192	6.02 ^{GHIJ}
37	4.90	7.76	5.18	5.43	5.36	5.96	6.09	6.33	0.271	5.88 ^{GHIJ}
93	4.55	5.42	4.63	4.69	5.39	5.06	5.76	4.81	0.141	5.04 ^{HIJK}
1	4.75	4.97	4.65	4.38	4.51	4.57	5.17	4.81	0.131	4.72 ^{IJK}
50	3.63	3.86	3.39	4.01	3.58	4.01	3.91	5.02	0.114	3.96 ^{JK}
69	3.18	3.31	3.44	3.31	3.39	3.38	3.44	3.32	0.082	3.35 ^K

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 16b Main effects and interactions for collagen content.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1					.0005	.0010
5		.0146			.0006	<.0001
14					.0016	<.0001
34	.0192					<.0001
37						
39						.0067
40		.0144				
43						.0139
48	.0143		.0220	.0281	.0233	<.0001
50		.0059			.0006	.0010
63.1						
63.2	.0070				.0303	<.0001
69		.0304			.0020	
79					.0153	
86						
87	.0122					
88						
91	.0255					.0035
93					.0018	.0002
97					.0346	
98						.0095
100						
108						
110						.0394
111						.0038

Table 17a. Least square subclass¹ means and standard errors for water holding capacity expressed as % water loss.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
37	9.23	6.22	10.21	9.11	6.18	9.73	7.36	3.89	2.122	7.18 ^A
5	9.24	6.22	10.21	9.11	6.18	9.73	7.36	3.89	2.122	7.02 ^A
88	9.54	8.65	10.86	6.85	8.56	9.77	7.51	4.12	2.321	6.99 ^A
86	9.64	8.25	10.69	8.11	7.59	10.36	5.36	5.29	2.372	6.44 ^{AB}
39	6.56	6.69	7.97	8.01	4.15	8.76	5.63	4.97	2.103	6.12 ^{AB}
50	9.02	7.25	10.33	7.5	7.31	10.85	4.21	5.23	2.423	5.88 ^{AB}
1	6.42	6.01	7.05	4.93	5.47	8.05	5.21	1.98	2.282	5.24 ^{AB}
69	8.54	5.03	8.16	5.09	4.81	9.96	3.11	2.57	2.796	5.2 ^{AB}
91	5.62	5.25	9.25	7.21	3.58	7.71	4.87	2.45	2.382	5.11 ^{AB}
63 a	6	4.44	8.44	6.09	4.57	9.38	5.51	2.24	2.19	4.8 ^{AB}
111	7.41	5.08	7.07	6.15	6.3	9.93	4.13	2.22	2.378	4.76 ^{AB}
110	4.04	5.56	4.06	5.34	3.46	5.02	3.09	3.54	1.392	4.08 ^{AB}
63 b	4.67	4.06	8.48	4.8	3.87	8.55	2.85	2.08	2.227	4.01 ^{AB}
108	4.83	3.75	6.18	5.42	2.92	6.33	4.46	2.27	1.65	3.81 ^{AB}
48	5.49	3.34	5.45	4.72	4.84	7.47	3.47	1.21	1.827	3.74 ^{AB}
98	4.48	7.52	6.54	3.64	4.89	6.52	3.77	3.68	1.44	3.72 ^{AB}
34	4.79	5.11	6.57	5.02	3.44	6.92	2.69	2.41	1.972	3.68 ^{AB}
14	4.93	2.8	5.07	4.89	1.96	5.08	4.06	2.18	1.304	3.63 ^{AB}
43	2.23	5.6	3.51	5.06	3.21	5.18	2.64	2.22	1.212	3.45 ^{AB}
97	3.61	5.1	5.56	3.37	2.23	6.44	2.85	2.98	1.224	3.41 ^{AB}
40	1.52	1.69	3.64	1.6	1.95	6.13	3.57	1.47	1.688	3.23 ^{AB}
79	3.01	3.86	4.37	3.99	5.24	8.98	2.32	1.75	1.772	3.2 ^{AB}
87	5.01	1.8	4.01	2.59	2.33	5.94	1.59	1.56	0.734	3.02 ^{AB}
100	3.91	1.56	9.02	2.99	3.22	6.92	2.33	1.54	2.04	2.99 ^{AB}
93	2.36	2.07	2.29	3.75	1.68	6.7	2.3	1.08	0.976	2.37 ^B

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 17b Main effects and interactions for water holding capacity.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79					.0291	
86						
87			.0183			
88						
91						
93					.0371	
97						.0346
98						
100					.0370	
108						
110						
111						

Table 18a. Least square subclass¹ means and standard errors for total extractable protein.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	0.26	0.18	0.15	0.21	0.15	0.24	0.22	0.18	0.03	0.2 ^A
39	0.18	0.18	0.17	0.17	0.18	0.23	0.18	0.18	0.023	0.17 ^{AB}
63 b	0.24	0.17	0.17	0.14	0.16	0.21	0.18	0.2	0.029	0.17 ^{ABC}
5	0.24	0.21	0.15	0.17	0.15	0.18	0.17	0.21	0.031	0.16 ^{ABCD}
37	0.21	0.16	0.15	0.16	0.18	0.21	0.16	0.2	0.03	0.16 ^{ABCDE}
50	0.15	0.16	0.16	0.16	0.16	0.18	0.17	0.19	0.027	0.16 ^{ABCDE}
86	0.21	0.17	0.16	0.13	0.17	0.22	0.18	0.2	0.027	0.16 ^{ABCDE}
48	0.19	0.16	0.13	0.17	0.14	0.22	0.14	0.16	0.029	0.15 ^{ABCDE}
63 a	0.18	0.13	0.15	0.18	0.14	0.19	0.15	0.17	0.026	0.15 ^{ABCDE}
111	0.21	0.19	0.17	0.16	0.17	0.19	0.14	0.15	0.023	0.15 ^{ABCDEF}
88	0.19	0.14	0.12	0.14	0.17	0.19	0.16	0.15	0.028	0.14 ^{ABCDEFG}
108	0.15	0.14	0.17	0.15	0.15	0.18	0.14	0.15	0.028	0.14 ^{ABCDEFG}
34	0.18	0.13	0.12	0.15	0.16	0.19	0.15	0.16	0.027	0.13 ^{ABCDEFGH}
91	0.15	0.12	0.15	0.11	0.13	0.13	0.14	0.15	0.023	0.12 ^{BCDEFGH}
110	0.13	0.14	0.14	0.13	0.09	0.14	0.1	0.11	0.023	0.12 ^{BCDEFGH}
40	0.14	0.1	0.11	0.11	0.07	0.15	0.12	0.08	0.029	0.11 ^{BCDEFGH}
43	0.13	0.12	0.1	0.14	0.09	0.15	0.11	0.1	0.021	0.11 ^{CDEFGHI}
98	0.14	0.13	0.11	0.13	0.11	0.15	0.13	0.13	0.022	0.11 ^{CDEFGHI}
1	0.14	0.11	0.09	0.13	0.13	0.1	0.11	0.14	0.028	0.1 ^{DEFGHI}
79	0.15	0.13	0.09	0.11	0.1	0.18	0.08	0.1	0.021	0.1 ^{DEFGHI}
100	0.13	0.12	0.09	0.11	0.13	0.11	0.09	0.1	0.02	0.1 ^{EFGHI}
87	0.15	0.12	0.08	0.07	0.09	0.1	0.08	0.1	0.024	0.08 ^{FGHI}
93	0.12	0.09	0.08	0.12	0.09	0.12	0.06	0.07	0.026	0.08 ^{GHI}
69	0.11	0.07	0.08	0.08	0.1	0.12	0.06	0.11	0.028	0.07 ^{HI}
97	0.05	0.08	0.07	0.05	0.07	0.04	0.04	0.04	0.013	0.05 ^I

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 18b Main effects and interactions for extractable protein.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5					.0442	
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79			.0052			
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 19a. Least square subclass¹ means and standard errors for protein gel hardness expressed as grams of force.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
50	24.71	23.19	28.07	24.05	23.16	24.28	26.7	24.08	0.935	24.78 ^A
14	23.29	24.62	23.11	23.34	20.14	26.11	28.75	25.54	0.956	24.36 ^A
34	25.04	23.69	23.35	23.86	21.11	23.96	25.07	18.5	0.945	23.07 ^{AB}
39	24.72	25.19	21.22	22	20.39	22.76	26.52	20.28	0.899	22.89 ^{AB}
69	23.46	22.5	21.43	22.4	23.62	24.74	23.77	19.59	0.852	22.69 ^{AB}
108	24.35	21.13	23.98	22.71	21.32	22.81	25.61	18.19	0.961	22.51 ^{AB}
79	24.38	26.97	20.63	23.14	23.22	22.64	19.16	16.96	0.973	22.14 ^{AB}
93	20.85	21.9	25.18	21.63	20.54	22.33	23.01	21.5	0.902	22.12 ^{AB}
43	21.47	22.73	21.67	21.8	19.44	22.98	23.18	22.47	0.907	21.97 ^{AB}
97	29.80	21.15	23.52	22.07	17.34	21.47	21.84	18.45	0.935	21.96 ^{AB}
86	23.54	25.22	20.89	20.73	21.42	23.01	23.6	17.03	0.924	21.93 ^{AB}
110	21.80	23.1	22.13	22.24	20.96	22.56	23.36	17.83	0.894	21.75 ^{AB}
87	24.02	20.09	25.24	19.31	19.65	24.33	22.46	18.53	0.906	21.70 ^{AB}
111	23.05	23.08	23.88	22.85	25.39	22.14	17.96	14.89	0.877	21.66 ^{AB}
37	26.20	20.69	22.96	20.04	21.72	22.79	21.17	16.47	0.863	21.51 ^{AB}
91	23.25	21.15	23.13	20.86	19.31	22.42	22.96	18.74	0.951	21.48 ^{AB}
48	25.60	19.64	21.64	22.32	18	22.99	25.3	15.02	0.921	21.31 ^{AB}
40	24.62	22.57	20.37	22.78	19.42	22.01	21.16	16.9	0.919	21.23 ^{AB}
88	24.80	20.73	21.97	20.35	18.65	23.4	21	15.91	0.914	20.85 ^{AB}
5	23.16	22.23	23.26	20.14	20.13	21.6	20.52	14.72	0.923	20.72 ^{AB}
63 a	23.69	19.08	21.39	22.03	20.88	21.62	22.23	14.32	0.918	20.66 ^{AB}
98	19.43	22.53	21.82	23.03	15.34	21.54	21.03	20.29	0.908	20.63 ^{AB}
100	25.47	22.21	20.8	18.14	20.37	21.27	14.77	13.31	0.969	19.54 ^B
1	22.22	16.73	20.47	21.23	18.18	19.17	19.88	15.09	0.901	19.12 ^B
63 b	22.87	18.69	17.58	16.28	19.38	23.28	20.53	14.2	0.877	19.10 ^B

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 19b Main effects and interactions for protein gel hardness.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79					.0455	
86						
87						.0437
88						
91						
93						
97	.0282					
98						
100						
108						
110						
111						

Table 20a. Least square subclass¹ means and standard errors for protein gel elasticity(ratio of area 1: area 2 of two compression sequence).

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
98	0.33	0.35	0.41	0.38	1.1	0.36	0.33	0.38	0.276	0.53 ^A
88	0.32	0.3	0.39	0.66	0.46	0.43	0.32	0.73	0.153	0.52 ^A
86	0.32	0.38	0.51	0.38	0.66	0.34	0.41	0.43	0.128	0.46 ^A
100	0.29	0.31	0.23	0.47	0.43	0.36	0.55	0.58	0.085	0.46 ^A
108	0.36	0.44	0.45	0.38	0.4	0.34	0.61	0.54	0.119	0.46 ^A
40	0.35	0.34	0.36	0.34	0.5	0.4	0.4	0.5	0.07	0.44 ^A
48	0.36	0.35	0.41	0.38	0.39	0.37	0.44	0.81	0.091	0.44 ^A
1	0.3	0.41	0.49	0.45	0.38	0.43	0.41	0.21	0.099	0.43 ^A
63 b	0.33	0.34	0.44	0.48	0.27	0.28	0.46	0.28	0.092	0.4 ^A
87	0.4	0.55	0.32	0.49	0.35	0.35	0.43	0.37	0.08	0.4 ^A
91	0.38	0.31	0.39	0.41	0.36	0.4	0.28	0.38	0.053	0.4 ^A
39	0.31	0.32	0.4	0.35	0.48	0.37	0.33	43	0.063	0.39 ^A
63 a	0.3	0.4	0.52	0.43	0.27	0.44	0.35	0.33	0.093	0.38 ^A
79	0.38	0.33	0.3	0.34	0.27	0.33	0.47	0.58	0.07	0.38 ^A
97	0.43	0.34	0.34	0.32	0.38	0.33	0.28	0.44	0.065	0.38 ^A
110	0.41	0.43	0.41	0.36	0.34	0.34	0.36	0.44	0.07	0.38 ^A
43	0.36	0.35	0.39	0.37	0.39	0.36	0.34	0.4	0.043	0.37 ^A
111	0.34	0.35	0.35	0.32	0.33	0.38	0.45	0.4	0.075	0.37 ^A
5	0.31	0.31	0.34	0.28	0.38	0.43	0.45	0.27	0.056	0.36 ^A
34	0.34	0.31	0.38	0.33	0.47	0.34	0.32	0.33	0.047	0.36 ^A
93	0.4	0.32	0.38	0.34	0.33	0.35	0.33	0.43	0.043	0.35 ^A
69	0.33	0.36	0.45	0.33	0.39	0.34	0.27	0.41	0.059	0.34 ^A
14	0.34	0.33	0.3	0.34	0.32	0.34	0.28	0.35	0.015	0.33 ^A
37	0.32	0.38	0.25	0.29	0.33	0.44	0.38	0.34	0.056	0.33 ^A
50	0.33	0.32	0.29	0.33	0.33	0.34	0.31	0.35	0.018	0.33 ^A

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 20b Main effects and interactions for protein gel elasticity.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						.0390
34						
37						
39						
40						
43						
48			.0417			
50						
63.1						
63.2						
69						
79					.0131	
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 21a. Least square subclass¹ means and standard errors for % total fat by chloroform/methanol.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	21.17	18.99	17.08	19.43	12.31	19.07	17.98	16.26	3.501	17.43 ^A
48	10.06	8.21	9.3	13	9	10.95	10.54	8.84	1.319	10.42 ^B
91	8.42	6.46	7.27	10.47	6.48	9.06	7.87	9.19	1.049	8.29 ^{BC}
100	8.02	7.64	7.28	9.85	6.21	9.29	6.28	9.24	1.177	7.67 ^{BCD}
88	6.61	6.46	5.31	8.61	4.5	6.87	7.17	7.22	0.889	6.98 ^{CDE}
63 a	6.43	6.94	5.78	6.78	6.14	8.18	7.92	7.02	0.997	6.74 ^{CDE}
63 b	6.3	5.33	5.37	8.64	6.76	7.1	6.92	6.52	0.829	6.67 ^{CDE}
43	6.53	5.02	5.89	7.81	5.21	6.56	7.22	7.02	0.725	6.62 ^{CDEF}
93	5.6	6.4	6.1	8.22	6.24	8.28	6.71	6.53	0.985	6.08 ^{CDEFG}
98	5.76	4.04	4.73	6.51	4.52	6.1	6.44	6.14	0.562	5.78 ^{CDEFG}
87	7.53	6.74	5.4	7.09	7.19	6.53	7.15	6.16	1.33	5.68 ^{CDEFGH}
39	6.07	4.46	4.28	6.58	3.68	6.27	5.34	5.82	0.756	5.58 ^{CDEFGH}
34	3.92	4.92	4.46	7.05	7.02	4.78	5.28	4.59	0.748	5.44 ^{CDEFGH}
110	5.03	4.29	5.62	6.7	3.32	5.6	5	5.95	0.617	5.39 ^{CDEFGH}
5	4.18	4.42	4.97	6.86	4.32	6.36	4.56	6.23	0.704	5.35 ^{CDEFGH}
40	6.01	4.27	4.86	6.69	4.06	5.98	5.07	5.4	0.795	5.28 ^{DEFGH}
108	4.81	3.98	3.95	5.75	4.09	4.84	4.46	5.67	0.473	4.7 ^{EFGH}
86	4.11	4.49	3.35	3.91	4.76	4.45	3.91	4.3	0.694	4.36 ^{EFGH}
37	4.25	2.93	3.15	4.91	2.58	4.54	3.9	4.39	0.571	4.12 ^{EFGH}
50	3.88	3	3.51	4.63	2.69	4.35	3.38	4.82	0.602	3.68 ^{FGH}
69	3.68	3.35	2.87	5.08	2.6	3.75	2.76	3.55	0.34	3.61 ^{GH}
111	3.39	3.12	2.3	4.42	2.88	3.41	3.29	3.43	0.42	3.6 ^{GH}
97	4	3.99	4.45	4.61	4.15	3.82	3.2	3.58	0.827	3.57 ^{GH}
1	2.86	2.35	2.69	3.73	2.16	3.24	3.47	2.84	0.434	3.31 ^{GH}
79	2.47	2.14	1.71	3.24	1.95	2.6	2.35	2.74	0.321	2.78 ^H

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 21b Main effects and interactions for total fat by chloroform/methanol.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5		.0072				
14						
34						
37						
39						
40						
43			.0293			
48						
50						
63.1						
63.2						
69		.0006				.0331
79		.0214				
86						
87						
88		.0370				
91						
93						
97						
98			.0431			
100		.0327				
108		.0382				.0301
110			.0083			
111						

Table 22a. Least square subclass¹ means and standard errors for myristic acid(C14:0) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	1.69	1.58	1.45	1.32	1.37	1.38	1.55	1.31	0.112	1.41 ^A
48	1.44	1.46	1.41	1.39	1.34	1.47	1.44	1.36	0.116	1.39 ^{AB}
91	1.49	1.47	1.33	1.28	1.38	1.44	1.45	1.4	0.095	1.33 ^{ABC}
100	1.44	1.54	1.39	1.31	1.17	1.52	1.38	1.41	0.103	1.29 ^{ABCD}
63 b	1.45	1.44	1.28	1.26	1.31	1.3	1.37	1.3	0.09	1.26 ^{ABCDE}
63 a	1.4	1.55	1.31	1.22	1.25	1.36	1.39	1.25	0.091	1.24 ^{ABCDE}
88	1.39	1.4	1.23	1.17	1.29	1.31	1.36	1.35	0.114	1.24 ^{ABCDE}
93	1.37	1.34	1.18	1.25	1.26	1.5	1.45	1.36	0.126	1.23 ^{ABCDE}
87	1.43	1.53	1.24	1.89	1.18	1.3	1.32	1.32	0.126	1.19 ^{ABCDEF}
39	1.38	1.48	1.24	1.22	1.15	1.21	1.32	1.23	0.1	1.18 ^{ABCDEF}
40	1.36	1.51	1.31	1.08	1.25	1.26	1.36	1.29	0.108	1.18 ^{ABCDEF}
34	1.28	1.39	1.27	1.17	1.32	1.23	1.28	1.84	0.102	1.17 ^{ABCDEF}
110	1.28	1.3	1.36	1.21	1.07	1.17	1.33	1.25	0.117	1.17 ^{ABCDEF}
43	1.19	1.42	1.22	1.13	1.15	1.26	1.35	1.04	0.117	1.16 ^{BCDEF}
86	1.31	1.4	1.21	1.1	1.27	1.26	1.27	1.25	0.112	1.16 ^{BCDEF}
98	1.24	1.23	1.16	1.16	1.11	1.22	1.25	1.26	0.084	1.14 ^{BCDEF}
5	1.24	1.54	1.32	1.18	1.1	1.32	1.22	1.44	0.165	1.13 ^{CDEF}
37	1.25	1.18	1.22	1.18	1.11	1.31	1.18	1.28	0.125	1.13 ^{CDEF}
50	1.23	1.38	1.25	1.16	1.23	1.35	1.34	0.98	0.153	1.13 ^{CDEF}
108	1.25	1.25	1.11	1.11	1.14	1.18	1.12	1.14	0.101	1.07 ^{DEFG}
69	1.25	1.36	1.04	1.11	1.13	1.2	1.14	1.16	0.125	1.04 ^{EFG}
1	1.16	1.21	1.11	0.98	0.99	1.12	1.09	1.06	0.118	0.95 ^{FG}
111	1.11	1.31	1.19	0.96	0.9	1.01	1.1	1.06	0.11	0.95 ^{FG}
97	1.08	1.25	1.13	0.93	1.02	1	0.89	1.06	0.144	0.84 ^G
79	1.04	1.22	1	0.86	0.82	0.88	0.9	0.94	0.099	0.82 ^G

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 22b Main effects and interactions for % myristic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39					.0482	
40						
43						.0303
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 23a. Least square subclass¹ means and standard errors for palmitic acid(C16:0) as a % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
48	22.86	23.44	21.66	23.17	21.91	22.76	22.56	22.2	0.783	22.33 ^A
100	22.87	22.43	21.37	22.93	20.67	17.23	22.54	22.16	1.771	22.03 ^{AB}
14	22.95	22.29	21.07	32.13	20.33	21.47	22.58	20.95	0.663	21.87 ^{AB}
91	23.37	22.76	20.73	22.07	21.68	22.52	22.97	22.41	0.769	21.87 ^{AB}
40	23.02	22.83	21.61	22.15	21.65	22.32	22.55	22.18	0.744	21.81 ^{AB}
50	21.89	22.27	21.21	22.57	21.64	23.09	23.73	22.29	0.999	21.79 ^{AB}
88	22.86	22.26	19.87	22.39	21.49	21.91	22.26	21.89	0.814	21.72 ^{ABC}
93	23.02	21.75	20.22	22.71	21.38	23.36	22.94	22.15	0.954	21.72 ^{ABC}
87	23.28	23.4	20.66	22.13	21.09	22.68	22.46	22.03	0.895	21.7 ^{ABC}
39	22.63	22.7	20.74	22.38	21.19	20.18	21.96	21.07	0.696	21.38 ^{ABC}
43	21.51	22.52	20.97	22.05	20.73	21.68	22.2	21.13	0.644	21.27 ^{ABC}
63 a	22.73	22.77	20.87	21.93	20.97	22.07	21.65	20.72	0.759	21.22 ^{ABC}
63 b	22.67	22.45	20.49	21.63	21.19	20.96	21.93	21.86	0.826	21.04 ^{ABC}
37	21.57	21.64	20.71	21.83	20.98	21.89	20.99	21.31	0.785	20.97 ^{ABC}
86	21.66	21.83	20.66	20.79	20.89	21.4	21.54	21.33	0.708	20.735 ^{ABC}
69	21.84	22.32	20.91	21.43	22.53	21.98	2.12	21.07	0.967	20.73 ^{ABC}
111	21.06	21.7	20.29	21.67	20.3	21.3	21.07	20.92	0.638	20.7 ^{ABC}
97	21.83	21.87	20.48	21.31	20.57	22.08	20.16	20.56	0.698	20.53 ^{ABC}
98	21.78	21.35	20	21.17	20.53	21.13	21.38	20.95	0.764	20.53 ^{ABC}
34	21.51	21.31	20.44	20.89	21.81	21.24	21.03	20.66	0.649	20.5 ^{ABC}
110	21.22	21.19	19.73	21.77	20.03	20.89	21.36	21.02	0.913	20.49 ^{ABC}
5	21.28	21.46	20.89	21.35	19.97	21.66	21.37	23.87	1.478	20.46 ^{BC}
108	21.75	21.25	19.9	21.38	20.66	20.84	20.53	20.4	0.632	20.45 ^{BC}
79	20.73	22.92	15.45	21	20.42	20.98	20.26	20.62	1.695	20.3 ^{BC}
1	21.23	21.1	20.02	20.73	20.31	20.83	20.64	19.79	0.694	19.86 ^C

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 23b Main effects and interactions for % palmitic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14	.0466					
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91					.0488	
93						
97						
98						
100						
108						
110						
111						

Table 24a. Least square subclass¹ means and standard errors for palmitoleic acid(C16:1) as % of total fat..

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	3.2	3.24	3.1	3.53	3.18	3.29	3.78	2.99	0.321	3.27 ^A
5	2.7	3.14	2.82	3.25	2.46	2.87	2.96	3.32	0.301	2.94 ^{AB}
86	2.94	2.89	2.67	3.13	2.59	2.8	2.82	2.95	0.207	2.87 ^{ABC}
88	2.95	2.67	2.52	3.17	2.5	2.92	2.92	2.9	0.299	2.81 ^{ABCD}
100	2.93	3.09	2.78	3.26	2.33	2.52	2.97	3.01	0.362	2.81 ^{ABCD}
40	2.76	2.89	2.71	3.08	2.36	2.64	3.01	2.79	0.259	2.8 ^{ABCD}
34	2.6	2.79	2.66	3.22	2.65	2.68	2.88	2.71	0.265	2.76 ^{BCD}
110	2.64	2.67	2.75	3.21	2.38	2.53	3.06	2.69	0.274	2.74 ^{BCDE}
63 b	2.63	2.62	2.53	3.18	2.44	3.01	2.85	2.59	0.284	2.73 ^{BCDE}
43	2.37	2.9	2.51	2.98	2.29	2.76	3.11	2.67	0.218	2.71 ^{BCDE}
50	2.43	2.76	2.53	3.22	2.27	2.74	3.12	2.62	0.253	2.71 ^{BCDE}
108	2.68	2.73	2.45	3.12	2.39	2.78	2.68	2.69	0.227	2.69 ^{BCDE}
39	2.6	2.78	2.55	3.06	2.46	2.54	2.75	2.63	0.266	2.67 ^{BCDEF}
48	2.59	2.69	2.51	3.25	2.22	2.75	2.72	2.6	0.26	2.66 ^{BCDEF}
63 a	2.57	2.74	2.55	3.11	2.31	2.65	2.84	2.53	0.233	2.66 ^{BCDEF}
91	2.58	2.68	2.36	3.02	2.33	2.71	2.82	2.52	0.204	2.62 ^{BCDEF}
37	2.42	2.38	2.5	3.11	2.31	2.61	2.68	2.82	0.291	2.6 ^{BCDEF}
98	2.51	2.52	2.38	3	2.23	2.6	2.72	2.56	0.206	2.56 ^{BCDEF}
1	2.51	2.75	2.48	2.77	2.31	2.58	2.61	2.36	0.271	2.54 ^{BCDEF}
93	2.42	2.45	2.11	2.83	2.15	2.62	2.71	2.33	0.203	2.47 ^{BCDEF}
111	2.47	2.69	2.29	2.83	1.99	2.48	2.62	2.34	0.23	2.46 ^{CDEF}
87	2.34	2.61	2.31	2.78	2.01	2.53	2.57	2.29	0.236	2.39 ^{DEF}
69	2.1	2.46	1.96	2.58	2.21	2.37	2.27	2.18	0.252	2.26 ^{EF}
79	2.17	2.64	1.64	2.55	1.9	2.14	2.4	2.18	0.304	2.2 ^F
97	2.33	2.44	2.11	2.51	1.96	2.11	2.01	2.18	0.258	2.2 ^F

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 24b Main effects and interactions for % palmitoleic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 25a. Least square subclass¹ means and standard errors for margaric acid(C17:0) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
63 b	0.32	0.29	0.29	0.4	0.33	1.14	0.32	0.3	0.325	0.56 ^A
98	0.35	0.33	0.44	0.39	0.33	0.26	0.31	0.31	0.067	0.38 ^{AB}
110	0.35	0.32	0.47	0.35	0.31	0.29	0.33	0.31	0.071	0.37 ^{AB}
69	0.4	0.32	0.34	0.43	0.35	0.26	0.34	0.33	0.04	0.36 ^{AB}
1	0.42	0.28	0.3	0.35	0.32	0.26	0.33	0.32	0.033	0.35 ^{AB}
79	0.42	0.33	0.32	0.35	0.36	0.28	0.33	0.35	0.031	0.35 ^{AB}
97	0.37	0.3	0.3	0.37	0.32	0.27	0.32	0.32	0.034	0.35 ^{AB}
34	0.33	0.29	0.29	0.35	0.33	0.25	0.31	0.28	0.03	0.33 ^{AB}
108	0.33	0.29	0.3	0.35	0.32	0.24	0.31	0.3	0.028	0.33 ^{AB}
111	0.36	0.29	0.28	0.32	0.36	0.24	0.32	0.33	0.033	0.33 ^{AB}
37	0.36	0.32	0.29	0.33	0.32	0.25	0.3	0.28	0.031	0.32 ^{AB}
86	0.3	0.27	0.28	0.34	0.34	0.24	0.33	0.27	0.038	0.32 ^{AB}
5	0.31	0.47	0.26	0.35	0.29	0.24	0.29	0.3	0.082	0.31 ^{AB}
43	0.33	0.27	0.28	0.29	0.33	0.24	0.28	0.29	0.031	0.31 ^{AB}
63 a	0.29	0.28	0.28	0.32	0.33	0.24	0.32	0.3	0.03	0.31 ^{AB}
91	0.26	0.28	0.28	0.37	0.33	0.25	0.29	0.32	0.042	0.31 ^{AB}
39	0.33	0.27	0.27	0.31	0.29	0.25	0.29	0.28	0.026	0.3 ^B
40	0.29	0.28	0.25	0.32	0.3	0.23	0.29	0.27	0.029	0.3 ^B
48	0.29	0.31	0.28	0.29	0.38	0.24	0.3	0.28	0.029	0.3 ^B
87	0.31	0.28	0.31	0.31	0.32	0.24	0.3	0.3	0.028	0.3 ^B
14	0.29	0.24	0.25	0.35	0.33	0.19	0.27	0.26	0.031	0.29 ^B
88	0.27	0.28	0.25	0.32	0.3	0.22	0.28	0.25	0.033	0.29 ^B
93	0.32	0.29	0.31	0.3	0.23	0.25	0.37	0.3	0.043	0.29 ^B
100	0.29	0.27	0.29	0.32	0.31	0.22	0.29	0.29	0.031	0.29 ^B
50	0.33	0.27	0.28	0.28	0.28	0.22	0.25	0.23	0.034	0.28 ^B

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 25b Main effects and interactions for margaric acid

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						.0183
5						
14						.0078
34						
37						
39						
40						
43						
48				.0176		
50						
63.1						
63.2						
69						.0348
79						.0189
86						
87						
88						
91						
93						
97						
98						
100						
108						.0448
110						
111						.0191

Table 26a. Least square subclass¹ means and standard errors for margaric acid(C17:1) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
63 b	0.28	0.25	0.26	0.42	0.3	0.92	0.27	0.22	0.259	0.48 ^A
98	0.29	0.2	0.38	0.41	0.27	0.2	0.26	0.24	0.062	0.32 ^{AB}
110	0.3	0.22	0.4	0.32	0.25	0.2	0.28	0.24	0.061	0.31 ^{AB}
14	0.34	0.25	0.29	0.34	0.33	0.2	0.27	0.25	0.039	0.29 ^{AB}
34	0.3	0.25	0.25	0.35	0.29	0.21	0.27	0.23	0.022	0.29 ^{AB}
5	0.28	0.48	0.26	0.36	0.26	0.22	0.26	0.26	0.091	0.28 ^{AB}
48	0.27	0.23	0.27	0.31	0.28	0.21	0.26	0.23	0.027	0.27 ^B
63 a	0.24	0.24	0.26	0.31	0.29	0.2	0.28	0.24	0.03	0.27 ^B
69	0.27	0.25	0.22	0.4	0.25	0.19	0.23	0.22	0.039	0.27 ^B
86	0.27	0.23	0.25	0.32	0.3	0.2	0.26	0.23	0.028	0.27 ^B
91	0.24	0.21	0.24	0.38	0.27	0.2	0.25	0.26	0.042	0.27 ^B
100	0.28	0.23	0.29	0.33	0.28	0.21	0.25	0.27	0.031	0.27 ^B
108	0.29	0.23	0.24	0.34	0.29	0.2	0.26	0.24	0.027	0.27 ^B
37	0.28	0.23	0.24	0.3	0.26	0.2	2.4	2.3	0.022	0.26 ^B
43	0.25	0.22	0.25	0.28	0.26	0.2	0.29	0.22	0.033	0.26 ^B
88	0.25	0.23	0.23	0.31	0.27	0.2	0.25	0.23	0.028	0.26 ^B
1	0.3	0.25	0.25	0.3	0.23	0.2	0.23	0.22	0.029	0.25 ^B
39	0.29	0.23	0.24	0.31	0.25	0.21	0.24	0.22	0.024	0.25 ^B
40	0.25	0.22	0.23	0.31	0.23	0.19	0.25	0.22	0.025	0.25 ^B
79	0.26	0.23	0.23	0.28	0.23	0.16	0.23	0.22	0.024	0.24 ^B
111	0.29	0.23	0.23	0.28	0.25	0.18	0.26	0.23	0.025	0.24 ^B
93	0.25	0.22	0.23	0.27	0.24	0.19	0.21	0.22	0.029	0.23 ^B
97	0.27	0.22	0.24	0.31	0.23	0.17	0.2	0.22	0.034	0.23 ^B
50	0.25	0.21	0.21	0.25	0.21	0.18	0.21	0.2	0.025	0.21 ^B
87	0.24	0.22	0.26	0.25	0.24	0.17	0.22	0.19	0.027	0.21 ^B

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 26b Main effects and interactions for margaric(17:1) acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1	.0176					
5						
14						.0467
34	.0271			.0117		.0049
37						.0153
39						.0292
40						
43						
48						
50						
63.1						
63.2						
69	.0312			.0373		.0205
79	.0266					.0475
86				.0463		.0335
87						
88						
91						
93						
97	.0273					.0440
98						
100						
108						.0092
110						
111						

Table 27a. Least square subclass¹ means and standard errors for stearic acid(C18:0) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
87	14.35	13.94	12.31	12.53	13.45	12.9	14.42	13.07	0.772	13.79 ^A
97	12.88	12.41	11.93	12.04	13.07	12.05	13.52	12.08	0.611	12.86 ^{AB}
93	13.71	12.84	12.56	12.21	12.89	12.44	13.26	12.4	0.623	12.68 ^{ABC}
91	13.46	13.01	11.7	11.65	12.44	12.05	13.31	12.37	0.608	12.21 ^{ABCD}
50	13.22	12.7	11.96	11.69	12.55	12.03	9.79	12.07	1.062	12.2 ^{ABCD}
69	13.17	12.72	12.44	11.64	13.51	11.86	12.84	11.77	0.7	12.1 ^{ABCD}
98	12.67	12.5	11.73	11.39	12.11	11.54	12.48	11.57	0.503	11.85 ^{BCDE}
79	12.03	12.95	12.45	11.33	12.08	11.34	12.15	11.73	0.63	11.72 ^{BCDE}
43	12.98	12.11	11.41	11.48	11.95	11.23	11.99	11.01	0.572	11.65 ^{BCDE}
48	12.94	12.8	11.29	11.12	12.46	11.37	12.77	11.31	0.687	11.65 ^{BCDE}
40	12.46	12.09	11.21	11	12.26	11.17	12.17	11.32	0.549	11.63 ^{BCDE}
111	11.83	11.72	11.29	11.15	12.52	10.76	11.93	11.47	0.575	11.63 ^{BCDE}
37	13	12.17	11.16	11.2	11.89	11.23	11.97	11.08	0.561	11.62 ^{BCDE}
39	12.54	12.27	11.2	11.29	11.64	10.5	12.33	11.3	0.645	11.6 ^{BCDE}
1	11.96	11.5	10.92	11.16	11.64	10.75	11.73	11.45	0.484	11.46 ^{CDE}
63 a	12.74	12.43	11.11	11.22	11.69	11.28	12.08	11.26	0.652	11.43 ^{CDE}
110	12.03	12.5	10.94	10.97	11.82	11.36	11.68	11.05	0.622	11.38 ^{CDE}
88	12.12	12.15	10.36	11.4	11.5	10.78	12.07	10.78	0.687	11.36 ^{CDE}
63 b	12.55	12.55	11.39	10.87	11.38	10.77	12.41	11.82	0.651	11.35 ^{DE}
100	12.18	11.14	10.84	10.82	11.35	11.45	12.26	10.85	0.623	11.28 ^{DE}
108	11.98	11.85	11.3	10.92	11.26	10.88	11.92	10.82	0.549	11.25 ^{DE}
5	11.94	11.66	10.67	10.81	11.17	10.66	11.85	8.2	0.885	11.08 ^{DE}
86	11.54	11.74	10.94	10.55	10.83	10.88	11.82	10.69	0.503	11.05 ^{DE}
34	11.76	11.26	10.85	10.48	11.38	10.61	11.44	10.84	0.518	10.98 ^{DE}
14	11.41	11.05	9.71	11.35	9.6	10.32	10.87	10.18	0.883	10.57 ^E

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 27b Main effects and interactions for stearic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39					.0472	
40						
43						
48						
50						
63.1						
63.2					.0134	
69						
79						
86						
87						
88						
91					.0192	
93						
97						
98						
100						
108						
110						
111						

Table 28a. Least square subclass¹ means and standard errors for oleic acid(C18:1) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	39.56	42.92	41.49	38.77	39.75	41.25	41.52	40.3	2.195	40.36 ^A
48	37.88	35.42	37.09	39.45	34.4	35.94	36.67	36.79	1.602	37.06 ^{AB}
100	37.05	35.93	37.09	38.1	33.69	38.94	35.49	35.13	2.009	35.83 ^{BC}
88	35.29	36.11	32.93	35.9	33.9	36.72	35.33	37.85	1.815	35.52 ^{BC}
63 a	37.84	35.32	36.83	36.22	35.11	36.78	35.44	34.48	1.314	35.05 ^{BCD}
63 b	37.22	35.12	35.16	36.93	36.61	34.68	33.48	34.8	1.58	35.03 ^{BCD}
91	36.79	34.58	33.49	35.69	34.75	35.68	34.04	34.59	1.915	34.95 ^{BCD}
34	35.26	33.7	36.4	37.09	36.93	35.26	34.99	35.34	1.524	34.34 ^{BCD}
40	36.39	35.14	33.39	36.87	32.48	33.49	35.91	36.43	1.804	34.28 ^{BCD}
5	34.49	33.42	39.43	36.31	33.73	36.6	34.86	34.76	2.107	34.25 ^{BCD}
43	35.25	35.13	33.7	35.06	33.82	35.32	36.54	34.5	1.606	34.08 ^{BCD}
39	36.05	34.9	33.03	36.53	34.83	32.95	34.83	33.88	1.654	33.62 ^{BCDE}
98	35.65	33.18	32.92	34.4	33.01	33.33	34.08	34.17	1.595	32.67 ^{CDE}
86	33.85	35.88	34.83	34.2	34.16	33.36	32.65	35.2	1.743	32.59 ^{CDE}
93	33.67	31.69	30.03	35.68	32	35.01	34.07	33.47	1.924	32.52 ^{CDE}
108	35.17	33.56	31.47	35.04	34.21	34.1	32.55	33.6	1.702	32.48 ^{CDE}
110	34.06	32.65	32.78	35.09	30.73	32.3	33.97	33.97	2.031	32.34 ^{CDE}
87	33.13	36.31	31	34.42	32.15	33.34	31.94	32.49	1.922	32.02 ^{CDE}
50	31.68	33.62	31.1	33.52	31.42	34.86	35.59	34.25	2.235	31.71 ^{CDEF}
37	33.1	30.32	32.96	33.8	32.54	32.85	30.63	33.96	2.597	30.92 ^{DEFG}
111	33.5	33.78	30.36	31.28	27.77	32.92	31.45	29.06	1.807	29.52 ^{EFGH}
69	30.21	29.83	27.17	28.85	29.91	30.33	27.71	29.37	1.958	27.61 ^{FGH}
1	31.25	32.86	31.64	30.1	29.01	31.13	27.95	28.77	2.347	27.19 ^{GH}
79	27.98	31.6	30.4	27.61	24.18	26.51	26.43	25.56	1.952	25.76 ^H
97	33.18	32.27	30.84	28.83	29.04	28.52	24.91	30.56	2.878	25.58 ^H

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 28b Main effects and interactions for oleic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79	.0126					
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 29a. Least square subclass¹ means and standard errors for linoleic acid(C18:2) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
79	21.44	18.12	26.68	22.2	26.9	26.38	23.65	27.08	2.302	24.12 ^A
97	18.18	21.79	24.2	21.09	23.17	23.51	24.23	23.71	2.071	23.61 ^{AB}
69	20.61	23.24	26.14	21.45	18	22.99	22.74	24.97	2.481	23.16 ^{ABC}
1	20.35	21.2	23.85	20.4	23.08	23.07	22.37	24.75	1.443	23.12 ^{ABC}
111	18.78	20.95	23.96	19.13	23.57	21.1	20.05	24.32	1.487	20.95 ^{ABCD}
108	18.27	21.31	24.31	17.07	21.1	21.38	19.63	22.55	1.776	20.06 ^{ABCDE}
37	17.8	21.49	22.79	16.96	20.74	21.1	20.42	20.86	2.149	19.96 ^{ABCDE}
110	19.36	21.22	22.77	16.38	22.96	22.33	18.12	21.39	1.971	19.52 ^{ABCDE}
98	17.11	20.91	22.53	17.11	21.24	21.44	18.3	20.82	1.616	19.17 ^{BCDE}
86	17.76	17.82	20.63	17.43	21.08	20.86	18.59	19.76	1.391	19.16 ^{BCDE}
34	18.51	20.87	20.17	15.6	19.04	20.62	18.03	20.66	1.281	18.48 ^{CDE}
93	17.39	20.81	24.28	15.3	20.92	18.49	16.76	20.81	1.958	18.32 ^{DE}
39	16.42	18.98	22.75	15.07	19.46	23.53	17.09	21.16	1.763	18.17 ^{DE}
50	17.87	18.89	23.37	16.19	21.01	17.61	15.99	19.74	2.092	18.13 ^{DE}
5	18.71	19.08	17.94	15.52	20.64	18.89	17.36	19.52	2.049	17.96 ^{DE}
63 a	14.92	19.35	21.19	15.86	20.41	18.76	17.48	21.54	1.668	17.94 ^{DE}
43	17.09	18.81	22.65	15.72	20.26	19.65	15.7	21.28	1.718	17.83 ^{DEF}
87	17.81	16.34	22.79	16.01	20.57	18.71	17.6	20.47	2.055	17.78 ^{DEF}
63 b	15.42	19.45	20.92	15.74	19.28	19.7	18.51	19.97	1.771	17.43 ^{DEF}
40	15.77	18.63	22.5	15.02	19.91	20.78	15.7	18.45	1.771	17.18 ^{DEF}
91	15.09	19.45	23.05	16.28	19.68	18.71	17.18	19.6	2.011	17.13 ^{DEF}
88	17.17	18.65	20.01	14.99	20.26	18.49	17.16	18.04	2.009	16.57 ^{DEF}
100	15.95	19.64	19.69	13.92	21.23	21.23	16.53	19.91	2.371	16.42 ^{DEF}
48	14.73	17.52	19.79	13.22	19.93	19.45	15.68	19.11	1.974	15.74 ^{EF}
14	15.03	14.41	17.77	11.69	18.28	15.37	11.34	17.13	1.994	13.16 ^F

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 29b Main effects and interactions for linoleic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39				.0138		
40						
43				.0340		
48						
50						
63.1						
63.2						
69						
79	.0249					
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 30a. Least square subclass¹ means and standard errors for linolenic acid(C18:3) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
110	0.72	0.99	1.41	0.45	0.91	1.02	0.79	1.08	0.205	0.63 ^A
98	0.77	0.78	1.16	0.5	0.88	0.88	0.76	1.08	0.178	0.62 ^A
5	0.67	1.12	0.88	0.4	1.05	0.87	0.6	1.2	0.219	0.6 ^A
34	0.68	0.88	1.13	0.49	1.61	0.79	0.73	1.01	0.288	0.59 ^A
63 a	0.68	0.89	1.16	0.46	0.84	0.95	0.76	1.07	0.178	0.59 ^A
63 b	0.66	0.92	1.25	0.51	0.8	0.95	0.67	0.92	0.159	0.59 ^A
48	0.67	0.81	1.01	0.51	0.79	0.94	0.66	1.04	0.162	0.58 ^A
91	0.66	0.91	1.3	0.53	0.77	0.95	0.65	0.93	0.176	0.56 ^A
93	0.7	1.05	1.33	0.47	0.81	0.86	0.81	1.11	0.22	0.56 ^A
108	0.65	1.14	1.23	0.47	0.87	0.87	0.74	1.09	0.203	0.56 ^A
79	0.98	1.27	1.62	0.5	1.19	0.67	0.71	1.25	0.272	0.55 ^A
43	0.77	0.91	0.96	0.44	0.64	0.89	0.61	1.01	0.151	0.54 ^A
100	0.63	1.02	1.03	0.45	0.77	1.11	0.87	1.14	0.237	0.54 ^A
14	0.61	0.89	0.94	0.42	1.23	0.85	0.46	0.98	0.218	0.53 ^A
69	0.89	0.93	1.43	0.5	1.06	0.68	0.81	1.13	0.269	0.53 ^A
1	0.82	0.95	1.23	0.45	0.9	0.93	0.78	1.06	0.22	0.52 ^A
39	0.67	0.98	1.13	0.45	0.63	1.32	0.64	1.03	0.216	0.52 ^A
86	0.71	0.73	1.14	0.42	0.92	0.92	0.69	0.98	0.208	0.52 ^A
37	0.88	1.49	1.14	0.42	0.74	0.95	0.71	1	0.264	0.51 ^A
111	0.91	0.96	1.2	0.43	1.6	0.98	0.79	1.28	0.384	0.51 ^A
88	0.58	0.86	0.95	0.42	0.45	0.84	0.64	0.96	0.164	0.5 ^A
40	0.6	0.84	0.86	0.4	0.55	0.9	0.58	0.86	0.158	0.48 ^A
97	0.7	0.94	1.11	0.47	0.78	0.87	0.75	1.05	0.218	0.48 ^A
87	0.54	0.6	1.12	0.42	0.75	0.76	0.55	1.03	0.189	0.46 ^A
50	0.93	0.97	1.07	0.38	0.69	0.71	0.62	0.95	0.217	0.44 ^A

¹Appendix Table 1.

Means with the same superscript are not significantly different (p<0.05).

Table 30b Main effects and interactions for linolenic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39				.0254		.0473
40						
43				.0340		
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 31a. Least square subclass¹ means and standard errors for arachidic acid(C20:0) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	0.36	0.45	0.54	0.35	0.21	0.29	0.26	0.51	0.1	0.27 ^A
93	0.35	0.5	0.58	0.3	0.32	0.31	0.42	0.58	0.119	0.27 ^A
63 b	0.38	0.6	0.59	0.35	0.37	0.34	0.31	0.34	0.116	0.25 ^A
98	0.37	0.7	0.72	0.3	0.47	0.35	0.17	0.54	0.106	0.25 ^A
108	0.31	0.61	0.6	0.27	0.41	0.36	0.34	0.49	0.11	0.23 ^A
43	0.42	0.62	0.58	0.28	0.35	0.35	0.28	0.47	0.113	0.22 ^A
88	0.38	0.64	0.48	0.24	0.36	0.31	0.3	0.46	0.096	0.22 ^A
48	0.38	0.48	0.53	0.25	0.32	0.32	0.34	0.46	0.106	0.21 ^A
63 a	0.34	0.56	0.57	0.27	0.38	0.3	0.35	0.47	0.108	0.21 ^A
87	0.39	0.54	0.42	0.17	0.42	0.34	0.28	0.54	0.103	0.21 ^A
91	0.36	0.54	0.55	0.22	0.4	0.32	0.24	0.41	0.099	0.21 ^A
110	0.42	0.67	0.64	0.16	0.45	0.38	0.32	0.53	0.128	0.2 ^A
34	0.38	0.49	0.59	0.25	0.49	0.18	0.29	0.45	0.121	0.19 ^A
37	0.42	0.64	0.55	0.27	0.42	0.29	0.25	0.46	0.122	0.19 ^A
100	0.34	0.96	0.55	0.24	0.41	0.34	0.24	0.51	0.159	0.19 ^A
5	0.34	0.52	0.56	0.17	0.48	0.34	0.22	0.4	0.119	0.18 ^A
50	0.39	0.59	0.55	0.15	0.38	0.28	0.29	0.43	0.101	0.18 ^A
39	0.39	0.56	0.57	0.15	0.34	0.45	0.28	0.51	0.132	0.17 ^A
40	0.31	0.6	0.48	0.2	0.26	0.31	0.25	0.49	0.098	0.17 ^A
86	0.4	0.5	0.55	0.16	0.42	0.27	0.27	0.45	0.116	0.17 ^A
97	0.36	0.66	0.63	0.16	0.41	0.36	0.31	0.55	0.137	0.17 ^A
111	0.45	0.67	0.8	0.18	0.3	0.38	0.25	0.49	0.168	0.17 ^A
79	0.37	0.77	0.75	0.19	0.45	0.3	0.31	0.53	0.156	0.16 ^A
1	0.37	0.64	0.64	0.19	0.34	0.33	0.27	0.46	0.132	0.15 ^A
69	0.39	0.68	0.69	0.17	0.47	0.34	0.25	0.5	0.152	0.15 ^A

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 31b Main effects and interactions for arachidic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 32a. Least square subclass¹ means and standard errors for arachidonic acid(C20:4) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
79	5.84	5.33	5.8	6.26	7.22	5.78	6.91	5.04	0.718	7.05 ^A
1	5.4	4.93	4.56	5.72	5.84	4.75	6.6	5.44	1.194	6.96 ^A
97	4.41	3.68	3.96	5.44	5.36	4.76	6.86	3.66	1.214	6.64 ^{AB}
111	4.89	3.49	4.9	5.29	5.6	4.25	5.11	4.6	0.897	5.89 ^{ABC}
69	4.69	3.93	4.46	5.07	6.43	3.92	5.41	3.54	0.875	5.71 ^{ABCD}
37	4.46	5.57	3.61	4.17	4.83	3.59	5.51	3.05	1.126	5.26 ^{BCDE}
86	4.22	3.77	3.9	4.82	3.67	3.99	4.8	3	0.863	4.99 ^{CDEF}
50	4.78	4.13	3.41	4.29	4.74	3.26	4.03	2.68	1.009	4.93 ^{CDEF}
5	3.71	3.82	2.4	3.86	4.63	2.58	4.11	2.65	0.875	4.51 ^{CDEFG}
108	3.35	3.74	3.92	3.58	3.69	3.28	4.71	2.92	0.703	4.49 ^{CDEFG}
87	2.47	2.44	4.27	3.82	4.12	3.17	3.48	2.74	0.941	4.35 ^{CDEFG}
110	3.57	3.9	3.38	3.56	5.09	3.45	3.51	2.61	0.859	4.35 ^{CDEFG}
34	3.47	3.65	3.03	3.45	1.66	3.25	3.83	2.89	0.729	4.22 ^{DEFG}
39	2.9	2.97	3.5	3.3	4.02	3.28	3.51	2.92	0.849	4.21 ^{DEFG}
98	3.28	3.95	3.39	3.76	3.98	3.12	3.3	2.52	0.709	4.18 ^{DEFG}
40	2.88	3.06	2.85	3.41	4.54	3.02	3.19	2.13	0.797	4.01 ^{EFG}
43	3.61	6.07	2.76	3.74	3.76	2.68	2.83	2.45	0.624	3.77 ^{EFGH}
93	2.76	3.93	3.86	2.73	3.56	1.72	2.19	1.93	0.977	3.66 ^{EFGH}
88	2.84	2.79	2.54	3.35	3.63	2.53	2.67	1.71	0.643	3.42 ^{FGHI}
63 b	2.8	2.63	2.91	2.9	2.55	2.73	3.21	2.32	0.629	3.39 ^{FGHI}
63 a	2.59	2.29	2.26	3.14	2.95	2.12	2.76	2.53	0.605	3.29 ^{GHI}
100	2.48	2.08	2.07	2.37	3.97	2.02	2.51	1.78	0.751	3.18 ^{GHI}
91	2.19	2.43	2.51	2.76	2.71	1.87	2.25	1.93	0.55	2.92 ^{GHI}
48	2.36	2.27	1.74	1.72	2.55	1.51	2.28	1.34	0.52	2.32 ^{HI}
14	1.05	1.19	1	2.32	1.53	1.54	1.47	1.58	0.722	1.93 ^I

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 32b Main effects and interactions for arachidonic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 33a. Least square subclass¹ means and standard errors for eicosapentaenoic acid (C20:5) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
79	0.57	1.74	1.17	0.18	0.71	0.58	0.51	0.67	0.207	0.25 ^A
111	0.76	0.95	0.88	0.12	0.73	0.6	0.23	0.61	0.186	0.25 ^{AB}
5	0.69	0.83	0.73	0.12	0.52	0.38	0.33	0.65	0.179	0.2 ^{AB}
1	0.69	1.08	0.81	0.14	0.65	0.46	0.46	0.6	0.202	0.19 ^{AB}
34	0.68	0.94	0.78	0.08	0.53	0.44	0.35	0.52	0.19	0.18 ^{AB}
97	0.67	1	0.82	0.11	0.56	0.52	0.43	0.55	0.202	0.17 ^{AB}
98	0.61	1.07	0.83	0.2	0.57	0.43	0.3	0.5	0.187	0.17 ^{AB}
37	0.66	0.97	0.76	0.12	0.59	0.42	0.41	0.46	0.196	0.16 ^{AB}
63 b	0.62	0.87	0.74	0.09	0.55	0.43	0.32	0.47	0.164	0.16 ^{AB}
69	0.74	0.99	0.81	0.15	0.66	0.44	0.38	0.52	0.208	0.16 ^{AB}
50	0.86	1.02	0.69	0.1	0.51	0.41	0.39	0.48	0.196	0.15 ^{AB}
87	0.62	0.95	0.75	0.07	0.51	0.43	0.29	0.46	0.173	0.15 ^{AB}
93	0.66	0.78	0.76	0.14	0.5	0.31	0.28	0.45	0.188	0.15 ^{AB}
86	0.6	0.75	0.8	0.12	0.5	0.42	0.35	0.51	0.2	0.14 ^{AB}
91	0.57	0.87	0.69	0.09	0.51	0.41	0.31	0.43	0.17	0.14 ^{AB}
100	0.56	0.85	0.74	0.75	0.55	0.41	0.2	0.45	0.17	0.14 ^{AB}
108	0.65	0.95	0.81	0.08	0.56	0.43	0.36	0.48	0.184	0.14 ^{AB}
39	0.6	0.89	0.75	0.13	0.54	0.44	0.31	0.5	0.189	0.13 ^{AB}
40	0.61	0.99	0.69	0.07	0.37	0.4	0.33	0.48	0.181	0.12 ^{AB}
88	0.61	0.95	0.64	0.08	0.5	0.43	0.35	0.44	0.181	0.12 ^{AB}
43	0.7	0.99	0.73	0.17	0.37	0.4	0.28	0.44	0.206	0.11 ^{AB}
48	0.66	0.67	0.63	0.06	0.42	0.31	0.29	0.46	0.178	0.11 ^{AB}
110	0.67	1.09	0.76	0.07	0.58	0.48	0.35	0.51	0.213	0.11 ^{AB}
14	0.56	0.87	0.68	0.06	0.27	0.4	0.08	0.43	0.151	0.1 ^{AB}
63 a	0.55	0.85	0.67	0.07	0.51	0.35	0.3	0.47	0.183	0.09 ^B

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 33b Main effects and interactions for eicosapentaenoic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14	.0347					
34						
37						
39						
40						
43						
48						
50			.0480			
63.1						
63.2						
69						
79						.0363
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111			.0354			

Table 34a. Least square subclass¹ means and standard errors for docosapentaenoic acid(C22:5) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
1	0.38	0.25	0.24	0.5	0.79	0.36	0.45	0.48	0.204	0.7 ^A
111	0.4	0.21	0.34	0.51	0.72	0.44	0.44	0.41	0.2	0.7 ^A
79	0.71	0.34	0.36	0.62	0.47	0.49	0.54	0.35	0.148	0.67 ^{AB}
97	0.42	0.12	0.29	0.53	0.46	0.43	0.59	0.36	0.153	0.66 ^{AB}
37	0.48	0.28	0.22	0.57	0.42	0.32	0.45	0.29	0.144	0.59 ^{ABC}
69	0.37	0.21	0.4	0.51	0.41	0.34	0.44	0.3	0.115	0.55 ^{ABC}
86	0.49	0.29	0.22	0.44	0.29	0.34	0.37	0.34	0.102	0.49 ^{ABCD}
50	0.51	0.17	0.18	0.43	0.39	0.28	0.34	0.26	0.116	0.48 ^{ABCD}
5	0.41	0.29	0.22	0.4	0.46	0.24	0.34	0.27	0.106	0.47 ^{ABCD}
34	0.3	0.24	0.21	0.67	0.16	0.25	0.27	0.26	0.148	0.47 ^{ABCD}
87	0.28	0.1	0.28	0.41	0.4	0.28	0.34	0.26	0.13	0.47 ^{ABCD}
39	0.27	0.14	0.23	0.37	0.36	0.25	0.32	0.3	0.104	0.44 ^{BCD}
43	0.3	0.13	0.2	0.4	0.42	0.26	0.24	0.35	0.097	0.43 ^{BCD}
98	0.29	0.16	0.23	0.31	0.35	0.31	0.36	0.27	0.101	0.43 ^{BCD}
108	0.31	0.14	0.38	0.35	0.33	0.3	0.4	0.25	0.096	0.43 ^{BCD}
110	0.26	0.22	0.28	0.33	0.4	0.26	0.28	0.25	0.108	0.42 ^{CD}
93	0.32	0.29	0.28	0.28	0.38	0.2	0.23	0.19	0.113	0.41 ^{CD}
40	0.29	0.13	0.26	0.35	0.45	0.29	0.27	0.21	0.085	0.4 ^{CD}
88	0.27	0.17	0.16	0.37	0.38	0.26	0.27	0.2	0.079	0.38 ^{CD}
63 b	0.25	0.12	0.22	0.32	0.22	0.23	0.29	0.26	0.081	0.37 ^{CD}
63 a	0.31	0.13	0.21	0.31	0.22	0.17	0.23	0.31	0.085	0.36 ^{CD}
100	0.21	0.17	0.16	0.31	0.4	0.21	0.28	0.17	0.095	0.36 ^{CD}
14	0.17	0.11	0.21	0.24	0.19	0.37	0.19	1.65	0.096	0.29 ^D
91	0.23	0.12	0.15	0.29	0.24	0.18	0.25	0.14	0.062	0.29 ^D
48	0.27	0.18	0.18	0.21	0.23	0.15	0.22	0.18	0.066	0.28 ^D

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 34b Main effects and interactions for docosapentaenoic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 35a. Least square subclass¹ means and standard errors for docosahexaenoic acid (C22:6) as % of total fat.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
1	0.35	0.63	0.4	0.19	0.62	0.29	0.31	0.31	0.122	0.28 ^A
97	0.49	0.61	0.4	0.2	0.34	0.38	0.39	0.21	0.089	0.26 ^{AB}
111	0.38	0.62	0.46	0.19	0.52	0.34	0.29	0.18	0.122	0.26 ^{ABC}
79	1.45	0.65	0.59	0.24	0.4	0.46	0.41	0.2	0.385	0.25 ^{ABCD}
37	0.45	0.73	0.35	0.18	0.28	0.22	0.31	0.19	0.103	0.2 ^{ABCDE}
5	0.38	0.5	0.26	0.16	0.32	0.17	0.21	0.16	0.083	0.17 ^{ABCDEF}
69	0.31	0.49	0.47	0.19	0.4	0.28	0.3	0.23	0.122	0.17 ^{ABCDEF}
39	0.26	0.46	0.38	0.15	0.28	0.22	0.21	0.15	0.064	0.16 ^{ABCDEF}
86	0.6	0.33	0.41	0.18	0.3	0.24	0.23	0.18	0.158	0.16 ^{ABCDEF}
50	0.73	0.56	0.3	0.19	0.22	0.22	0.25	0.13	0.184	0.15 ^{ABCDEF}
34	0.2	0.37	0.3	0.22	0.27	0.21	0.21	0.17	0.078	0.14 ^{BCDEF}
40	0.24	0.45	0.23	0.14	0.18	0.23	0.19	0.15	0.056	0.14 ^{BCDEF}
87	0.28	0.44	0.4	0.14	0.21	0.18	0.17	0.17	0.06	0.14 ^{BCDEF}
93	0.27	0.46	0.4	0.14	0.26	0.15	0.18	0.13	0.103	0.14 ^{BCDEF}
98	0.26	0.67	0.36	0.13	0.3	0.2	0.24	0.21	0.083	0.14 ^{BCDEF}
108	0.25	0.55	0.42	0.14	0.3	0.25	0.25	0.17	0.08	0.14 ^{BCDEF}
43	0.36	0.56	0.3	0.16	0.17	0.21	0.18	0.21	0.085	0.13 ^{CDEF}
63 b	0.21	0.35	0.29	0.12	0.23	0.2	0.19	0.14	0.056	0.13 ^{CDEF}
88	0.25	0.45	0.29	0.14	0.24	0.2	0.16	0.13	0.065	0.13 ^{CDEF}
110	0.3	0.62	0.33	0.14	0.33	0.26	0.23	0.16	0.094	0.13 ^{CDEF}
100	0.22	0.34	0.27	0.11	0.27	0.2	0.18	0.14	0.063	0.12 ^{DEF}
63 a	0.22	0.37	0.31	0.11	0.18	0.16	0.2	0.14	0.067	0.11 ^{EF}
48	0.21	0.28	0.23	0.06	0.31	0.12	0.15	0.11	0.086	0.09 ^{EF}
14	0.1	0.26	0.16	0.07	0.16	0.16	0.07	0.11	0.043	0.07 ^{EF}
91	0.17	0.39	0.26	0.07	0.17	0.14	0.13	0.14	0.055	0.07 ^F

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 35b Main effects and interactions for docosahexaenoic acid.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5			.0227			
14			.0324			
34						
37	.0233		.0354		.0358	
39	.0415					.0265
40			.0109			
43	.0318					
48						
50						
63.1						
63.2						.0494
69						
79						
86						
87	.0098					
88	.0392					
91	.0471					.0320
93						
97			.0219			
98	.0497		.0469			.0258
100						
108						.0139
110			.0247			
111			.0480			

Table 36a. Least square subclass¹ means and standard errors for caloric content(kCal.).

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	255	213	218	239	201	234	239	253	17.816	231 ^A
48	161	146	149	170	147	174	163	171	10.602	155 ^B
91	149	136	144	141	131	157	144	147	8.415	136 ^C
87	140	128	135	134	127	149	159	152	8.814	134 ^C
100	152	146	134	141	127	147	139	155	8.427	133 ^{CD}
63 a	131	128	127	133	131	139	151	137	8.603	129 ^{CDE}
63 b	114	131	131	135	128	134	135	137	7.407	127 ^{CDEF}
88	134	132	120	129	114	129	130	133	8.02	124 ^{CDEFG}
39	128	125	117	123	112	130	130	135	4.495	123 ^{CDEFG}
93	128	134	127	136	117	132	133	128	6.861	123 ^{CDEFG}
43	130	118	122	119	112	128	132	129	6.838	118 ^{DEFG}
98	127	116	121	124	112	122	125	121	5.162	118 ^{DEFGH}
34	120	121	115	117	115	121	119	120	3.418	116 ^{DEFGH}
5	120	120	115	116	112	125	118	132	4.496	115 ^{EFGH}
40	133	116	115	116	116	124	118	117	6.66	115 ^{EFGH}
97	126	112	124	120	112	123	121	114	5.803	115 ^{EFGH}
86	121	123	111	116	111	116	116	118	6.07	114 ^{EFGH}
110	116	113	118	115	110	121	116	116	5.139	113 ^{EFGHI}
37	120	113	112	113	108	119	117	117	3.429	112 ^{FGHI}
50	120	118	115	117	110	119	115	122	4.682	112 ^{FGHI}
108	123	114	112	114	112	119	118	115	4.694	111 ^{GHI}
69	112	111	102	109	102	110	108	109	3.056	105 ^{HI}
1	108	105	106	104	101	108	103	106	2.629	104 ^{HI}
111	109	108	101	104	103	110	105	106	3.15	104 ^{HI}
79	99	101	95	100	97	102	100	101	1.801	99 ^I

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 36b Main effects and interactions for caloric content.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5		.0344				
14						
34						
37						
39					.0106	
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 37a. Least square subclass¹ means and standard errors for total iron content expressed as micrograms/gram muscle.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
110	13.66	15.78	16.45	12.07	14.11	14.92	15.85	14.85	1.476	13.41 ^A
43	13.99	13.61	14.64	12.25	12.18	14.67	11.66	13.92	1.437	12.95 ^{AB}
98	10.84	13.15	14.23	11.94	13.41	14.52	14.38	13.12	1.589	12.8 ^{ABC}
91	10.87	13.62	13.76	10.71	12.45	13.95	12.81	12.25	1.23	11.79 ^{ABCD}
108	12.14	12.89	13.45	13.04	10.7	13.13	11.6	11.88	1.357	11.78 ^{ABCD}
93	10.34	13.59	12.94	9.28	11.47	12.13	11.43	10.23	1.37	11.03 ^{ABCDE}
97	11.8	13.83	13.14	10.23	14.05	13.38	11.7	11.76	1.476	10.94 ^{ABCDE}
34	11.33	11.61	11.99	8.72	13.08	10.74	10.03	10.93	0.944	10.71 ^{ABCDE}
1	12.58	11.71	12.6	8.91	11.4	10.76	8.09	12.95	1.19	10.17 ^{ABCDE}
40	11.41	10.11	10.7	8.07	9.92	9.62	8.61	12.16	1.592	9.97 ^{ABCDE}
63 b	10.25	7.98	10.8	7.72	8.95	11.02	8.81	10.11	1.274	9.93 ^{ABCDE}
63 a	11.17	9.71	10.91	8.88	9.96	10.75	10.04	10.32	0.848	9.92 ^{ABCDE}
87	11.38	11.58	11.86	8.31	10.43	12.2	9.84	11.25	1.423	9.91 ^{ABCDE}
111	8.74	10.39	10.54	10.45	11.47	10.56	8.67	8.73	1.186	9.89 ^{ABCDE}
69	14.14	16.41	13.49	9.55	16.93	14.59	11.54	14.38	3.225	9.79 ^{ABCDE}
5	9.8	9.46	11.35	8.61	11.38	9.57	8.05	9.88	0.737	9.64 ^{BCDE}
79	8.87	10.37	11.96	8.55	12.48	10.5	9.22	9.47	0.999	9.36 ^{BCDE}
86	8.29	9.39	10.08	7.64	12.49	10.06	8.48	8.81	1.028	9.29 ^{BCDE}
48	8.96	9.39	9.24	8.15	10.83	10.27	7.53	9.15	0.983	9.23 ^{BCDE}
37	9.16	8.6	9.92	8.02	9.74	8.46	9.71	9.23	0.9	9.09 ^{CDE}
88	9.63	9.53	11.91	8	9.85	10.61	8.78	10.21	1.001	9.07 ^{DE}
39	8.99	8.24	9.16	7.88	11.35	8.73	6.97	8.68	0.807	8.91 ^{DE}
14	7.04	6.83	7.91	7.85	10.06	8.37	7.74	8.68	1.23	8.72 ^{DE}
100	8.52	7.59	8.27	7.88	8.55	8.54	6.59	8.9	1.029	8.53 ^{DE}
50	7.45	7.7	9.31	6.67	9.03	8.22	6.97	7.36	0.743	7.35 ^E

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 37b Main effects and interactions for total iron content.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1				.0153		
5						
14						
34			.0413			
37						
39						
40						
43						
48						
50						
63.1						
63.2				.0236		
69						
79						
86						
87						
88				.0385		
91						.0330
93						.0255
97						
98						
100						
108						
110						
111						

Table 38a. Least square subclass¹ means and standard errors for heme iron content expressed as micrograms/gram of muscle.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
110	10.55	11.94	12.6	8.93	10.54	11.48	12.21	11.25	1.301	10.46 ^A
43	10.9	9.72	10.83	9.33	9.85	10.76	8.18	10.63	1.357	10.06 ^{AB}
98	7.98	9.19	11.14	8.81	10.32	11.36	9.79	9.58	1.259	9.66 ^{ABC}
91	8.14	10.21	10.38	7.65	9.42	10.55	9.83	8.83	1.134	8.96 ^{ABC}
108	9.32	9.22	9.03	10.24	6.91	9.93	7.59	8.11	1.103	8.67 ^{ABCD}
97	9.58	10.62	9.66	7.53	11.08	10.56	8.33	8.99	1.396	8.59 ^{ABCD}
93	7.48	9.97	9.71	6.4	8.65	9.52	8.18	6.93	1.18	8.43 ^{ABCD}
34	8.15	8.62	8.42	5.6	9.54	7.89	7.13	7.94	1.002	8.24 ^{ABCD}
87	8.88	8.22	8.4	5.69	7.17	9.66	6.23	8.69	1.335	7.41 ^{ABCD}
63 b	7.56	4.88	7.59	4.82	5.91	8.11	5.89	6.92	1.354	7.38 ^{ABCD}
40	8.72	6.79	7.41	4.45	7.54	6.81	5.55	8.84	1.582	7.37 ^{ABCD}
1	10.15	8.13	9.07	6.71	7.63	7.58	3.97	9.06	1.17	7.28 ^{ABCD}
111	6.11	6.87	7.11	7.72	8.31	7.62	5.83	5.42	1.178	7.27 ^{ABCD}
69	9.74	12.16	10.1	6.82	12.93	10.59	7.77	10.7	2.447	7.22 ^{ABCD}
79	6.43	7.08	8.65	6	9.43	7.63	6.34	6.59	0.913	7.17 ^{ABCD}
63 a	8.33	6.31	7.2	6.03	6.9	7.27	6.79	6.71	0.669	7.01 ^{ABCD}
5	6.09	5.58	7.58	5.71	7.92	6.63	5.07	6.84	0.839	6.73 ^{BCD}
48	6.32	6.42	5.96	5.33	8.3	7.26	4.72	6.41	0.963	6.73 ^{BCD}
86	6.14	6.63	5.99	4.92	9.67	7.12	5.23	6.12	1.034	6.73 ^{BCD}
37	6.53	5.48	7.05	5.57	6.49	5.39	6.92	6.43	0.891	6.56 ^{BCD}
39	6.59	4.8	5.59	5.17	8.38	5.78	4.12	5.87	0.927	6.44 ^{BCD}
14	4.48	3.76	4.87	5.44	7.68	5.73	4.86	5.82	1.308	6.36 ^{BCD}
88	6.48	6.44	7.97	5.41	6.93	7.47	4.85	7.25	1	6.14 ^{CD}
100	6.2	4.12	5.19	4.93	5.98	5.74	3.86	5.58	1.167	6.1 ^{CD}
50	5.37	5.03	6.55	3.78	6.5	5.71	4.38	4.77	0.709	5.1 ^D

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 38b Main effects and interactions for heme iron content.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1				.0089		
5						
14						
34			.0500			
37						
39						.0393
40						
43						
48			.0413			
50						
63.1						
63.2				.0327		
69						
79						
86			.0198			
87						
88						
91						.0409
93						.0221
97						
98						
100						
108						
110						
111					.0455	

Table 39a. Least square subclass¹ means and standard errors for nonheme iron expressed as micrograms/gram of muscle.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
98	2.86	3.96	3.1	3.13	3.09	3.16	4.58	3.54	0.654	3.14 ^A
108	2.82	3.66	4.42	2.79	3.79	3.19	4.01	3.76	0.556	3.11 ^A
110	3.11	3.84	3.85	3.14	3.56	3.43	3.64	3.6	0.491	2.95 ^A
63 a	2.84	3.41	3.72	2.84	3.06	3.48	3.25	3.61	0.412	2.92 ^A
88	3.15	3.09	3.94	2.59	2.91	3.14	3.93	2.96	0.442	2.92 ^A
5	3.7	3.87	3.77	2.89	3.46	2.94	2.98	3.04	0.459	2.9 ^A
1	2.43	3.58	3.53	2.19	3.77	3.19	4.12	3.88	0.466	2.89 ^A
43	3.09	3.89	3.81	2.92	2.33	3.9	3.49	3.29	0.421	2.86 ^A
91	2.73	3.42	3.38	3.06	3.04	3.4	2.98	3.42	0.376	2.83 ^A
111	2.63	3.52	3.42	2.73	3.16	2.94	2.83	3.3	0.384	2.62 ^A
40	2.68	3.31	3.29	3.63	2.38	2.81	3.06	3.31	0.553	2.6 ^A
93	2.86	3.61	3.23	2.87	2.82	2.61	3.26	3.31	0.541	2.59 ^A
69	4.4	4.26	3.39	2.74	4	3.64	3.77	3.68	1.06	2.56 ^A
86	2.15	2.77	4.1	2.73	2.82	2.93	3.25	2.7	0.502	2.55 ^A
63 b	2.69	3.11	3.12	2.91	3.04	2.9	2.92	3.19	0.393	2.54 ^A
37	2.63	3.12	2.87	2.46	3.24	3.06	2.79	2.79	0.386	2.52 ^A
48	2.64	2.97	3.28	2.82	2.52	3.01	2.8	2.74	0.355	2.5 ^A
87	2.5	3.36	3.47	2.63	3.26	2.54	3.59	2.56	0.496	2.49 ^A
34	3.18	2.99	3.56	3.11	3.54	2.84	2.9	2.99	0.56	2.47 ^A
39	2.41	3.44	3.57	2.71	2.97	2.95	2.85	2.81	0.386	2.47 ^A
100	2.32	3.47	3.09	2.95	2.56	2.81	2.72	3.32	0.5	2.43 ^A
14	2.56	3.07	3.04	2.41	2.38	2.64	2.88	2.86	0.422	2.36 ^A
97	2.21	3.21	3.49	2.69	2.97	2.82	3.37	2.77	0.489	2.34 ^A
50	2.08	2.67	2.72	2.89	2.53	2.5	2.6	2.59	0.403	2.24 ^A
79	2.44	3.29	3.31	2.55	3.05	2.87	2.87	2.88	0.53	2.19 ^A

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 39b Main effects and interactions for nonheme iron content.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1	.0214					
5						
14						
34						
37						
39						
40						
43						.0206
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 40a. Least square subclass¹ means and standard errors for cholesterol content expressed as mg/100g.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
97	67.48	69.4	69.95	67.46	69.19	66.71	62.35	64.35	3.084	64.67 ^A
110	68.44	72.84	70.12	63.27	60.73	69.78	70.74	61.83	4.079	64.4 ^{AB}
98	69	71.59	67.68	66.13	67.34	66.98	66.05	61.62	3.409	63.1 ^{ABC}
43	67.48	72.94	68.78	65.83	64.4	65.62	65.1	62.6	4.463	62.45 ^{ABCD}
91	65.31	68.99	66.19	64.68	63.93	63.47	66.41	60.11	2.965	61.34 ^{ABCD}
87	57.61	70.32	67.76	61.49	65.75	65.29	69.08	55.62	3.123	61.01 ^{ABCD}
63 a	59.73	66.93	62.77	60.66	63.71	60.99	64.95	58.26	3.596	59.46 ^{ABCDE}
5	62.35	66.43	63.21	59.81	63.4	68.18	62.38	61.34	4.452	59.27 ^{ABCDE}
39	62.1	68.05	61.64	62.57	62.03	60.05	58.86	58.21	2.767	59.23 ^{ABCDE}
93	62.45	67.58	67.52	61.47	60.14	62.46	63.55	55.57	2.971	59.22 ^{ABCDE}
34	65.12	68.7	63.6	60.15	63.28	61.22	64.55	60.04	3.513	59.08 ^{ABCDE}
40	63.89	58.18	61.36	64.98	62.91	59.43	60.62	58.27	3.458	58.98 ^{ABCDE}
79	60.68	71.89	62.33	63.23	62.08	62.23	59.61	60.58	3.2	58.69 ^{ABCDE}
1	63.78	68.75	64.81	62.23	59.16	59.18	61.34	59.13	3.578	58.26 ^{ABCDE}
86	63.2	64.47	63.76	60.78	61	61.46	58.14	54.66	3.482	58.11 ^{ABCDE}
69	62.66	70.3	60.56	59.9	63.78	61.59	58.99	58.64	2.961	58.09 ^{ABCDE}
88	61.33	70.61	58.14	60.53	60.38	60.06	59.99	57.35	3.327	57.75 ^{ABCDE}
37	64.14	62.71	56.35	60.44	60.9	58.14	59.76	55.58	3.283	57.4 ^{ABCDE}
63 b	60.56	66.02	63.48	59.51	63.66	60.32	58.93	58.52	3.506	57.33 ^{ABCDE}
111	55.97	64.81	62.95	59.64	59.71	59.67	58.99	53.81	3.127	57.17 ^{ABCDE}
108	65.81	66.33	61.49	57.75	59.39	63.35	60.62	58.41	4.013	56.91 ^{ABCDE}
14	62.26	78.34	64.58	55.76	58.53	60.51	71.94	60.76	7.716	56.44 ^{BCDE}
48	60.52	64.43	60.15	57.79	60.05	56.12	58.48	50.66	3.149	55.56 ^{CDE}
100	65.05	70.58	62.7	58.11	59.67	57.81	58.3	55.57	4.492	54.85 ^{DE}
50	57.13	62.2	57.2	54.55	57.42	55.47	58.52	52.29	3.186	52.75 ^E

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 40b Main effects and interactions for cholesterol content.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69			.0237			
79						
86						
87				.0126		.0011
88						
91						
93	.0342					.0247
97						
98						
100						
108						
110						.0183
111						.0387

Table 41a. Least square subclass¹ means and standard errors for percent cooking loss.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
5	20.7	19.5	21	22.6	21.3	21.4	22.4	19.2	2.14	21.74 ^A
86	19.82	20.49	21.53	22.03	20.69	18.94	20.94	21.07	1.944	20.96 ^{AB}
98	15.29	21.51	20.14	21.09	20	18.25	18.77	19.6	2.504	19.91 ^{ABC}
110	18.96	21.63	20.58	16	20.94	20.56	19.59	16.26	1.855	18.89 ^{ABCD}
91	18.36	17.36	19.36	16.76	17.8	18.28	17.72	19.1	2.394	18.18 ^{ABCDE}
50	18.14	16.09	18.86	19.18	15.97	17.68	18.96	16.42	1.63	18.17 ^{ABCDE}
37	16.59	17.29	20.26	18.63	17.85	16.57	18.26	17.02	1.514	17.77 ^{ABCDEF}
108	15.38	13.36	18.68	16.97	13.02	16.69	20.42	15.13	2.17	17.69 ^{ABCDEF}
43	17.49	15.19	17.47	15.75	16.13	16.89	18.11	16.53	2.109	17.68 ^{ABCDEF}
111	17.97	11.85	17.1	16.45	17.83	13.32	17.49	17.18	2.218	17.57 ^{ABCDEF}
1	14.5	12.8	16.6	16.5	15.7	14.3	17.3	17.5	1.896	16.09 ^{BCDEFG}
39	14.16	12.15	15.82	16.74	17.47	13.98	16.1	13.74	1.981	15.95 ^{CDEFG}
79	13.51	12.24	16.44	14.87	13.68	11.97	15.87	14.79	2.136	15.48 ^{CDEFG}
63 b	14.13	15.46	17.37	16.4	11.75	14.86	15.14	15.89	2.162	15.26 ^{CDEFG}
34	12.33	15.01	14.86	15.09	18.58	14.01	13.96	15.74	2.408	15.16 ^{CDEFG}
40	10.18	9.83	13.23	12.6	14.3	12.08	13.73	13.84	1.842	13.95 ^{DEFG}
48	16.02	12.02	15.15	15.12	15.17	12.56	13.28	15.54	1.972	13.92 ^{DEFG}
88	13.72	13.46	14.23	15.78	13.57	12.38	12.97	12.45	1.831	13.56 ^{EFGH}
63 a	13.2	12.18	15.93	13.31	15.83	12.46	13.8	11.22	2.141	13.51 ^{EFGH}
97	8.64	12.05	13.76	12.33	16.2	11.23	14.45	15.25	1.688	13.47 ^{EFGH}
100	11.29	11.41	13.62	12.02	13.83	11.52	16.24	12.31	1.985	13.14 ^{FGH}
69	10.05	11.64	13.99	14.61	13.72	10.82	12.73	12.16	1.613	12.90 ^{FGH}
93	14.9	11.98	14.47	12.54	11.64	11.49	14.1	12.31	1.774	12.86 ^{FGH}
87	10.51	14.93	10.48	12.48	11.11	9.25	9.92	13.41	2.059	11.66 ^{GH}
14	12.08	7.47	7.69	7.65	8.09	7.52	8.25	10.26	1.279	8.91 ^H

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 41b Main effects and interactions for % cooking loss.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						.0216
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97	.0402					
98						
100						
108			.0485			
110						
111						

Table 42a. Least square subclass¹ means and standard errors for sensory panel tenderness on a 150mm scale.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
97	144	141	128	144	138	140	136	135	4.563	139 ^A
69	138	143	137	136	129	142	135	136	4.986	138 ^A
93	105	106	116	139	126	129	129	129	11.932	133 ^{AB}
43	124	120	120	127	130	110	114	123	11.485	117 ^{ABC}
79	122	116	112	117	117	125	122	111	11.563	117 ^{ABC}
91	88	122	96	113	102	107	122	115	13.034	109 ^{BCD}
39	112	113	111	97	105	114	108	115	9.618	106 ^{CDE}
40	116	98	94	117	67	114	105	91	18.557	105 ^{CDE}
87	107	87	103	111	121	113	102	96	10.793	105 ^{CDE}
1	111	104	109	97	104	108	96	90	11.122	104 ^{CDE}
14	99	88	94	104	93	109	106	89	12.403	103 ^{CDE}
88	103	105	95	103	104	102	103	103	9.861	102 ^{CDE}
50	102	110	106	97	116	95	106	100	8.372	101 ^{CDE}
98	106	85	96	101	110	109	87	97	14.068	101 ^{CDE}
63 a	97	92	86	95	103	112	94	97	12.148	99 ^{CDE}
100	87	112	87	91	94	88	77	95	15.285	96 ^{CDEF}
108	104	113	98	100	91	107	84	115	10.453	96 ^{CDEF}
34	106	88	102	96	92	68	92	76	15.495	95 ^{CDEF}
37	85	93	95	96	120	93	88	70	9.078	95 ^{CDEF}
111	91	92	94	93	70	99	94	87	15.459	95 ^{CDEF}
110	96	59	97	104	92	80	78	93	12.758	94 ^{CDEF}
48	91	99	76	64	91	89	94	83	13.763	89 ^{DEF}
86	72	78	84	81	77	74	78	89	11.028	86 ^{DEF}
63 b	82	81	78	83	94	78	80	84	13.924	82 ^{EF}
5	71	76	87	54	67	74	63	61	13.742	71 ^F

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 42b Main effects and interactions for sensory panel tenderness.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						
37				.0452	.0150	
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 43a. Least square subclass¹ means and standard errors for sensory panel juiciness on a 150mm scale.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
93	104	105	111	107	115	109	103	120	7.079	109 ^A
79	115	98	100	104	114	113	108	103	9.962	106 ^{AB}
69	117	98	95	84	106	111	107	108	7.933	105 ^{AB}
98	95	96	107	98	114	110	103	109	9.487	105 ^{AB}
91	86	124	103	115	112	109	103	98	10.072	103 ^{AB}
88	100	103	98	104	104	102	92	109	6.996	101 ^{ABC}
100	104	103	108	98	97	110	86	102	7.867	100 ^{ABC}
34	106	83	106	96	103	79	107	109	9.361	99 ^{ABC}
110	101	90	116	100	105	89	103	108	9.104	99 ^{ABC}
43	91	98	103	102	112	106	75	110	9.76	96 ^{ABC}
48	107	99	99	90	91	104	90	98	6.172	96 ^{ABC}
1	104	82	104	83	99	110	95	84	9.619	95 ^{ABC}
63 a	95	107	86	103	94	104	89	83	7.423	94 ^{ABC}
108	92	101	81	117	95	94	89	101	9.281	94 ^{ABC}
14	94	88	103	96	94	93	89	104	4.855	93 ^{ABC}
63 b	87	110	94	103	110	88	20	91	8.612	93 ^{ABC}
97	108	94	90	76	102	88	97	99	6.599	92 ^{ABC}
87	105	82	98	71	91	109	101	101	8.98	91 ^{ABC}
40	107	115	97	89	100	96	94	93	9.78	90 ^{ABC}
50	90	95	90	93	103	84	79	78	10.42	88 ^{ABC}
86	89	91	64	87	95	78	94	100	10.098	86 ^{ABC}
111	82	96	99	95	86	87	92	84	9.206	86 ^{ABC}
37	82	85	48	88	116	77	93	85	12.019	85 ^{BC}
5	98	88	86	87	68	91	86	91	10.5	82 ^{BC}
39	97	93	87	57	93	84	94	88	11.537	78 ^C

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 43b Main effects and interactions for sensory panel juiciness.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34		.0374				
37				.0153		
39						
40						
43						
48				.0340		
50						
63.1						
63.2						
69						
79						
86						
87				.0143		
88						
91						
93						
97		.0436				
98						
100						
108		.0425				
110						
111						

Table 44a. Least square subclass¹ means and standard errors for sensory panel flavor intensity on a 150mm scale.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
14	48	64	52	63	45	60	45	60	6.549	56 ^A
91	49	54	43	64	53	47	46	57	6.128	53 ^{AB}
63 b	52	52	36	58	44	52	51	62	6.06	52 ^{AB}
98	46	64	46	60	48	47	53	59	7.892	52 ^{ABC}
110	46	60	59	53	37	50	51	57	6.36	52 ^{ABC}
87	55	43	51	55	41	40	40	65	4.548	51 ^{ABCD}
43	52	63	46	54	56	47	42	47	6.065	50 ^{ABCDE}
48	59	50	50	48	41	40	63	55	7.216	49 ^{ABCDE}
93	49	57	44	57	43	42	45	56	5.064	48 ^{ABCDEF}
97	62	61	42	49	42	35	46	42	5.254	47 ^{ABCDEFG}
40	45	44	39	42	31	46	40	47	6.55	46 ^{ABCDEFG}
88	49	46	40	55	34	40	49	49	5.907	46 ^{ABCDEFG}
63 a	44	61	44	40	35	52	48	47	7.09	45 ^{ABCDEFG}
100	45	48	42	49	38	48	31	40	6.279	43 ^{ABCDEFG}
108	47	48	42	34	42	33	48	40	5.646	43 ^{BCDEFGH}
34	42	41	46	37	31	32	47	33	5.78	41 ^{BCDEFGH}
111	37	43	40	36	33	32	48	44	4.169	39 ^{BCDEFGH}
69	45	42	33	33	35	39	36	38	6.049	38 ^{BCDEFGH}
5	41	39	27	37	31	32	38	37	5.478	37 ^{CDEFGH}
39	36	34	33	27	22	37	39	52	5.346	37 ^{DEFGH}
37	33	36	39	35	25	45	37	37	6.082	35 ^{EFGH}
1	36	44	32	31	35	27	35	35	4.76	34 ^{FGH}
79	40	36	35	29	21	36	36	35	4.165	32 ^{GH}
86	38	38	24	25	34	31	38	27	5.659	32 ^{GH}
50	28	22	24	30	13	23	26	30	5.695	26 ^H

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 44b Main effects and interactions for sensory panel flavor intensity.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14		.0030				
34						
37						
39				.0275	.0105	
40						
43						
48					.030	
50						
63.1						
63.2		.0242				
69						
79					.0310	
86						
87						.0097
88						
91						
93						
97	.0025				.0090	
98						
100						
108						
110						
111			.0369		.0369	

Table 45a. Least square subclass¹ means and standard errors for sensory panel chewiness on a 150mm scale.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
5	60	73	61	90	70	64	68	94	12.786	66 ^A
63 b	50	51	71	45	48	62	64	59	11.664	58 ^{AB}
86	57	65	55	67	71	70	53	55	10.898	53 ^{ABC}
34	31	55	38	44	60	62	48	80	13.55	49 ^{ABCD}
48	49	38	60	63	52	51	52	65	13.286	49 ^{ABCD}
98	45	62	65	54	33	33	51	55	15.323	47 ^{ABCD}
110	33	85	50	40	54	59	63	68	13.298	46 ^{ABCD}
100	64	34	52	42	41	45	65	45	11.811	45 ^{ABCD}
37	53	53	53	50	28	50	57	64	11.083	44 ^{ABCD}
14	48	65	54	49	51	48	42	65	14.347	42 ^{ABCD}
63 a	44	51	65	38	41	31	50	58	10.769	40 ^{BCD}
108	40	31	34	38	49	36	40	31	7.035	40 ^{BCD}
111	38	52	39	42	55	35	46	50	11.363	40 ^{BCD}
1	28	35	41	45	36	33	51	52	8.548	38 ^{BCD}
40	25	54	56	28	81	36	52	66	18.065	38 ^{BCD}
88	40	42	54	37	38	43	37	33	8.366	37 ^{BCD}
50	43	29	34	41	17	44	27	33	6.021	36 ^{BCD}
87	29	66	44	35	33	34	35	44	8.998	36 ^{BCD}
39	39	27	30	33	41	26	39	35	9.641	35 ^{BCDE}
91	60	30	56	31	36	34	35	36	12	34 ^{BCDEF}
79	20	25	27	25	40	32	25	24	7.891	29 ^{CDEF}
43	24	22	36	19	17	49	31	23	9.517	28 ^{DEF}
69	10	9	12	19	20	6	13	13	4.703	11 ^{EF}
93	34	35	36	9	18	17	14	17	11.678	11 ^{EF}
97	10	10	23	10	18	9	10	16	6.152	10 ^F

¹Appendix Table 1.

Overall means with the same superscript are not significantly different (p<0.05).

Table 45b Main effects and interactions for sensory panel chewiness.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1			.0287			
5						
14						
34	.0257					
37						
39						
40						
43						
48						
50				.0265		
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 46a. Least square subclass¹ means and standard errors for sensory panel off-flavor intensity on a 150mm scale.

Muscle	1	2	3	4	5	6	7	8	Std Err	overall
50	42	49	56	22	28	46	43	33	11.98	38 ^A
69	16	14	22	8	15	24	36	17	10.402	22 ^{AB}
5	16	8	12	26	14	14	32	19	10.866	21 ^{AB}
88	11	11	16	18	5	7	40	13	12.524	19 ^{AB}
37	17	24	21	5	17	18	33	33	10.229	18 ^{AB}
86	5	13	25	16	9	20	29	30	11.355	17 ^{AB}
1	2	9	9	6	6	15	40	10	10.52	16 ^{AB}
100	8	0	16	4	15	14	32	16	13.441	16 ^{AB}
39	7	23	27	14	7	19	24	17	10.963	15 ^{AB}
63 b	10	3	12	7	11	15	17	20	9.009	14 ^B
111	1	9	16	11	3	14	26	27	9.621	12 ^B
79	4	19	19	4	12	6	19	21	12.613	10 ^B
34	6	8	12	10	10	10	7	9	5.797	9 ^B
91	6	6	12	4	7	10	27	4	9.868	9 ^B
14	23	5	2	2	10	12	7	4	5.092	8 ^B
98	4	5	28	0	7	9	2	9	8.372	7 ^B
108	4	14	13	0	9	12	5	17	7.481	6 ^B
110	5	5	0	7	11	7	2	7	4.302	6 ^B
48	7	11	14	0	5	6	9	11	7.145	5 ^B
63 a	3	17	9	4	0	9	6	6	7.195	5 ^B
93	5	7	2	0	2	3	8	8	4.761	3 ^B
40	0	6	2	0	5	6	7	13	6.141	2 ^B
43	7	15	8	4	0	3	5	10	7.112	2 ^B
87	0	12	3	0	1	0	9	12	6.393	2 ^B
97	4	4	2	0	2	0	0	9	2.764	1 ^B

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 46b Main effects and interactions for sensory panel off-flavor intensity.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14			.0294			
34						
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						

Table 47a. Least square subclass¹ means and standard errors for Instron peak force required(kg).

Muscle	1	2	3	4	5	6	7	8	Std Err	all
5	5.98	5.64	6.32	6.69	6.59	5.81	5.66	6.49	0.747	5.83 ^A
86	5.46	4.9	6.54	6.31	5.7	5.77	5.47	6.32	0.53	5.55 ^{AB}
63 b	6	4.79	6.42	5.89	5.94	5.24	4.96	5.79	0.442	5.41 ^{ABC}
111	5.37	4.04	5.54	5.33	5.53	4.71	5.1	5.4	0.501	5.07 ^{ABCD}
48	5.06	4.29	5.47	5.55	4.99	4.96	4.72	5.08	0.455	5.04 ^{ABCD}
34	5.56	4.79	4.33	5.59	5.53	5.22	4.01	5.84	0.682	4.95 ^{ABCDE}
108	4.68	4.81	5.44	4.56	5.8	5.46	5.39	5.66	0.482	4.95 ^{ABCDE}
37	5.1	4.35	4.99	5.25	4.75	4.65	4.86	5.15	0.495	4.81 ^{ABCDEF}
63 a	4.57	3.72	4.73	4.54	4.83	4.39	5.3	5	0.462	4.81 ^{ABCDEF}
1	4.52	3.85	5.09	5.24	5.44	4.38	5.01	4.93	0.504	4.76 ^{ABCDEF}
110	4.37	5.32	5.67	4.5	4.73	4.81	4.54	5.26	0.449	4.73 ^{BCDEF}
100	5.3	4.25	5.72	4.36	4.52	4.52	5.31	5.08	0.504	4.69 ^{BCDEF}
50	4.57	4.12	4.16	4.43	4.59	4.47	4.61	4.94	0.388	4.39 ^{CDEFG}
39	4.39	3.35	4.38	4.67	4.91	4	4.46	4.52	0.443	4.36 ^{CDEFG}
88	3.89	3.58	4.46	4.26	4.55	3.77	4.47	4.51	0.362	4.25 ^{DEFG}
98	3.95	3.79	4.24	4.6	4.66	4.09	3.86	3.88	0.501	4.1 ^{DEFG}
79	3.36	3.52	4.56	3.77	4.54	3.69	4.45	4.17	0.488	3.98 ^{DEFGH}
91	4.31	4.24	4.34	3.8	4.13	4.08	3.82	4.67	0.58	3.98 ^{DEFGH}
87	4.11	5.22	3.97	3.92	3.47	3.73	4.23	3.91	0.478	3.93 ^{EFGH}
43	3.47	3.43	3.48	4.4	4.82	3.97	3.51	3.56	0.434	3.84 ^{FGH}
40	2.85	3.3	3.33	3.55	3.29	3.44	3.25	3.89	0.427	3.47 ^{GHI}
14	3.37	3.42	3.57	3.3	3.44	3.62	3.46	4.54	0.298	3.46 ^{GHI}
69	3.25	2.84	3.48	3.31	2.88	2.73	3.26	2.99	0.381	2.98 ^{HIJ}
93	3.08	2.61	2.59	1.93	2.53	2.58	2.48	2.42	0.334	2.38 ^{IJ}
97	2.15	2.38	2.62	2.13	2.84	2.52	2.1	2.43	0.28	2.29 ^J

¹Appendix Table 1.

Overall means with the same superscript are not significantly different ($p < 0.05$).

Table 47b Main effects and interactions for Instron peak force.

Muscle	Carcass Weight	Carcass % Lean	Carcass pH	Weight* % Lean	Weight* pH	% Lean* pH
1						
5						
14						
34						.0276
37						
39						
40						
43						
48						
50						
63.1						
63.2						
69						
79						
86						
87						
88						
91						
93						
97						
98						
100						
108						
110						
111						