



National Retail Benchmarking for Pork 2018

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Objectives

The objective of this study was to quantify pork quality attributes in the retail meat case nationwide. Similar evaluations were conducted in 2012 and 2015. The comparisons of the benchmarking projects show trends in pork products in nationwide retail stores.

Materials and Methods

Eighty-five stores representing 26 retailers in 15 cities were visited. Subjective color score (1–6) and subjective marbling score (1–10) on center-cut loin chops was assessed by an experienced grader under lighting of the self-serve meat case. Four individual loin chops with at least 50% lean exposed were randomly selected for evaluation from ten retail packages for each brand and enhancement type. Preference was given to boneless, 2.5 cm-thick center-cut loin chops where available. Ten additional packages of chops for each brand and enhancement type were evaluated in-store and purchased. Each of the purchased packages were labeled and each chop within a package was identified for later evaluation. The purchased packages were subsequently placed inside a cooler and transported to a temporary lab station where chops were again subjectively evaluated for color and marbling under controlled lighting and evaluated in the center of the loin muscle for instrumental color (CIE L*, a*, and b* color space values) using a calibrated Minolta Colorimeter and a Hunter Colorimeter. Chops were then vacuum sealed and immediately placed in the freezer. The samples were later packed in a cooler with dry ice and shipped to the University of Florida on dry ice. After arrival, they were placed in frozen storage until thawed for cooking and shearing. Chops were weighed prior to

and after cooking on open hearth, adjustable heat grills until reaching 65°C then evaluated for slice shear.

Data was analyzed using the mixed procedure in SAS (v. 9.4, SAS Institute, Cary, NC). The model included enhancement type (EN or NON), and the interaction between enhancement type as fixed effects. Package nested within store, brand, and purchased (yes or no) was fit as a random effect.

Results

The USDA AMS defined “Tender” as having a minimum threshold values for slice shear as 20.0 kg and “Very Tender” at 15.3 kg, respectively. Sixteen percent of the instore evaluated and purchased retail packages were enhanced (247 and 119 retail packages, respectively). Means for instore enhanced (EN) and non-enhanced (NON) chops were 2.52 and 2.70 for subjective color and 2.25 and 2.65 for subjective marbling, respectively. Means for chops purchased for EN

Table 5.

Simple statistics						
Trait	n	Mean	Min.	Max.	SD	CV
Instore color	3235	2.67	1.00	5.00	0.68	25.41
Instore marbling	3230	2.59	1.00	10.00	0.89	34.34
Controlled color	1539	2.22	1.00	4.00	0.68	30.47
Controlled marbling	1539	2.15	1.00	10.00	0.88	40.67
Japanese color	1519	2.14	1.00	5.00	0.79	36.87
Minolta L*	1525	56.77	45.41	71.01	3.30	5.81
Minolta a*	1525	15.58	10.54	23.58	1.91	12.25
Minolta b*	1525	10.74	4.68	19.13	1.57	14.65
Hunter L	1505	58.42	40.92	69.79	3.78	6.47
Hunter a	1505	14.91	3.14	22.36	2.18	14.65
Hunter b	1505	14.24	5.39	19.51	1.81	12.7
Cook loss, %	1531	14.06	-10.53	30.50	4.96	35.31
Slice shear, kg	1532	15.62	5.52	44.39	5.05	32.35

and NON chops under controlled lighting were: subjective color (2.07 and 2.25), subjective marbling (1.89 and 2.21), Minolta L* (56.35 and 56.86), Minolta a* (15.48 and 15.61), Hunter L (56.99 and 58.69), Hunter a (13.98 and 15.08), cook loss (13.02 and 15.64%), and slice shear (12.68 and 15.63 kg).

Conclusion

Results indicate extensive variation for color, marbling, cooking loss and tenderness exists in the pork meat case. Enhancement continues to improve tenderness though less enhanced pork is found in the marketplace. However, regardless of enhancement, the average value for slice shear of center loin chops were quite tender.