



Fresh Color and pH of Damaged Strip Loins

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Objectives

Damage on beef cuts is usually caused during dressing or trimming of unacceptable superficial areas. On strip loins, subcutaneous fat removal and exposure of lean are the most important causes of damage. Industry quotes obtained in January 2016 revealed that damaged strip loins are approximately marked down US \$2.30, US \$1.40, and US \$1.20 per pound, for USDA Prime, Choice, and Select, respectively. The aim of this study was to evaluate the effect of damage on fresh quality attributes of strip loins.

Materials and Methods

Two different sets of data were collected for this experiment. Set 1– Strip loins ($n = 1,149$) were allocated to 3 USDA grade treatments (Prime, Choice, and Select) and 2 damage treatments (Damaged and Not Damaged) to evaluate fabrication pH and subjective color. Set 2– Strip loins ($n = 256$) were allocated to 2 USDA grade treatments (Choice and Select) and 2 damage treatments (Damaged and Not Damaged) to evaluate objective color. For both sets, strip loins were evaluated during fabrication from 18 to 24 h post mortem. Color analysis was performed on the cranial side of the *m. Longissimus dorsi*. Subjective evaluation was performed according to the Japanese Beef Color Standards (BCS; Japan Meat Grade Association). Objective color was assessed by taking the average of three readings from different areas, acquired with a HunterLab Miniscan XE (CIE L*, a*, and b*). For

pH analysis, a Hanna HI99163 pH meter was used. Probe was directly inserted into the *m. Longissimus dorsi* after taking color evaluation. Data were analyzed using the GLIMMIX procedure of SAS (SAS Inst. Inc., Cary, NC).

Results

Higher percentage of damaged strip loins was observed on USDA Choice, followed by Prime, and Select, 15.99%, 10.20%, and 7.66%, respectively ($P \leq 0.05$). No differences were observed on pH from damaged and not damaged strip loins, 5.58 and 5.57, respectively ($P = 0.54$). Damaged strip loins had brighter color based on BCS when compared to not damaged, 3.7 and 4.1, respectively ($P \leq 0.05$). No interaction between main effects USDA grade and damage was observed for objective color. However, damaged strip loins had significant lower values of a* (redness) and b* (yellowness) when compared with not damaged (a* = 26.75 and 24.72; b* = 22.99 and 21.55; for not damaged and damaged, respectively). No significant difference was observed for L* values (lightness).

Conclusion

Minimal differences on fresh quality attributes were observed between damaged and not damaged strip loins. Differences on color do not impact visual preference. New alternatives about how to optimize the use of damage cuts such as portioning for case ready or creating center cut portions from a damaged strip loin, can eliminate economic losses and still add value on final products.