



Factors associated with surface iridescence in fresh beef

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Abstract Objective of this study was to determine the effect of

three carcasses with “B” maturity scores), represented a somewhat narrow marbling range (35 carcasses with “small” marbling scores, 29 carcasses with “slight” marbling scores), represented both common sex classes (50 steer carcasses, 14 heifer carcasses), and included six “dark cutting” carcasses (USDA, 1997). Carcasses were held at 0–2 °C until fabrication. At 7 days postmortem, the following muscles were excised from one hindquarter of each carcass: Biceps femoris (BF), Gluteus medius (GM), Longissimus lumborum (LD), Psoas major (PM), Rectus femoris (RF), Semimembranosus (SM), Semitendinosus (ST), and Tensor fasciae latae (TF). Each muscle was then bisected perpendicular to the long axis of the muscle at the approximate mid point.

2.2. Measurements

Fresh cut surfaces of muscles were allowed to bloom for 90 min. A trained graduate student

Factors associated with surface iridescence in the ST were further examined because iridescence was observed to a much higher degree in the ST as compared with other muscles tested. Correlations of carcass traits, colorimeter values, pH, cooking traits and Warner-Bratzler shear force with surface iridescence of the ST were calculated (Table 1). Higher ST surface iridescence scores were associated with more youthful lean maturity

scores, larger ribeye areas, higher L*, a*, and b* colorimeter values, lower ultimate pH values, and faster cooking ($P < 0.05$). Table 2 presents least squares means for carcass traits, colorimeter values, pH, cooking traits, and Warner-Bratzler shear force with ST iridescence. Carcasses with ST muscles receiving iridescence scores of one had less ($P < 0.05$) youthful lean maturity values as compared with carcasses with ST muscles receiving

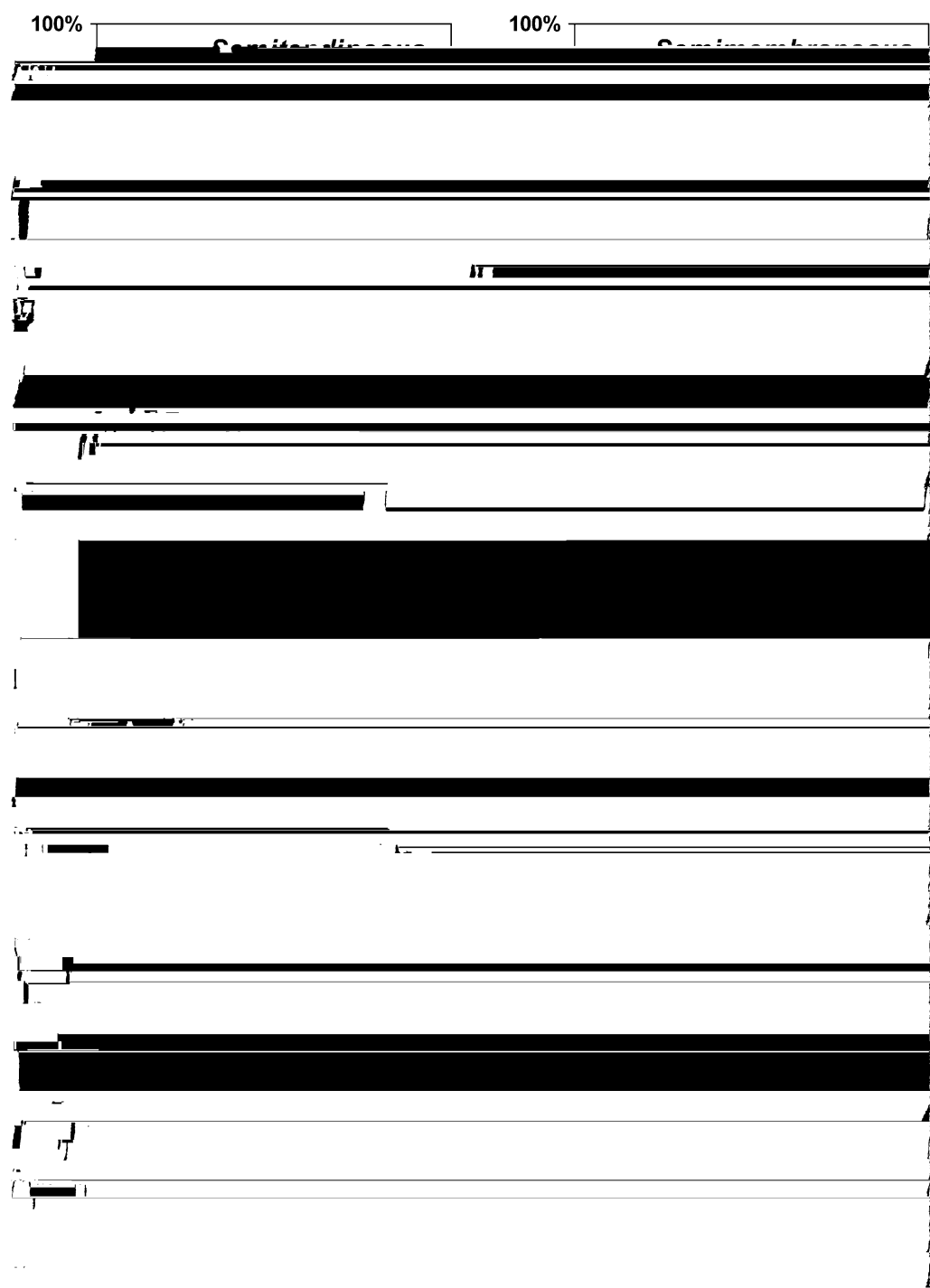


Fig. 2. Distribution of surface iridescence scores for various beef muscles (1 = no iridescence, 2 = slightly iridescent, 3 = moderately iridescent, 4 = very iridescent, 5 = extremely iridescent) ($P < 0.05$).

iridescence scores of 2, 3, and 4. Carcasses with ST muscles receiving iridescence scores of four had larger ($P < 0.05$) ribeye areas as compared with carcasses with ST muscles receiving iridescence scores of 1, 2, and 3. Semitendinosus muscles with iridescence scores of one had lower ($P < 0.05$) L^* values as compared with ST muscles with iridescence scores of 3 and 4. Semitendinosus muscles with iridescence scores of one had lower ($P < 0.05$) a^* and b^* values as compared with ST muscles with iridescence scores of 2, 3, and 4. Semitendinosus muscles with iridescence scores of one had higher ($P < 0.05$) ultimate pH values as compared with ST muscles with iridescence scores of 2, 3, and 4. Surface iridescence had no effect ($P > 0.05$) on cooking loss or 4.