

## BEEF PALATABILITY AS INFLUENCED BY PRODUCTION, CARCASS AND POSTMORTEM MUSCLE TRAITS

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Advances in management technology and genetics make it possible for beef producers to meet consumer demands for a reduction in fat. However, a fundamental problem to the economic success of these production techniques is associated with the current marbling-based quality grading system. Feeding programs extended to ensure marbling deposition for "U. S. Choice" quality often result in the overfattening of cattle. Should this trend continue in an expanding health oriented society, beef's share in the market place could decline substantially.

To date, research has failed to consistently document the marbling-tenderness relationship inferred in our quality grading system. Recent studies suggest that additional carcass traits have higher correlations with tenderness than marbling score. Factors such as time-on-feed, rate of gain, fat thickness and carcass weight have been suggested as substitutes for, or adjuncts to, the marbling concept.

In this study, 48 Angus X Hereford steers approximately 16 months of age were obtained from a native range stocker program. Six steers were slaughtered to serve as a grass-fed control. The remaining 42 steers were fed an ad libitum corn-based diet (upgraded to 95% concentrate) and serially slaughtered over a 196 day finishing period (28, 56, 84, 112, 140, 168, 196 days). At the time of slaughter, one randomly selected side of each carcass was trimmed of subcutaneous fat in the wholesale rib region (5th - 13th ribs). All sides were chilled at 1 - 2° C during which time ribeye muscle temperature and pH decline were monitored intermittently over a 24-hour period. Following quality and yield grade data collection, control sides were physically separated for aggregate weights of fat (.5 inch and total trim), lean and bone. Steaks were removed from all sides (trimmed and control) and frozen for proximate analyses and palatability determinations. Sensory panel ratings for discernible differences in tenderness, juiciness, connective tissue amount, flavor intensity and ease of fragmentation are nearing completion.

This study will examine:

- 1) The interrelationships between time-on-feed, rate of gain, carcass weight, subcutaneous fat thickness, marbling score and beef palatability.
- 2) The effects of postmortem temperature and pH on ribeye tenderness.

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