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ABSTRACT

# Beef Tenderness and Palatability as Influenced by Chemical Measures and Quality and Yield Grade Factors

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Data were collected on 315 steer and heifer carcasses produced from Angus, Charolais and reciprocal cross dams between 1972 and 1977, inclusive. Dependent variables studied were taste panel tenderness, juiciness and flavor and Warner-Bratzler shear values of steaks from the longissimus muscle. Step-down multiple regression analyses were conducted to evaluate the influence of carcass cutout variables, carcass grade predictors and chemical composition on the four dependent palatability factors. Variables (P>.20) were eliminated from the model through the step-down analyses. Final reduced models for taste panel tenderness, shear tenderness, flavor and juiciness explained 41.8, 44.5, 42.1 and 53.4% of the variation in each trait, respectively. Marbling alone accounted for .4% of tenderness variation and did not remain (P>.20) in the flavor, juiciness and Warner-Bratzler shear analyses. Regression analysis indicated a 16-unit increase in marbling would be required to produce a unit increase in taste panel tenderness. Further regression analyses were conducted to assess the influence of one sensory trait on the other two. A change of 1.4 units in flavor and 3.5 units in juiciness resulted in a 1 unit taste panel tenderness change. Correlation coefficients between tenderness and flavor, tenderness and juiciness and flavor and juiciness were .67, .62 and .72, respectively.