

CHARACTERIZATION OF BISON FINISHING AND MANAGEMENT SYSTEMS: EFFECTS ON CARCASS TRAITS, MEAT QUALITY, AND SENSORY ATTRIBUTES OF BISON BULLS

Researchers.

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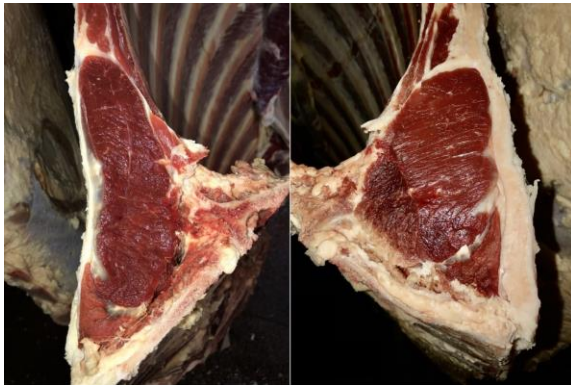
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Rationale. While commercial production and consumption of bison continues to increase, meat quality attributes such as healthfulness, tenderness, juiciness, flavor, and consumer preference of bison meat are not well understood. This Institute study was undertaken to characterize the



influence of finishing system (grain-based diet versus pasture diet) and animal age on carcass characteristics, meat quality, nutritional composition, and consumer preference for bison meat. Outcomes from this work will also help define more detailed studies on how animal diet variation and breed influence bison meat nutritional profiles and healthfulness. This study on bison bulls is a companion study to our previous work on bison heifers.

Outcomes. Grain-finished bison bulls had greater live and hot carcass weights, dressing percentage, ribeye area, back fat, and marbling scores when compared to grass-finished. Grass-finished bulls had moderately yellow fat compared to grain-finished. Steaks from grain-finished bulls had increased crude protein and fat content, and decreased moisture. Grain finishing produced steaks with increased cholesterol and higher concentrations of monounsaturated fats, while polyunsaturated fats were higher with grass finishing. Grass-finished steaks were more tender at 4 and 7 days of aging, but there was no difference after 14 days. Tenderness of all steaks improved with aging and freezing. Sensory ratings by a consumer panel comparing grain- and grass-finished steaks did not differ for overall liking, texture, toughness, juiciness, or flavor intensity, but panelists preferred the aroma and overall flavor of grain-finished bulls. Older bulls were heavier and larger but age did not influence skeletal maturity (ossification) between bison bulls at 29 and 36 months of age. Older bulls were significantly tougher and required 21 days of aging to reach an acceptable level of tenderness. For a more complete summary please see the following:

Newton, C.J. 2022. Effect of finishing system and animal age on carcass traits and nutritional profile of bison bulls. MS Thesis. South Dakota State University.

<https://openprairie.sdstate.edu/cgi/viewcontent.cgi?article=1477&context=etd2>