Adaptation of Beef Cattle to Stressful Environments

Evaluation of cattle phenotypes and genotypes as to adaptation to stressful environments involves

- Characterization of environments as to potential stresses to beef cattle
- Characterization of phenotypes/genotypes as to their ability to manage combinations of stresses provided by specific environments
- Determination of phenotype/genotype × environment interactions
- Identification of physiological, nutritional, and behavioral mechanisms by which animals manage stress
- Determination of the genetics for the mechanisms animals employ to manage stress

This research is accomplished through a team approach facilitated by the Southern Beef Breeding Project, the state initiative in beef cattle evaluation, and the federal beef initiative.

Integrated Beef Systems for the Production of Consistently Distinctive High-quality Beef

Evaluation of system elements impacting the quality of the product involves

- Characterization of beef traits important to consumers (e.g., tenderness, juiciness, flavor, fat content, “naturalness,” and cut size)
- Identification of system elements sensitive to product quality (e.g., genetics for adaptation, genetics characterizing the growth curve, supplementation regimes conducive to marbling, nutritional management of the growth curve)
- Determination of the relationship of these system elements and beef traits important to consumers

This research is accomplished through a team approach in conjunction with the adaptation project with industry involvement: Bonsmara Natural Beef LLC, SYSCO Foods, and Purina Mills.

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