

UT Animal Science Beef Cattle Research Overview



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The research mission of the UT Department of Animal Science is to “develop and transfer new knowledge in the animal commodities that make significant contributions to the economy of Tennessee and the world.”

To accomplish this mission, the department has faculty who conduct a wide scope of research. Following is a brief description of a few trials that are directly relevant to beef cattle. Detailed data will not be included as this is intended to be a summary of the ongoing research projects. Final detailed results are, or will be, published, and any resulting management practices will be disseminated through UT Extension.

Much of the current animal science research addresses the efficient use of forage for cow-calf and stocker production. These efforts include using warm-season native grasses to fill the “summer slump,” when fescue pastures are dormant. It has been demonstrated that warm-season native grasses have the capability to support a high stocking density at high rates of gain in the midsummer months.

Managing fescue remains an important topic in Tennessee. Researchers are investigating whether specific DNA markers can be identified in cattle that result in better performance on endophyte-infected fescue. This could lead to identifying cattle that are more profitable and productive on fescue pastures and to selectively breeding those cattle to enhance the benefits. In addition, research is investigating whether there is a difference in the negative response to toxicosis in dry fescue hay versus fescue baleage.

Many years of data are being studied to determine if a link exists between yearling carcass ultrasound data and cow longevity. Those findings should aid in selecting better replacement heifers. Historical records from the Central Bull Test will be examined for correlations between performance and structural measures that indicate fertility.

Nutrition is the most costly input for cow-calf and stocker producers. To optimize nutritional efficiency, researchers are testing the most appropriate blend of commodity feeds for growing

cattle-fed rye baleage. These results demonstrate that while corn+cottonseed meal, corn gluten feed, dried distillers grains (DDGs) and a combination of gluten+DDGs all produce adequate gains, the optimal supplement was straight DDGs.

Relatively new findings in the Midwest have indicated that supplementing dry cows during the last three months of pregnancy can improve the value of their offspring into adult productivity (fetal programming). This fall, the faculty will be working together to determine if supplementing dry cows with energy will have a similar result in the Southeast.

Phosphorus is the most expensive component of free-choice mineral supplements, and its cost has continued to increase. Because forages often provide an adequate amount of phosphorous, some mineral formulas now include a reduced amount. To determine if strategic supplementation of phosphorus might be helpful, a commercially available, injectable phosphorus and vitamin B12 supplement is being tested as a treatment for weaned calves prior to transportation. Feedlot performance, health and carcass value will be analyzed. The supplement is also being incorporated into an estrus synchronization protocol to determine if it will improve pregnancy rates due to artificial insemination.

These are examples of how the UT Department of Animal Science seeks to improve the livelihoods of the farmers and communities it serves. In the past year, the department has undergone an administrative change with the hiring of Dr. Neal Schrick as the new department head. With this appointment has come a reinvigoration of all three arms of the department (research, Extension and teaching). Animal Science is also adding a faculty position at the Plateau AgResearch and Education Center that will be devoted entirely to nutrition research.

The animal science faculty are open to input from cattlemen and, even in the face of limited resources and staff, strive to respond to that input in every way possible. Please feel free to contact the department with specific questions about the research described here or issues that need to be addressed through new research. Δ

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