

## Carcass Quality, Consumer Acceptance and Management of Cattle on the Ranch

Arkansas' beef production systems are predominately forage based cow-calf or stocker systems. Although drylot background systems are also common, there is virtually no cattle finishing industry in Arkansas. Most of us involved in Arkansas beef production believe the cattle we produce are so far removed from the retail shelf that how we manage our cattle will have little impact on carcass quality, tenderness, or consumer acceptance of our product. Recent research conducted by the University of Arkansas, Department of Animal Science has investigated exactly how management on the ranch in Arkansas affects finishing performance, carcass quality, tenderness, and consumer acceptability of beef.

Feedlots and backgrounding operations are increasingly turning to aggressive implant programs in order utilize gains in efficiency to offset high feed prices. Two recent University of Arkansas studies, funded by the Arkansas Beef Checkoff program, demonstrated that pre-finishing use of hormonal implants for cattle finished as either calves (entering the feedlot at 280-days of age) or yearlings (entering the feedlot at 415-days of age) efficiently increased gains and feed efficiency. When cattle were implanted upon entry into feedlot, slaughter weights were increased by 16% compared to cattle not receiving first implant until day 50 of finishing. Cattle entering the feedlot as yearlings gained more per day and had better feed efficiency than calf-feds. Implanting calves early in the finishing period improved feed efficiency by 18% and improved feed efficiency of yearlings by 12%. It is easy to see the economic potential of implanting growing and finishing cattle because of the increases in growth rate and efficiency, but what are the costs.

Cattle used in one study were genetically selected for high marbling ability. The calf-feds graded 86% USDA Choice when implants were delayed until day 50 of finishing and graded 78% USDA Choice when implants were given both pre-finishing and upon feedlot entry. Yearlings managed with a delayed implant program graded 94% USDA Choice; however, yearlings managed with pre-finishing implants and implants early in the finishing program only graded 46% USDA Choice. The carcass quality of cattle that had not been genetically selected for their ability to marble (cattle with high Brahman influence) in the second study was not affected by pre-finishing management grading an average of 61% USDA Choice.

All cattle in these studies were finished before reaching 20 months of age, so there were no appreciable changes in tenderness, but when steaks from these carcasses were evaluated by a panel of consumers, their responses indicated that tenderness and juiciness were reduced with aggressive implantation. This research indicates that implantation should be delayed if cattle are placed on a grazing program that limits nutrient intake, the cattle had been selected for their genetic ability to marble, and the cattle will be marketed at finishing on a grid based pricing system that places economic emphasis on carcass quality.

As cattle managers, less may be done to have a positive impact on carcass quality once the calf is on the ground; whereas, management could be more apt to negatively impact carcass quality. The University of Arkansas, through research funded by the Arkansas Beef Checkoff program is studying how calf management in Arkansas, prior to finishing, is either positively or negatively affecting both carcass quality and consumer acceptance.

If interested in how your management affects consumer acceptance of beef, the University of Arkansas and the Arkansas Beef Council are conducting a conference on April 9 covering the factors affecting beef quality and the balancing act between offering consumer-friendly beef and running a profitable cattle operation. This conference “Return on Investment from Pasture to Plate” begins at 9:30 am at UACC-Morrilton. For more information for this free conference contact Sandy Allen at (501) 671-2177 or [sallen@uaex.edu](mailto:sallen@uaex.edu).