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Hereford Breed Improves Muscling

The Hereford breed has made a major advancement in carcass composition the last 10 years by increasing ribeye area significantly, thereby affecting the value of commercial Hereford cattle.

Ribeye areas from more than 100,000 head of fed steers and heifers of Hereford influence — steers and heifers meeting Certified Hereford Beef® (CHB) live animal and carcass parameters — were measured at the National Beef Packing Co. LLC processing facilities in Liberal and Dodge City, Kan., utilizing unbiased electronic visual imaging technology. Analysis of the data has quantified the ribeye area distribution across a large population of Hereford-influenced cattle, establishing a benchmark for the breed. The dataset represents the single largest breed-specific benchmark to date and unveils an interesting breed trend.

The 2005-06 Hereford ribeye area survey indicates without a doubt that the breed has improved ribeye size and ribeye per hundred pounds of carcass weight significantly the last 10 years. Average ribeye area was 13.5 inches in the more than 100,000 steers and heifers measured throughout the year, with an average carcass weight of 808 lb. or 1.67 square inches per hundredweight (cwt.) carcass.

Gary Smith, Colorado State University (CSU) meat scientist, challenged Hereford breeders to improve the muscling in their cattle back in 1996 at the 12th World Hereford Conference in Ft. Collins, Colo., which set the ball in motion for more aggressive selection for carcass traits.

Compared to 10 years ago, the breed has made a large leap. In 1996 the American Hereford Association (AHA) funded a Hereford Type Change Study at CSU to compare Hereford breed trends from the 1950s through the 1990s. CSU scientists organized the unusual study as they artificially mated straightbred commercial Hereford cows to representative bulls from the 1950s, 1970s and 1990s. The calves from that study were fed out to a specific fat thickness end point and the results were reported at the World Hereford Conference.

The results of the study vividly described the progression the breed had made in birth weight, weaning and yearling growth, feed efficiency, carcass weight, muscling, and quality grade throughout 40 years of selective breeding. Interestingly enough, from 1950 to the mid-1990s, finished live weights of steers improved by 178 lb. while feed conversion remained similar across the generations. On the other hand, ribeye area only improved .8 of an inch despite more than 100 lb. of improvement in carcass weight. As a result of the study, Smith made the statement, "The Hereford breed must cautiously improve muscling, gradually turning up the dial while never sacrificing time honored traits such as fertility, efficiency and doability in the cattle."

During the last 10 years, Hereford breeders have focused on modern technology in order to make better selection decisions in the area of carcass composition. The use of ultrasound technology, implementation of carcass expected progeny differences (EPDs) beginning in 1995 and a more aggressive focus on selecting for muscle shape all played a role in the decade-long breed trend. The increase in ribeye size can be attributed to heavier cattle, but composition has changed as well, as evident by the change in ribeye area per cwt.

The 1996 study reported a 12.3 average ribeye in the 1990s model cattle weighing an average of 1,261 lb. live, with an average carcass weight of 760 lb. or 1.61 square inches per cwt. of carcass. The population of Hereford cattle measured within the 2005-06 National Beef Packing Co. annual production indicated a major economically relevant change in the commercial pool of Hereford cattle, improving more than 1 square inch of ribeye area and .03 inch per 100 lb. of carcass. Had the cattle been fed to lighter endpoints this year, we would have seen an even higher ribeye per cwt. result.

The research revealed interesting management parameters as well. Ribeye area remained on the plus side of the yield grade equation up to nearly 850 lb. of carcass or a 1,350-lb. live weight. Beyond that weight, the Hereford cattle declined significantly in cutability value as the ribeye growth did not keep pace with fat deposition. Thirteen hundred pounds is plenty heavy for any steer and reflects the fact that Hereford cattle fit within packer requirements for weight and yield much more effectively than even a decade ago. **HW**