



# Project Proves Profitability of Hereford-Angus Cross

*Economic analysis of Circle A Ranch Heterosis Project results predicts an advantage of \$514 net per cow over a period of 10 years.*

Using Hereford bulls on Angus-based cows will give producers advantages in profitability, cash flow, herd size, and retained female fertility and longevity according to a recently

completed study at Circle A Angus Ranch. In fact, when the data were further analyzed for economic emphasis, the results showed an advantage of \$514 net per cow over a period of 10 years. That's a \$51 difference per cow per year.

Economic models also predicted that if replacement females are retained over a period of 10 years, Hereford-sired females will generate a 20% advantage in herd size for the same relative cost versus the straight Angus commercial cows because of increased fertility and longevity.

The study, conducted by Circle A Ranch

headquartered in Iberia, Mo., in cooperation with the American Hereford Association (AHA), was started in 2007. Mark Akin, Circle A Ranch manager, says, "The female side was what really peaked my interest, because we've bred purebred Angus for all these years, and I was curious if the heterosis from the cross would make available a better conception rate for us, and it did."

To start the project, Circle A Ranch AI-bred 600 commercial Angus cows to 10 Hereford bulls with the goal of comparing the best of its Angus herd to the best of the Hereford-Angus cross. The control group included progeny from three proven Angus sires. The average expected progeny



Jack Ward (left) and Mark Akin, Circle A Ranch general manager, discuss the research project that started in 2007. Data from the project compiled by sire is on Page 18.

differences (EPDs) of the Angus sires would place them in the top 30% of the Angus breed for birth weight and top 20% of the breed for weaning weight. All of the cows and resulting calves were commingled and managed the same.

Data were collected by Circle A staff and interpreted by Dan Moser, Kansas State University associate professor of genetics, and Vern Pierce, University of Missouri associate professor of agricultural economics.

The Hereford-cross calves showed the advantage from birth. Average birth weight for the Hereford-sired calves was 72 lb., 3 lb. heavier than the Angus sires, but still desirable and nearly ideal for commercial operations, according to Moser.

At weaning the Hereford-sired calves were 11.9 lb. heavier than the Angus-sired calves, despite the Angus sires ranking in the top 20% of their breed for weaning weight EPD.

After being weaned, a portion of the steers were fed at Circle A's feedlot in Huntsville, Mo., where the Hereford-cross steers outgained the Angus by about .15 lb. per day.

While both breed groups were similar for fat thickness (Angus = 0.52 versus Hereford = 0.54), the Hereford-sired steers had about 13 more lb. of carcass weight and about  $\frac{3}{4}$  of an inch more ribeye area.

Heifer calves were developed and bred at Circle A's Lineville, Iowa, ranch. The Hereford-sired heifers showed their prowess as productive females by boasting a 7% advantage in conception rate over the Angus heifers.

Seventy-five of the bred heifers were sold at Circle A's annual production sale and averaged \$110 more per head than their commercial Angus counterparts.

Maternal traits and the effect on birth and weaning weights of the calves will continue to be

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The steers were placed on feed efficiency test at Circle A Feeders. Individual feed intake was recorded and evaluated.

### About the project

In 2007 Circle A Ranch, Iberia, Mo., agreed to participate in a research project with the American Hereford Association designed to determine and measure the advantages of using Hereford genetics on commercial Angus cows.

Circle A used 10 Hereford bulls with the goal of comparing the best of its Angus herd to the best of the Hereford-Angus cross.

Throughout the project, weaning weight and economically relevant traits such as feedlot gain, feed efficiency and fertility of the black baldie females were all measured and compared to straight commercial Angus cattle. Dan Moser, associate professor of genetics at Kansas State University, analyzed and interpreted the collected data.

Results from the project documented the Hereford efficiency advantage. With a 7% increase in conception rate, along with improved feed efficiency and average daily gain, Herefords were proven the right choice for commercial producers today.

#### Project specifics:

- 600 Circle A commercial Angus females were randomly AI-bred to 10 Hereford sires, of both proven and unproven genetics.
- The control group included progeny from three proven Angus sires, one being the top Angus sire for registrations in 2008. The average EPDs of the Angus sires would place them in the top 30% of the Angus breed for birth weight and top 20% of the breed for weaning weight.
- Average birth weight for the Hereford-sired calves was 72 lb. — 3 lb. heavier than the Angus sires, but extremely desirable and nearly ideal for commercial operations.
- At weaning the Hereford-sired calves were 11.9 lb. heavier than the Angus-sired calves, despite the Angus sires ranking in the top 20% of their breed for weaning weight EPD.
- Resulting heifer calves were developed and bred at Circle A's Lineville, Iowa, ranch. Conception rates were tracked.
- A portion of the steer calves were placed on a feed efficiency test at the Circle A feedlot near Huntsville, Mo., and fed to harvest.
- While both breed groups were similar for fat thickness (Angus = 0.52 vs. Hereford = 0.54), Hereford-sired steers had about 13 more lb. of carcass weight and about  $\frac{3}{4}$  of an inch more ribeye area.
- While feed conversion was nearly identical, Hereford-sired steers outgained the Angus-sired steers by almost .15 of a lb. per day.
- Heifer calves were bred and part of the group was marketed through the Circle A Production Sale with the baldie average price \$110 more than the straight blacks.
- Circle A staff appreciated the disposition of the Hereford-sired calves. HW



measured as the retained heifers calve and rebreed.

Although difficult to measure, Circle A staff members say they were impressed with the baldies' quiet, easy-to-handle disposition as well.

Pierce evaluated the performance differences between the Hereford

and Angus groups including birth, weaning and feedlot growth and carcass data on the steer calves and pregnancy rates from the female progeny of the sire groups. He developed an economic model projecting the added value of Hereford heterosis over a 10-year period.

Pierce says, "The bottom line is if a rancher with Angus-based cows uses Hereford bulls compared to using Angus bulls and gets the same response as we had in this study, he will have improved cash flow, increased herd size and more calves to sell over a 10-year period." **HW**

## Circle A Ranch: Quality beef is its business



The 5,000-head feedlot near Huntsville, Mo., is all under roof with open sides. The building is 2,800 feet long and 120 feet wide. There are almost 7.5 acres under one roof. Pens are 100 feet by 40 feet.

Circle A Ranch is a 32,000-acre, 10,000-head seedstock and commercial cow-calf operation headquartered in Iberia, Mo., with satellite operations in Stockton and Huntsville, Mo., and Lineville, Iowa. Circle A's motto is "Quality beef is our business." The ranch is owned by the Dave Gust family.

Circle A markets more than 400 black and Red Angus bulls and 500 Angus females annually.

The 9,000-head commercial herd has provided a great "real life" testing ground for the registered seedstock herd. Jack Ward, AHA chief operating officer and director of beef improvement, says, "Circle A has done more than any beef seedstock operation in the world to accurately describe genetic differences for both output and input costs and develop a true profitability index."

As founder of the Angus Sire Alliance and partner with ABS Global, Circle A has aggressively tested the Angus breed's most promising genetics in its 9,000-head commercial herd and then rapidly multiplied the most profitable genetics in its high-quality registered herd.

In May 2007 the company started Circle A Feeders, a 5,000-head feedlot all under one roof, designed to capture added-value and increase returns for Circle A customers. To qualify, the calves must be sired by a bull or out of a female purchased directly from Circle A Ranch. The calves must weigh between 600-800 lb. as calf feds, have two complete rounds of vaccinations and be weaned for a minimum of 45 days.

The cattle are managed in the fully covered facility. Each pen is completely cleaned out about once a week and sawdust is replaced to ensure cattle comfort. Circle A staff members say the facility's roof and airflow system help to keep the cattle cool and comfortable throughout the area's hot and humid summer

months, as well as keep the cattle dry and warm in the rain and snow.

All the retained heifers are developed at Circle A's Lineville, Iowa, ranch. The heifers are sorted into contemporary groups and grown and bred at one location. During this time, the heifers are monitored carefully and must meet rigorous standards, or they are culled. Some are marketed as bred heifers at either the spring or fall sale; those remaining are retained as replacements in the cow herd.

By collecting data on both the feeder calves and replacement females produced at Circle A, the company is constantly re-evaluating and improving its program.

For more information on Circle A, visit [CircleARanch.com](http://CircleARanch.com). **HW**



There is no liquid manure handling system in the building. All of the cattle are bedded on sawdust, which does a good job of controlling odor and helping keep the cattle clean. The pens are cleaned regularly. The shavings are composted in a separate building adjacent to the feedlot (pictured here). It takes about a month to thoroughly compost this material before it is used on the ranch as fertilizer.