

The Efficiency Experts



Shane Bedwell is the chief operating officer and director of breed improvement of the American Hereford Association. He can be reached at sbedwell@hereford.org.

Data show that Hereford ranks as the most efficient breed.

This summer surely has been a hot one, but then again fall is right around the corner. Hopefully you have been able to capture some needed moisture, and your calf crop is shaping up to deliver another year of promise for the breed.

I want to remind everyone to start collecting DNA samples as soon as possible. The American Hereford Association (AHA) offers multiple ways to collect DNA through hair, blood or tissue sampling units (TSUs). Weaning time is a great opportunity to collect samples as calves will most likely go through a chute. Whether or not you plan to send these samples in for a genotype, you can at least have some insurance and flexibility if you would like to do so in the future. TSUs are simple to collect, and the sample is stored within the capsule so samples won't be mixed up after collection. For more information on how to order TSUs, visit Hereford.org/genetics/dna-testing/.

Across-breed adjustment

The United States Meat Animal Research Center (USMARC) recently has produced a "Journal of Animal Science" paper comparing the differences between breeds for gain and feed efficiency. This paper is a great start to eventually create an across-breed adjustment for dry matter intake (DMI) expected progeny

differences (EPDs) similar to what is done for basic traits. There is no denying the value of feed efficiency and conversion in the cattle business. Being able to identify genetic lines that predict these differences will be important to leverage the value of Hereford genetics. From an AHA standpoint, we have prototyped a DMI EPD that will allow for continued progress to be made. The AHA plans to release this trait with the new genetic evaluation update this fall.

Regarding the USMARC paper, I wanted to summarize the data and show what the researchers at USMARC discovered. Data were analyzed on approximately 5,600 growing steers and heifers from 2003 to 2012. From the results, I took the gain and intake differences for each breed and converted them to what they would be on a pound of dry matter (DM). I then wanted to compare these breed differences over the finishing period to see what the overall cost would be due to these performance differences.

Since Angus is used as the base breed for all USMARC across-breed adjustment information, I had to assume that the steers would consume 24 lb./day/DM and gain at a rate of 4 lb./day. Regardless of where this value is set, it is all relative, as the differences are what we are wanting to show. I then made another

assumption that I had a 650 lb. steer that I wanted to finish at 1,400 lb. By taking the differences associated in performance, I used a five-year average feed cost (Table 1) for a feedlot diet to figure what the feed cost would be. Feed cost data were acquired through the U.S. Department of Agriculture (USDA) Marketing Services. In Table 2 you will find the results from the USMARC paper utilizing the assumption that I made.

Results

Data show that Hereford ranks as the most efficient breed. Like the research done at Harris Ranch, Hereford has a marked advantage in cost of gain when compared to Angus. When expressed over the feeding period, it's nearly a \$20 advantage per steer. Even though days on feed were slightly longer for Hereford, the advantage in consumption and achieving similar gains resulted in Hereford coming out on top. A greater gap was achieved when comparing Red Angus and Simmental, which were \$22.79 and \$22.16 respectively, and still a \$5.80 gain when compared to Charolais. These results validate Hereford as the efficiency experts. **HW**

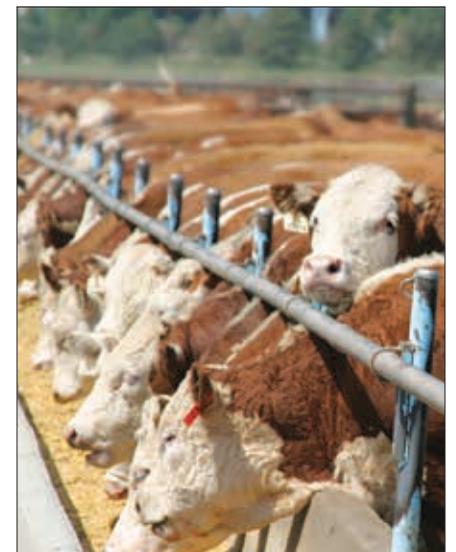


Table 1: Five-year average feed cost for a feedlot diet

Feed type	% in diet	5-year avg. \$/lb. DM
Corn	60	\$0.083
DDGS	20	\$0.084
Silage	15	\$0.058
Hay	3.5	\$0.068
Supplement	1.5	\$0.208
Total cost of diet		\$0.081

Data from USDA Agriculture Marketing Services, accessed 6/22/2017

Table 2: Performance and cost differences associated with USMARC feed efficiency paper

	DMI lb./DM	ADG	F:C	DOF	5-year avg. cost of gain	5-year avg. feed cost	5-year cost difference/steer
Hereford	22.26	3.92	5.67	191	\$0.459	\$344.87	0
Angus	24.0	4.0	6	188	\$0.486	\$364.62	\$19.75
Red Angus	23.32	3.85	6.06	195	\$0.492	\$367.66	\$22.79
Simmental	23.91	3.96	6.04	189	\$0.489	\$367.03	\$22.16
Charolais	22.85	3.96	5.77	189	\$0.467	\$350.67	\$5.80

Additional details relative to these research findings can be found in the 2017 journal article below:
 "Genetic variance and covariance and breed differences for feed intake and average daily gain to improve feed efficiency in growing cattle."
J. Anim. Sci. 95:1444-1450