

PERFORMANCE OF CALVES FROM HEIFERS Sired BY HIGH AND LOW MILK EPD Sires: PRELIMINARY RESULTS

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Story in Brief

Milk Expected Progeny Difference (EPD) is one of the tools available through National Beef Cattle Evaluation programs. The study was designed to examine the effectiveness of Milk EPD for predicting calf weaning weight differences. Polled Hereford and Angus sires (n=12) were selected at the extremes (High vs Low) of each breed for Milk EPD. The initial set of calves (n=33) out of daughters sired by these bulls were evaluated for differences in birth weight and 205-day weight. The differences between sire of cow groups was small for birth weight. Cows sired by High Milk EPD bulls had heavier calves at weaning (506 and 507 lb for Polled Hereford and Angus, respectively) than did cows sired by Low Milk EPD bulls (459 and 423 lb). The actual differences were larger than those predicted by the Milk EPDs. Producers should be able to use Milk EPDs to rank bulls for maternal ability.

(Key Words: Beef Cattle, Maternal Ability, Growth, Sire Evaluation.)

Introduction

National Cattle Evaluation has made enormous strides since the first Sire Summary was published in 1972. At least 16 breed associations conduct regular national cattle evaluation programs and publish sire summaries at least once per year. All of these contain evaluations of birth weight, weaning weight, yearling weight and milk. Other traits (height, scrotal circumference, gestation length, carcass traits etc.) are included in certain breed programs, but not all. Most EPDs are presented as the direct expectation of performance differences in offspring. Milk EPD is somewhat different. It is the expected difference in weaning weights, due to differences in mothering ability, of calves out of cows sired by the bulls in question. It is expected calf weight

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differences, not expected differences in actual milk production. The purpose of this study is to evaluate whether actual weaning weight differences are similar to the expectations and to evaluate the additional effects on the lifetime reproductive performance of the cow. This report describes the first results from two-year old cows calving in the spring.

Materials and Methods

Cows (n=100) that were inseminated to calve during February and March, 1989, were mated to Angus and Polled Hereford bulls that had large differences in Milk Expected Progeny Difference (Milk EPD). These cows were Hereford-Angus, 1/4 Brahman-1/4 Angus-1/2 Hereford and 1/4 Brahman-1/2 Angus-1/4 Hereford. These data represent the initial set of calves from a long term study to evaluate Milk EPD. Replacement heifers will be produced over a period of at least four years.

Three bulls were chosen from each of the four groups (High Milk EPD Angus, High Milk EPD Polled Hereford, Low Milk EPD Angus, Low Milk EPD Polled Hereford). Average EPDs from the four groups (Table 1) showed a difference of 20.4 and 28.3 lb (Polled Hereford and Angus, respectively). Heifers (n=33) calved in the spring of 1991. The calving season was from mid-February through mid-April. Calves from these first-calf heifers were sired by Salers bulls (n=7). Each calf was weighed within 24 hours of birth. They were weaned when the group averaged 205 days and all weights were adjusted to 205 days.

The data were analyzed with a model that included sire of dam group, sex and sire of calf. Interactions were included in the initial model but were deleted due to lack of statistical significance.

Table 1. Average milk expected progeny differences of Polled Hereford and Angus sires of first calf heifers.

Breed	Milk EPD level	Milk EPD
Polled Hereford	High	+17.0
Polled Hereford	Low	-3.4
Angus	High	+16.3
Angus	Low	-12.0

Results and Discussion

Small, but non-significant differences between cow groups were observed for birth weight (Table 2). Calves from Low Milk dams were somewhat smaller. Large differences, however, were detected for 205-day weight. The difference between breeds was not statistically significant, but calves out of cows by High Milk EPD bulls were heavier ($P < .05$) than calves out of cows by Low Milk EPD bulls. The expected difference in calf weaning weight out of daughters was 20.4 lb for Polled Hereford and 28.3 lb for Angus. The actual difference was 47.0 lb for Polled Hereford and 84.0 lb for Angus. It should be pointed out that these results were based upon relatively small numbers and additional records will be available during subsequent years. Even with that qualification, it is interesting that the actual differences were much larger than expected for both breeds. There is no apparent reason for the magnitude of the differences.

More data are required before definite conclusions can be reached concerning the effectiveness of Milk EPD for predicting differences in calf weaning weight. Such data will be available in future years. It will also be interesting to evaluate the effect these observed differences in calf performance have on the reproductive performance of the cows. It does not seem likely that the increased calf weight is obtained without some cost.

These results provide an initial verification that Milk EPD's can predict actual calf weight differences. Producers that make bull selections based upon Milk EPD should be able to use the values to rank bulls with confidence. It remains to be seen if the observed differences, which were larger than expected in the current study, will remain when more data are obtained. It should also be pointed out that selection based upon Milk EPD does not necessarily dictate use of bulls with the highest Milk EPD values. Each producer should determine the appropriate level of milk for his/her conditions and select accordingly.

Table 2. Average birth weight and 205-day weight of calves out of cows sired by high and low milk EPD bulls.

Breed	Milk EPD level	n	Birth wt (lb)	205-day wt (lb)
Polled Hereford	High	6	71.7	506.4
Polled Hereford	Low	10	68.6	459.4
Angus	High	12	72.1	507.3
Angus	Low	5	64.7	423.3

Standard Error			3.1	21.6