

**HILL FARM RESEARCH STATION
OCTOBER 14, 2004
FIELD DAY SUMMARY REPORT**

COMMODITY: Beef Cattle

TITLE: Impact of High and Moderate Growth EPD Sires on Cow Productivity

CONTACT: Sid DeRouen, Hill Farm Research Station, (318) 927-2578,
SDerouen@agctr.lsu.edu

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The mating of crossbred cows to Simmental sires that differed by 20 pounds for weaning weight expected progeny differences (EPDs) resulted in actual calf weaning weight differences of 28 pounds indicating that EPDs are fairly reliable. Use of sires with high weaning weight EPDs did not result in increased calving difficulty. Pregnancy rate was not adversely affected for cows nursing high-growth calves. These results indicate that rebreeding performance of cows is not affected by using high-growth bulls if adequate management and nutrition are applied to the cow herd.

PROBLEM / TOPIC:

Expected progeny differences for growth traits are well documented and utilized by a large segment of the beef cattle industry. Calf weaning weight is greatly influenced by genetic potential for growth and verification of reliability of weaning weight EPDs needs to be studied. Furthermore, information needs to be developed on the possible influence high-growth calves that are sired by high weaning weight EPD bulls have on reproductive performance of beef cows, particularly in the stressful environments of Louisiana.

ACTION:

Maternal and reproductive performances were evaluated over 5 years involving crossbred cows (Table 1). A total of 307 cows were mated by artificial insemination (AI) to Simmental sires varying in weaning weight (WWT) EPDs. Four moderate (MOD) and three high (HIGH) Simmental sires were used (Table 2). Once randomly assigned, cows were synchronized for estrus and inseminated. Cows were exposed to clean-up bulls 18 days after AI for 60 days. A total of 120 AI calves were born. Cows were weighed and body condition scored at the beginning of the breeding season in April. Weaning occurred the first week of October with the average calf age being 229 days. Cows were weighed and body condition scored at weaning and pregnancy status was determined by rectal palpation. Pregnancy rates of cows were evaluated resulting from the breeding season while nursing MOD- or HIGH-growth calves and also the following breeding season after weaning MOD- or HIGH-growth calves.

IMPACT:

There was no difference in calving difficulty among MOD- and HIGH-growth calves. Calf birth date, birth weight, and weaning hip height were similar among MOD- and HIGH-growth calves (Table 3). Calves sired by HIGH-growth bulls were 28 lb heavier ($P < 0.05$) than calves sired by MOD-growth bulls for weaning weight (Table 3). Cow body weight and body condition score at weaning and at subsequent breeding were similar after nursing MOD- or HIGH-growth calves (Table 4). Pregnancy rates were similar for cows raising MOD- or HIGH-growth calves, both while nursing calves (96.0 vs. 96.5%), and after weaning during the subsequent breeding season (91.7 vs. 93.6%; Table 5).

Table 1. Breed composition of crossbred cows by sire breed

Sire breed	No.	Breed composition ^a
Angus	46	A ₂ B ₁ H ₁
Brahman	26	B ₁ H ₁
Brangus	7	B ₇ A ₅ H ₄
Gelbvieh	28	G ₂ B ₁ H ₁
Gelbray	13	B ₇ G ₅ H ₄
Total	120	—

^aA = Angus; B = Brahman; G = Gelbvieh; H = Hereford

Table 2. Simmental sires and weaning weight (WWT) EPDs

Sire EPD type	Sire I.D.	No. of calves	WWT EPD	
			lb	Acc.
Moderate	A	11	23.8	0.87
Moderate	B	14	22.1	0.88
Moderate	C	15	24.9	0.97
Moderate	D	18	16.6	0.88
Total/weighted avg.	—	58	21.4	0.90
High	A	35	43.3	0.97
High	B	11	27.2	0.87
High	C	16	48.4	0.81
Total/weighted avg.	—	62	41.8	0.91

Table 3. Birth and weaning traits of calves by sire EPD type

Trait	Sire EPD type	
	Moderate	High
Birth date, day	47.7	49.7
Birth weight, lb	91.9	98.5
Actual weaning weight, lb	597 ^a	625 ^b
205-day weight, lb	547 ^a	575 ^b
Weaning hip height, in.	46.3	46.9

^{a, b}Means within a row differ (P < 0.05)

Table 4. Cow body weight (BW) and body condition score (BCS) at weaning and breeding by sire EPD type

Trait	Sire EPD type	
	Moderate	High
BW at weaning, lb	1,314	1,279
BCS at weaning	5.47	5.39
BW at breeding, lb	1,323	1,276
BCS at breeding	5.52	5.35

Table 5. Pregnancy rates (PR) of cows by sire EPD type

Trait	Sire EPD type	
	Moderate	High
PR while nursing calves, %	96.0	96.5
Subsequent PR after weaning ^a , %	91.7	93.6

^aPregnancy resulting the following breeding season after weaning moderate or high-growth calves.