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CALVING SEASON, STOCKING RATE, AND AGE OF BRAHMAN-HEREFORD (F₁) DAM EFFECTS ON WEANING WEIGHT OF SIMMENTAL-SIRED CALVES

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Background. Two important management concerns that confront cow-calf producers are percent of the cow herd that weans a calf and actual weaning weights. For those who opt to sell at weaning, calf weaning weight is the primary source of cash flow for the operation.

Research Findings. Brahman-Hereford (F₁) dams and their offspring have been used to evaluate the influence of forage species and stocking rates on forage characteristics and animal performance at the Overton Center since 1970. Data from this study were compiled from 1909 records of Simmental-sired calves born to F₁ dams from 1975 to 1990. Although the current calving seasons involve two 70-day periods (September-October and January-February), early grazing research was conducted using a wide array of calving dates. Calving seasons were defined as follows: fall, September 1 to December 15; winter, December 16 to March 15; and spring, March 16 to May 31.

A summary of 15 years data showed that within any single calving season, age of dam did not affect weaning weight (Table 1). However, considering the entire data set, cows less than 3.5 of age weaned lighter calves than cows from 3.5 to 17 years of age. The most dramatic effect on weaning weight within a season was stocking rate during lactation. There was also a significant stocking rate x sex of calf interaction. In the fall calving season, steer calves benefitted more, in terms of weight gain, from low stocking rates than heifer calves. Table 2 shows the percent of Simmental-sired calves within a weaning weight category for 2-week birth intervals from September through May. From October 1 to 15 (Birth month=10), for example, only 8.6% of all calves born weaned less than 500 lbs. In contrast, all calves born after April 1 from these cows, weaned less than 600 lbs.

Application. Weaning weights are dependent upon birth weight, sex of calf, age of dam, breed of sire and dam, age at weaning, and upon the climatic and managerial factors that influence quality and quantity of forage. Under the forage conditions of East Texas, bermudagrass plus small grain, ryegrass, and/or clovers, fall and early winter calving produced the heaviest calves at weaning. Selection of these calving seasons permits weaning schedules to preempt the low quality periods of late July to September. Without cool-season annual forages in the pasture system, however, late winter to early spring may be the most appropriate calving season to allow for rebreeding. As weaning weights increase with management and genetics, producers may be

faced with seeking alternative methods of marketing offspring, and this may include prolonged or continuous ownership from birth to slaughter.

Table 1. Fifteen-year average weaning weights of Simmental-sired calves from different calving seasons.¹

Item	Total of			
	All Seasons	Fall	Winter	Spring
	-----lbs-----			
Sex of Calf				
Male	570 ^a	672 ^a	578 ^a	456 ^a
Female	546 ^b	626 ^a	543 ^b	453 ^a
Age of Dam, Yrs				
<3.5	541 ^a	634 ^a	543 ^a	459 ^a
3.5-12	563 ^b	657 ^a	569 ^a	455 ^a
12-17	568 ^b	653 ^a	571 ^a	485 ^a
Stocking Rate				
Low + Creep Feed		840 ^a	751 ^a	
Low	652 ^a	707 ^b	600 ^b	512 ^a
Medium	622 ^b	668 ^c	568 ^c	485 ^b
High	521 ^c	569 ^d	492 ^d	419 ^c

¹Superscripts within a categorized calving season denote significant differences (P<.05).

Table 2. Percent of Simmental-sired calves within a weaning weight category for each 2-week period of calving.

Total n	Birth Month	WEANING WEIGHTS, lbs				
		<500	500-600	600-700	700-800	>800
		-----%				
75	9	2.6	26.7	38.6	28	4.1
278	9.5	6.1	37.3	34.9	17.7	4
268	10	8.6	39.2	25.4	16.8	10
146	10.5	6.8	46.6	26.1	14.3	6.2
71	11	8.4	46.5	29.6	8.4	7.1
50	11.5	20	58	16	6	0
36	12	50	36.0	11.2	2.8	0
26	12.5	46.2	30.9	15.3	3.8	3.8
18	1	11.2	27.8	33.2	27.8	0
138	1.5	14.4	60.2	18.1	7.3	0
181	2	17.7	65.7	13.8	2.8	0
116	2.5	22.4	64.7	12.9	0	0
114	3	44.8	50.9	4.3	0	0
63	3.5	61.9	33.3	4.8	0	0
40	4	77.5	22.5	0	0	0
31	4.5	90.3	9.7	0	0	0
10	5	100	0	0	0	0