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EFFECT OF CALVING SEASON, STOCKING RATE, AND AGE OF BRAHMAN-HEREFORD (F₁) DAMS ON BIRTH WEIGHT OF SIMMENTAL-SIRED CALVES

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Background. Cow-calf producers want every cow to wean a calf. Since birth weight has been linked with numerous genetic, nutritional, and seasonal factors, producers want to avoid dystocia problems and still maintain moderate birth weights to enhance weaning weights.

Research Findings. Data for this study were compiled from 1909 records of Simmental-sired calves born to Brahman-Hereford (F₁) dams from 1975 to 1990. Calving seasons for these records were defined as follows: fall, September 1 to December 15; winter, December 16 to March 15; and spring, March 16 to May 31. Although current calving seasons involve two 70-day periods (September-October and January-February), early grazing research included cows with a wide array of calving dates. Sex of calf, age of dam, dam's previous stocking rate, and season of birth affected birth weight ($P<.05$) (Table 1). Birth weights of spring-born calves (78.4 lbs) were higher ($P<.01$) than either fall (76.5) or winter (73.0), and may be partially due to the utilization of high quality forages during the last trimester of gestation. With respect to fall and winter calving seasons, cows less than 3.5 years of age had lighter calves than cows from 3.5 to 17 years of age. There was a significant impact of previous stocking rate on birth weight of fall- and winter-born calves ($P<.05$). Cows that had been assigned to high stocking rates usually lost weight during lactation; thus, these animals required additional nutrition to replenish their body condition as well as that of the fetus. These nutrients were supplied by forages.

The percent of Simmental-sired calves within a birth weight range for each two weeks of the calving season are shown in Table 2. For example, only 2.2% of calves born from October 1 to 15 (birth month = 10), weighed less than 55 lbs; however, 19% of the calves weighed more than 87 lbs. Of the 1909 calves used in this data set, only 3% weighed less than 55 lbs at birth. Even with 18% ($n = 344$) of the total calves weighing more than 87 lbs, dystocia was virtually nonexistent among these Brahman-Hereford (F₁) cows. Only five F₁ cows required assistance from 1975 to 1990 and the primary cause of this dystocia was abnormal presentation.

Application. The Brahman-Hereford (F₁) cow is an inherently easy calver with a long, productive life. Although sires that produce dystocia problems should be avoided, moderately heavy birth weight calves may be desirable since there is a positive correlation of birth weight with weaning weight. Utilization and nutritive value of forages not only affect birth weight, but also influence rebreeding and weaning weights.

Table 1. Fifteen-year average birth weights of Simmental-sired calves with Brahman x Hereford (F₁) dams at different calving seasons.

Item	Birth Wt ¹ , lbs			
	Total	Fall	Winter	Spring
<u>Sex of Calf</u>				
Male	77.0 ^a	76.6 ^a	78.3 ^a	80.9 ^a
Female	74.9 ^a	74.0 ^b	74.1 ^a	78.4 ^a
<u>Age of Dam</u>				
<3.5	73.6 ^a	69.5 ^a	72.5 ^a	82.6 ^a
3.5 - 12	78.1 ^b	79.0 ^b	76.5 ^b	80.7 ^a
12 - 17	76.1 ^b	77.5 ^b	79.7 ^b	75.6 ^a
<u>Previous Stocking Rate</u>				
Low + Creep Feed		78.4 ^a	83.4 ^a	NA
Low	76.9 ^a	76.5 ^a	76.3 ^b	79.6 ^a
Medium	77.4 ^a	75.4 ^b	74.8 ^c	84.2 ^a
High	73.6 ^b	73.2 ^c	71.5 ^d	77.7 ^a

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

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

Birth Month	Birth Weight, lbs					Total n
	<55	55-65	66-76	77-87	>87	
	-----%-----					
9	2.5	20.0	36.3	27.5	13.7	80
9.5	2.7	17.6	31.4	31.1	17.2	296
10	2.2	15.4	33.3	30.1	19.0	279
10.5	1.4	10.5	30.9	37.5	19.7	152
11	5.5	15.1	24.7	26.0	28.7	73
11.5	0	14.8	42.6	27.8	14.8	54
12	7.2	11.9	38.1	31.0	11.9	42
12.5	3.3	13.3	33.3	16.7	23.4	30
1	9.1	13.6	54.5	9.1	13.6	22
1.5	2.9	23.3	39.5	19.8	14.5	172
2	4.0	19.8	30.4	30.0	15.8	253
2.5	3.5	21.8	32.4	28.2	14.1	142
3	3.3	14.0	36.7	26.0	20.0	150
3.5	5.7	8.7	40.6	30.4	14.4	69
4	2.3	4.5	36.4	40.9	15.9	44
4.5	0	8.8	20.6	44.1	26.4	34
5	5.9	5.9	29.4	17.6	41.2	17