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CHAPS SUMMARY FOR SOUTH DAKOTA, 1990

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CATTLE 91-17

Summary

Calving distribution and calf performance data were summarized from the CHAPS (Cow Herd Appraisal of Performance Software) analyses of 61 South Dakota cow herds. CHAPS uses standard beef cow weaning weight records to calculate adjusted 205-day weights and ratios, keep lifetime production records on cows, calculate Most Probable Producing Ability estimates for cows, produce a sire summary and analyze production according to cow age and 21-day calving periods. The 1990 summary represents 6,771 calves for an average of 110 cows per herd. The average actual birth and weaning weights were 82.2 and 523.2 lb, respectively, with the average age at weaning 199 days. Overall, 81.3% of the females calved by day 42 of their respective calving seasons, although there was considerable disparity in the percent calved by day 42 between the HIGH and LOW (91.9 vs 62.8%) calving distribution herds. This difference is important since actual weaning weights declined 37 to 60 lb for each 21 days later that calves were born. In addition to these data for the state summary, CHAPS provides valuable information for making within herd selection and management decisions.

Introduction

A new computer program for evaluating cow herd productivity was acquired in 1989 by the SDSU Extension Service and placed in most of the county extension offices. The program is called CHAPS which stands for Cow Herd Appraisal of Performance Software. CHAPS uses standard beef cow weaning weight records to adjust weaning weights and calculate 205-day ratios. In addition, the program keeps lifetime production records on cows, calculates MPPA (Most Probable Producing Ability) for cows, produces a sire

summary and analyzes birth dates and weaning weights to give a calving distribution and production analysis by cow age and 21-day calving periods. CHAPS records are summarized to develop a state database to provide producers a basis for comparative analysis of their herds' productivity.

This 1990 CHAPS summary for South Dakota represents 6,771 calves from 61 herds throughout the state. The average herd size was 110 cows with a range of 18 to 324 head. Several interesting trends are apparent in the data. Data of particular interest in the summary were the percentage of calves born in 21-day segments of the calving season. Calving distribution provides an excellent indication of reproductive performance and provides a producer a tool to utilize in troubleshooting reproduction, nutrition and management problems within the various age groups of cows in the herd. CHAPS determines the start of the first 21-day period by using the date when the second 3-year-old or older cow calves. Any cows or heifers calving ahead of that date are considered Early. The calving distribution and performance of the 21 herds with the highest percentage calved by the end of the first 21 days (HIGH) are compared to the 20 herds with the lowest percentage calved by the end of the first 21 days (LOW).

Results and Discussion

1. The age distribution of the cows in the summary appears in Table 1. In these herds, 16.8% were first calf 2-year-olds and approximately 45.0% from 5 to 9 years of age. In these herds, 45.1% were under 5 years and 9.6% were 10 years or older. These data would indicate that the cow herds are not as old as some reports would suggest.

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2. The average start of the calving season for the mature cow herd was March 17. The average midpoint of the calving season for these herds was April 7. The average actual birth and weaning weights for these calves were 82.2 and 523.2 lb, respectively. The average age at weaning was 199 days and the average weight per day of age at weaning was 2.62 lb. Actual weaning weights became progressively lighter by 34 to 60 lb for each 21 days later that calves were born (Table 2). Note that the HIGH distribution herds averaged 40 lb more at weaning than the LOW distribution herds due to the higher percentage of calves born early in the calving season.

TABLE 1. NUMBER AND PERCENTAGE OF COWS BY AGE IN 1990 CHAPS SUMMARY

Age of cow, yr	Number of cows	% of total
2	1139	16.8
3	1085	16.0
4	838	12.3
5-9	3061	45.2
10 and over	648	9.6

TABLE 2. PERCENTAGE OF COWS CALVING AND AVERAGE ACTUAL WEANING WEIGHT BY 21-DAY CALVING PERIOD FOR ALL COWS AND FOR HIGH AND LOW CALVING DISTRIBUTION GROUPS

21-day period	All cows		HIGH		LOW	
	%	Weight	%	Weight	%	Weight
Early	4.2	574	7.0	579	2.0	591
1st	46.2	553	63.2	561	21.9	553
2nd	30.9	519	21.7	521	38.9	532
3rd	12.3	460	5.8	454	23.1	474
4th	4.3	396	1.9	353	9.3	418
Late	1.7	379	.3	352	4.0	400
Average		523		544		504

3. In these herds, over 80% of the females were calved by the end of the second 21-day period and approximately 94% were calved by the end of the third 21-day period (Table 2).
4. The calving distribution within age group (Table 3) shows that about 20% of the 2-year-olds were calved ahead of the mature cows, with the HIGH distribution herds calving 30.9% EARLY versus 8.7% for the LOW herds. There was even greater disparity between the HIGH and LOW groups in the cumulative percentages of 3- and 4-year-old cows calving within the 21-day calving periods. For example, at the end of the second 21-day period, 97.7% of the 3-year-olds in the HIGH herds had calved compared to only 42.8%

in the LOW herds. This trend continues for the 4-year-old and older cows and indicates difficulty in getting the first calf 2-year-olds among the LOW distribution herds to rebreed and a real need for improvement in nutrition and management of these first calf females. The data also show the value of calving first-calf, 2-year-olds early to allow more time for rebreeding.

5. CHAPS provides valuable information to individual producers as well as the South Dakota beef industry. If you are interested in enrolling your herd in CHAPS, contact your county extension agent or the extension beef specialists at SDSU.

TABLE 3. AVERAGE CUMULATIVE PERCENTAGE CALVED BY 21-DAY CALVING PERIODS WITHIN AGE GROUP FOR ALL COWS AND HIGH AND LOW CALVING DISTRIBUTION GROUPS

Age	Group	% of each age group					
		Early	1st	2nd	3rd	4th	Late
2	All	19.3	64.7	84.1	95.3	98.3	99.5
	HIGH	30.9	75.7	89.1	97.4	99.8	99.8
	LOW	8.7	43.0	71.7	92.0	97.0	99.3
3	All	.7	39.8	72.7	89.2	95.9	99.0
	HIGH	1.4	64.8	92.4	97.2	99.3	99.7
	LOW	.5	12.1	49.1	77.5	90.9	97.9
4	All	1.6	47.9	78.6	91.5	96.6	99.5
	HIGH	2.6	70.5	91.7	96.8	99.0	100.0
	LOW	1.8	19.2	56.2	79.5	91.0	98.2
5-9	All	1.2	50.5	83.5	94.7	98.7	99.8
	HIGH	1.1	70.2	92.9	97.9	99.8	100.0
	LOW	.9	22.9	65.1	87.9	96.6	99.7
10 and over	All	.6	45.8	84.1	96.3	99.2	100.0
	HIGH	.6	64.0	91.4	99.4	100.0	100.0
	LOW	.8	28.1	71.8	91.5	98.6	100.0