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June Versus March Calving for the Nebraska Sandhills: Production Traits

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Matching calving with growth of natural forages by moving traditional March calving to June resulted in a substantially lower amount of hay fed and less labor to produce a calf.

Summary

Our objective was to determine if labor and purchased inputs could be reduced and profitability improved by matching lactation (i.e., calving date) with nutrient content of grazed forages to extend the grazing season in beef cow/calf systems. By adjusting a traditional March calving date to a non-traditional June calving date, nearly 2 tons of harvested feed/cow was replaced by grazing. Feeding and calving labor inputs of mature cows were 61% lower for the June calving compared to the March calving system. Weaning rates were comparable between March and June calving systems. Weaning weights for June-born calves were 70 lbs lighter than March-born calves.

Introduction

The amount of harvested and purchased feeds required to sustain a cow herd is highly correlated with calving date. Calving in February and/or March in the Nebraska Sandhills results in the high nutrient requirements for lactation occurring when nutrient content of range forages are low. Thus, significant inputs of harvested and processed feeds are required to ensure that a high percentage of cows rebreed and produce a calf the

following year. We hypothesized that a June calving date would match the high nutrient lactation requirements of the cow with high nutrient content of immature growing plants and extend grazing compared to a traditional March calving date. Our primary objective was to determine if harvested and/or purchased feeds and labor could be reduced and sustainability and profitability improved by matching lactation (i.e. calving date) with nutrient content of grazed forages in beef cow/calf systems.

Procedure

In 1993, cows from a March calving cow herd were bred to calve beginning either March 15 (75 cows) or June 15 (120 cows). Steer calves from March calving were finished as calf-feds. One-half of the steer calves from June calving were finished as calf-feds and one-half grazed summer Sandhills range as yearlings before being finished. Calving dates, weaning dates, and feeding periods are given in Table 1. Only mature cows were used in this study. Heifer calves are being developed for replacements and research is ongoing.

June calving cows were split into two groups for the breeding season. One group was bred on subirrigated meadow regrowth (60 cows) and the other on upland range (60 cows). Breeding season was 60 days for March calving cows and 45 days for June calving cows.

Weaning rates were calculated according to Standardized Performance

Analysis (SPA) guidelines and were the same for the March and June systems. Because of potential bias from conversion of cows from March to June calving cycle, pregnancy rates during years 1993 and 1994 were not included in data analysis. Animal production and resource use (grazing, feed, and labor) records were maintained on each cow-calf herd from breeding through to slaughter through 1999 (4 production cycles). March calving cows were fed hay from subirrigated meadows about mid-January through April. June calving cows were fed meadow hay for three days after weaning and during a winter storm.

Results

Matching calving with growth of natural forages substantially reduced the amount of hay fed (Table 2). Over four years about 2 tons of hay were fed to March calving cows annually compared to about .1 ton of hay for June calving cows. However, about 60 lb/cow more protein supplement was fed to June calving cows annually than March calving cows. Labor for feeding and calving to produce a weaned calf in the June system was 61% lower than the March system (Table 2). In addition to differences in resource use shown in Table 3, a calving building commonly used in the traditional March system is not needed in the June system. Post-weaning resource requirements for calf feds (hay and supplement to prepare a weaned calf for shipment to the feedlot) were higher in

Table 1. Approximate dates for March and June calving systems.

Item	March	June	
	Calf feds	Calf feds	Yearlings
Breed cows	June-August	September-October	September-October
Calving	March-April	June-July	June-July
Wean	September 26	January 9	January 9
Steers Onto Grass	—	—	June 3
Steers Into Feedlot	November 13	February 13	September 12
Slaughter	May 22	August 19	January 23

Table 2. Average resource use per head for March and June calving systems 1995 to 1999.

Resource use	March	June			
	Calf feds	Calf feds		Yearlings	
		Range	Meadow	Range	Meadow
Cows					
Hay (tons)	1.97	0.11	0.11	0.11	0.11
Purchased feed (lb)	96	154	154	154	154
Grazing days (range)	233	207	162	207	162
Grazing days (meadow)	—	150	195	150	195
Feeding labor (hr)	0.66	0.18	0.18	0.18	0.18
Calving labor (hr)	0.57	0.30	0.30	0.30	0.30
Calves (wean to on grass/feedlot)					
Hay (tons)	—	0.22	0.22	0.79	0.79
Purchased feed (lb)	—	105	105	375	375
Grazing days (range)	49	—	—	31	31
Feeding labor (hr)	—	0.15	0.15	0.53	0.53
Yearlings (on grass to feedlot)					
Grazing days (range)	—	—	—	102	102
Calves/Yearlings (in feedlot)					
Feedlot days	191	189	189	134	134

Table 3. Pregnancy rate and weaning rate (percentage of cows exposed to the bull) of cows in March and June calving systems.

Item	March calving	June Calving	
		Range	Meadow
Pregnancy rate, % ^a	94.8	92.1	91.7
Weaning Rate, % ^a	88.8	90.2	87.7

^aMeans were similar ($P>.10$) for March vs. June systems and for meadow vs range during the breeding season within the June calving system.

Table 4. Average weights and ADGs for March and June calving systems 1995-1999.

Weights at:	March	June			
	Calf feds	Calf feds		Yearlings	
		Range	Meadow	Range	Meadow
Wean, lb	486	417	440	417	440
ADG wean to grass/feedlot, lb	0.55	0.22	0.17	1.01	1.11
On to Grass	—	—	574	607	—
ADG on grass to feedlot, lb	—	—	—	1.61	1.32
Into Feedlot, lb	518	436	462	738	753
ADG in feedlot, lb	3.49	3.70	3.56	4.01	4.06
Slaughter (live wt.) ^a , lb	1178	1124	1123	1265	1287

^aSlaughter (live wt.) = hot carcass weight ÷ .62.

the June system. March-born calves grazed subirrigated meadow between weaning and the feedlot while June-born calves were fed hay and protein supplement. Calves grown as yearlings in the June calving system required more supplement, harvested forage, and grazing than June- or March-born calf-feds but were finished in the feedlot about eight weeks faster.

Pregnancy rate and weaning rate are reported in Table 3. Pregnancy rate and weaning rate were similar ($P>.10$) for March vs. June calving and for June calving cows bred on subirrigated regrowth and upland range.

Calf weaning weights and average daily gain (ADG) were different between March and June calving and between calves June calving that grazed

subirrigated meadow and range during the breeding season (Table 4). June-born steer calves were about 50 to 70 lb lighter (meadow- and range-bred treatments, respectively) at weaning than March-born steer calves. The lower weaning weight of June-born calves compared to March-born calves is best explained by low calf gains produced on the low quality forages typical of Sandhills range during November through January. The ADG was greater for the March-born calves than June-born calves during backgrounding between weaning and shipment to the feedlot. However, ADG in the feedlot was higher for the June-born calf feds. Live weights at slaughter were higher for the March-born calf feds. A greater percentage of the carcasses from the March system graded Choice (53%) than the June system (33%). Sixty-six percent of the June system yearling carcasses graded Choice or upper 2/3 Choice. Carcass yield grades were 3 or less in all systems.

Matching calving date to immature, nutrient dense forages reduced the amount of hay fed and calving and feeding labor compared to March calving without reducing weaning rate. Although weaning weight was lower for June-born than March-born calves, the labor and feed savings appeared to offset the lower weaning weight.

We emphasize that the June calving date was selected as a means to match nutrient requirements of the cow with nutrients in grazed forages. Other calving dates are likely to be selected to match nutrient requirements of the cow with forage nutrients in other geographical areas. Adaption of an alternate calving season should be based on expected returns and ranch resources.

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