

Spring Burning of Native Grass Pastures for Late-Weaned Fall-Calving Cows

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Story in Brief

Thirty-two dry and 32 lactating fall-calving beef cows and calves grazed burned or unburned native range from May 6 through August 1, 1985 to determine if thin, late-weaned cows would respond to the improved nutrient supply provided by burned native grass. Burning effectively increased the body weight and condition of both dry and lactating cows. Lactating cows maintained on burned pastures, however, gained only 24 lb and .33 units of body condition compared to 56 lb and .45 units of body condition for dry cows. Weaned calves grazing burned pasture gained 18 lb more than weaned calves grazing unburned pasture. Burning tended to increase weight gains (14 lb) of suckling calves as well. Suckling calves, however, gained an average of 90 lb more than their weaned counterparts. Spring burning appears to be a viable tool to rapidly improve the weight and body condition of thin cows. Combined with the advantages of delayed weaning, producers should be able to manage cow weight and condition and also capitalize on increased calf performance.

(Key Words: Spring-Burning, Delayed Weaning, Fall-Calving)

Introduction

Dormant native winter range is low in crude protein and TDN. During this time, fall-calving cows typically lose body weight (150+ lb) and body condition (1+ units) due to the low nutritive value of native range. Consequently, many fall-calving cows, especially those with high milk production, enter the spring extremely thin.

When calves are normally weaned, at or about 210 d, thin cows typically regain enough weight and condition to ensure normal calving, lactation and rebreeding performance. Previous work at this station (Hancock et al, 1985) has shown that delayed weaning (285 d) increases calf weight by 59 lb with little effect on subsequent cow performance. Delayed weaning, however, may stress thin cows or cows with high milk production to the extent that adequate body reserves may not be achieved by the fall calving season.

One alternative is to wean thin cows at 210 d although the 59 lb advantage for late-weaned calves would be lost. A second alternative is to improve the quality of the feed supply by spring burning. Burning improves the crude protein and palatability of range grasses. Grazing thin, suckled cows on burned pastures may improve cow performance without sacrificing weaning weight. The objective of this study was to determine if thin, late-weaned fall-calving cows and their calves will respond to spring burning of native range.

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Materials and Methods

Angus X Hereford cows (921 lb) were bred to Limousin bulls and calved from September through November, 1984. Normal-weaned calves were weaned on April 22, 1985 and fed grass hay plus a weaning ration in drylot until May 6. Delay-weaned calves were weaned at the end of the trial on August 1. Average calf weight at the beginning of the trial was 330 lb. Three native grass pastures were burned on April 11 and 12, 1985. Grazing was initiated on May 6, when regrowth was approximately six inches and continued to August 1, 1985 (87 days). Ninety-two cows were available for the study, however, 64 were chosen on the basis of low initial condition scores which ranged from 3.0 to 5.5. Four groups of cattle (8 dry cows and 8 lactating cows with calves) were randomly assigned to each of four pastures (two burned and two unburned). Pastures were approximately 70 acres and stocking density was 3.1 acres/animal unit. Two groups of weaned calves (16 calves/group) were randomly assigned to two calf pastures (one burned, the other unburned) with a stocking density of 7.3 acres/animal unit. Unburned pastures were predominated by standing, dead little bluestem. Cow weights, body condition scores (1=very thin, 9=very fat), and calf weights were evaluated every three weeks following a 15 hour shrink. Two independent condition scores were averaged for each cow.

Two cows and their calves were removed before the end of the trial because of illness. Consequently, sixty-two cows and calves were used in the statistical analyses. The data were analyzed by least squares procedures. Significant differences between least-square treatment means were detected by Tukey's HSD test.

Results and Discussion

Dry cows grazing burned pastures were 56 lb heavier ($P < .05$) and .45 units of body condition fatter ($P < .05$) than dry cows grazing unburned pasture (Table 1 & 2). Lactating cows grazing burned pastures, however, were only 24 lb heavier ($P < .05$) and .33 units fatter ($P < .05$) than lactating cows grazing unburned pastures. Dry cows rapidly regained weight and body condition, especially when grazing burned pastures. By August 1, most dry cows were in a body condition of 6 or better. Lactating cows, however, gained less weight and body condition as they continued to divert consumed nutrients into milk through the summer. By August 1, 9 of the 16 lactating cows grazing unburned pastures were in a body condition of 5.0 or less compared to only 4 of

Table 1. Changes in body weight of dry and lactating cows grazing burned or unburned native grass pastures.

	Dry cows		Lactating cows	
	No burn	Burn	No burn	Burn
Initial	921	950	905	905
Final	1118 ^b	1205	1051	1075 ^b
Weight gain	198 ^b	254 ^a	146 ^c	170 ^b

^{a,b,c}Means within a row with different superscripts differ ($P < .05$).

Table 2. Changes in body condition of dry and lactating cows grazing burned or unburned native grass pastures.

	Dry cows		Lactating cows	
	No burn	Burn	No burn	Burn
Initial	4.79	4.77	4.27	4.43
Final	5.95 ^b	6.38	4.86	5.35 ^b
Condition gain	1.16 ^b	1.61 ^a	.59 ^c	.92 ^b

a,b,c Means within a row with different superscripts differ ($P < .05$).

14 lactating cows grazing burned pastures. Fall-calving cows in a body condition of 5.0 or less by August 1 should probably be separated from the rest of the herd and fed additional protein to enhance body condition. Because fewer lactating cows grazing burned pastures were extremely thin, less supplementation would be required.

When grazing burned pastures, weaned calves gained 18 lb more ($P < .05$) and suckling calves gained 14 lb more than their counterparts grazing unburned pastures (Table 3). Weaned calves grazing burned pastures had access to higher quality forage than weaned calves grazing unburned pastures and thus grew faster. Suckling calves on burned pastures, however, could utilize better quality forage plus additional milk. Although the response to burning was similar for both weaned and suckling calves, suckled calves could have responded to either source of nutrients (forage or milk).

Lactating cows regained less weight ($P < .05$) and body condition ($P < .05$) than dry cows (Table 1 & 2). Suckling calves, however, gained 90 lb more ($P < .05$) than their weaned counterparts. In this study, delaying weaning until August 1 allowed suckling calves to gain an additional 1.0 lb for each day they were left on the cow compared to their weaned counterparts of similar age.

Burning appears to be an effective method to rapidly improve weight and body condition of thin, fall-calving cows. Much of the response to burning was observed in the first six weeks of the study (Figure 1). Normal weaning at 170 d also allows thin cows to improve weight and condition, although the opportunity to market more pounds of weaned weight is lost. Combining delayed weaning (271 d) with spring pasture burning should allow producers to quickly recondition thin cows and also capitalize on improved calf performance.

Table 3. Changes in body weight of weaned and suckling calves grazing burned or unburned native grass pastures.

	Weaned calves		Suckling calves	
	No burn	Burn	No burn	Burn
Initial	326	336	334	330
Final	449	478 ^b	550 ^a	560
Weight gain	124 ^c	142 ^b	216 ^a	230 ^a

a,b,c Means within a row with different superscripts differ ($P < .05$).

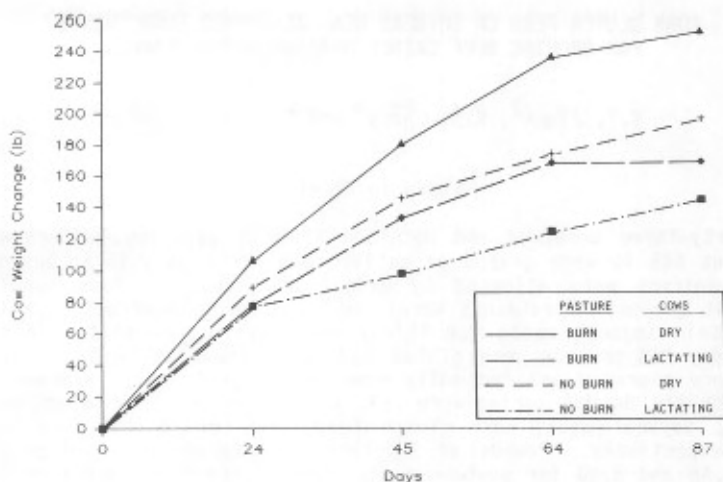


Figure 1. Changes in body weight of dry or lactating cows grazing burned or unburned native grass pastures.

Literature Cited

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