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The effect of long-term management of native grass pastures on steer gains

Abstract

Three hundred thirteen mixed breed steers (558 lb) were used to determine the effect of long-term management of native grass pastures on gain. Steers were allotted randomly to eight pastures previously grazed for 1/2 season (1 steer/2 acres from April to July 15, 81 days) or 3/4 season (1 steer/3 acres from April to August 15, 112 days) from 1990 to 1998. In 1999, all pastures were stocked at 1 steer/2 acres and grazed 83 days until July 15 or 16. The steers received free-choice mineral and were supplemented six times with 2 lb of 20% crude protein range cubes to aid in gathering. The steers on pastures previously grazed for 3/4 season gained faster ($P < .01$) than those on pastures previously grazed for 1/2 season. The 1/2-season pastures appeared to have taller, more mature grass left after the 1999 grazing season than those previously grazed for 3/4 season. The 1999 season was extremely wet until July 15, which may have been a factor in the gain difference. This study clearly showed that gains were good following either system of grazing. However, under these environmental conditions, pastures previously grazed for 3/4 season had the advantage.

Keywords

Cattlemen's Day, 2000; Kansas Agricultural Experiment Station contribution; no. 00-287-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 850; Beef; Stocker cattle; Grazing cattle; Native grass

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THE EFFECT OF LONG-TERM MANAGEMENT OF NATIVE GRASS PASTURES ON STEER GAINS¹

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Summary

Three hundred thirteen mixed breed steers (558 lb) were used to determine the effect of long-term management of native grass pastures on gain. Steers were allotted randomly to eight pastures previously grazed for 1/2 season (1 steer/2 acres from April to July 15, 81 days) or 3/4 season (1 steer/3 acres from April to August 15, 112 days) from 1990 to 1998. In 1999, all pastures were stocked at 1 steer/2 acres and grazed 83 days until July 15 or 16. The steers received free-choice mineral and were supplemented six times with 2 lb of 20% crude protein range cubes to aid in gathering. The steers on pastures previously grazed for 3/4 season gained faster ($P<.01$) than those on pastures previously grazed for 1/2 season. The 1/2-season pastures appeared to have taller, more mature grass left after the 1999 grazing season than those previously grazed for 3/4 season. The 1999 season was extremely wet until July 15, which may have been a factor in the gain difference. This study clearly showed that gains were good following either system of grazing. However, under these environmental conditions, pastures previously grazed for 3/4 season had the advantage.

(Key Words: Stocker Cattle, Grazing Cattle, Native Grass.)

Introduction

When pastures are overstocked for years, grass composition can change, which affects future stocking rates and animal performance. Late-cut, native-grass hay meadows can yield

less the following year. Therefore, our purpose was to find out how long-term grass management (9 years) influenced cattle gains.

Experimental Procedures

Three hundred thirteen mixed breed steers (558 lb) were allotted randomly to pastures that had been grazed for 1/2 season (1 steer/2 acres from April to July 15, 81 days) or for 3/4 season (1 steer/3 acres from April to August 15, 112 days) from 1990-1998. Four pastures were used per treatment. The steers grazed for 83 days and were removed on July 15 or 16, 1999. They had free-choice access to a mineral mixture and were fed (six times) 2 lb of a 20% crude protein cube to aid in gathering. All pastures were burned in April. Steers were weighed individually at the start and end of the grazing period.

Results and Discussion

The steers grazing the 3/4-season pastures gained faster ($P<.01$) than the steers grazing the 1/2-season pastures. The 9-year summary showed greater grass regrowth on the pastures grazed for 1/2 vs. 3/4 season. At the end of the 1999 grazing season (July 15), visual appraisal of the pastures showed that those previously

¹Appreciation is extended to the Bressner Pasture Committee.

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grazed for 1/2 season (to July 15) had taller, more mature grass. The early summer of 1999 had above-average precipitation, so the pastures previously grazed to July 15 may have had more early growth. The resulting taller, more mature grass could explain the lower steer gains on those pastures. Normally, a late-cut, native-grass hay field yields less the next year. A pasture that is grazed later could show the same result, which might affect gain. However, the late-season grazing in the 9 preced-

ing years had a positive rather than a negative effect on gains. Both grazing systems resulted in excellent steer gains in the year following 9 years of grazing. Either system, properly managed, should maintain future grazing potential. However, differences may occur because of environmental conditions of a given year.

Table 1. Steer Gains (Short Season) on Native Grass Pastures Grazed for 1/2 Season or 3/4 Season for the Previous 9 Years

Items	1/2 Season	3/4 Season
No. steers	156	157
Starting wt, lb	556	561
Daily gain, lb	3.35 ^a	3.50 ^b
Days grazed	83	83

^{a,b}Means in the same row with unlike superscripts are different (P<.01).