Effects of a Synovex-S Implant During Winter Grazing

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Story in Brief

A two-year experiment utilizing 262 spring-born, fall weaned steers (464 ± 59 lb), from a single ranch was conducted to determine the effects of an estrogenic growth-promoting implant (Synovex-S) on performance of stocker steers grazing dormant, low-quality forage. Steers were either implanted or not implanted with Synovex-S in December and grazed approximately 230 acres of dormant Old World bluestem from December until late March (yr 1), or April (yr 2). Cattle grazed as a common group, and were supplemented three times weekly (2 kg/steer at each feeding). Steers implanted with Synovex-S gained an additional 11 lb (34 vs 45) by the end of the winter grazing season (93 d in 1999-2000 and 123 d in 2000-2001) resulting in an additional .10 lb of greater average daily gain (.37 vs .47) than steers that did not receive an implant of Synovex-S. The use of a Synovex-S implant during the winter grazing period increased both weight gain and ADG by 30 and 27.6%, respectively. This resulted in an increase in gross return to the enterprise of approximately $8.72. It appears that the use of an estrogenic growth-promoting implant in the winter grazing period will consistently increase weight gain and rate of gain, resulting in greater gross returns.

Key Words: Beef Cattle, Implants, Winter, Grazing, Animal Performance

Introduction

Many producers in Oklahoma purchase stocker cattle in the fall and winter them on dormant, standing, forages prior to grazing summer grass. The use of implants during the winter phase is infrequent, since the common perception exists that cattle will not respond to an implant at the low rates of gain commonly expected during the winter grazing period. Some researchers have suggested that at very low rates of gain, it may be impossible to detect the response of live weight gain to an implant (Kuhl, 1997). However, previous research conducted at Oklahoma State has shown a response to different implant types (estrogenic and TBA/estrogenic) during winter grazing (Ackerman et al., 1997; Paisley et al., 1997, 1999). The objective of this study was to determine if steers grazing dormant Old World bluestem would respond to an estrogenic growth-promoting implant, despite having gains below 1 lb/d. Secondary objectives were to determine if the response to a Synovex-S implant was similar for steers grazing dormant Old World bluestem pasture instead of dormant native tallgrass prairie pasture (Paisley et al., 1997, 1999) and if the response of stocker steers to an estrogenic type implant (Synovex-S) was similar to steers grazing dormant Old World bluestem but receiving a combination estrogen-trenbolone acetate implant (Revalor-G; Ackerman et al., 1997).

Materials and Methods

Spring-born, fall-weaned, mixed breed (English x Continental), steers (125 and 137 head, yr 1 and 2, respectively) were received at the OSU Bluestem Research Range in November of 1999 and 2000. In December of each year, steers were processed (vaccinated, treated for parasites,

branded, dehorned, castrated, and eartagged) and randomly assigned to implant treatment. Steers were allowed to graze 200 and 260 acres of dormant Old World bluestem for the duration of the winter grazing period, 93 and 123 d, respectively, in 1999-2000 and 2000-2001). This resulted in stocking rates based on initial live shrunk body weight of 33 and 36 AUD/acre during the first and second years, respectively. Weights for the first year of the study were taken on December 7, 1999, January 26, and March 10, 2000, while weights for the second year were taken on December 17, 2000, February 20, and April 17, 2001. All weights were taken following a removal of access to feed and water of approximately 10 h. Steers were supplemented three times weekly with a cottonseed meal, wheat middlings based range cube (3/4") that contained approximately 30% CP and 86% TDN, and was fed at a rate of 6 lb/steer at each of three weekly feedings. Forage availability was determined from 40 clipped .1 m^2 quadrats each year and averaged 3756 and 1813 lb/acre during the first and second halves of the winter grazing periods across both years. Diet quality was estimated from masticate samples collected using the ruminal evacuation technique and averaged 4.4% CP and 59% IVOMD, during the first half of the winter grazing periods and 6.5% CP and 56% IVOMD during the second half of the winter grazing periods. Experimental design was a completely randomized design with two treatments (implant or no implant) repeated over 2 yr. Steer was considered the experimental unit and included in the model as a random variable while fixed effects included in the model were year, implant treatment, and their interaction. Response variables were analyzed using PROC MIXED (SAS Inst. Inc., Cary, NC). Means were calculated using the LSMEANS option and separated by least significant difference. No interactions (P>.27) between year and implant treatment were noted for any of the response variables.

Results and Discussion

Steers that received an implant of Synovex-S during the winter grazing period in both years had greater (P<.01) weight gain and ADG than those steers that did not receive an implant (Table 1). While initial and final steer BW, weight gain, and ADG were different (P<.01) between years, the response to an implant was similar (P>.27) for both years (Table 1). The increased gains that resulted from the use of a Synovex-S implant agrees with previous work (Ackerman et al., 1997; Paisley et al., 1997) conducted with either a Synovex-S implant on different forage, or a combination estrogen-trenbolone acetate implant (Revalor-G) on Old World bluestem. The improvement in weight gain during the winter grazing period resulted in a 30% increase in total gain and a 27.6% in ADG. The use of a Synovex-S implant during the winter grazing phase of stocker cattle production resulted in an approximate increase in gross returns of $8.72 per steer when averaged across the 2 yr of the study. While ADG in the current study was below 1 lb/d, it was similar to levels previously suggested (.25 to .5 lb/d) to be minimal for a difference in ADG due to an implant to be detected (Kuhl, 1997). We were able to detect a response in gain of live body weight as a result of an estrogenic growth-promoting implant given to stocker steers during winter grazing of dormant, low-quality forage.

Table 1. Weight and weight gain by steers with or without a Synovex-S implant grazed on dormant Old World bluestem pastures during the winters of 1999-2000 and 2000-2001

Item	No implant	Implant	SE	P-value
Steer body weights, lb				
Year 1				
December	475	473	7.5	.88

January	481	486	6.5	.55
March	540	551	7.4	.28
Year 2				
December	454	455	7.2	.95
February	434	444	6.2	.27
April	457	466	7.1	.35
Steer weight gain, averaged across years				
Total pounds	34	45	2.5	.01
Pounds per day	.37	.47	.02	.01

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