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Drylot receiving program vs pasture conditioning with Micotil® metaphylaxis for grazing stocker calves

Abstract

Three stocker cattle field studies were conducted comparing a traditional 4- to 5-week drylot receiving program with injectable antibiotics administered on a pull-and-treat basis versus a pasture-based conditioning program using an initial metaphylaxis with Micotil® followed by immediately placing cattle on grass. Although daily gains were similar (P=.80) for both receiving programs during the first 28 days, pasture conditioning reduced the number of cattle treated and increased (P<.01) daily gains during the subsequent grazing phase.

Keywords

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DRYLOT RECEIVING PROGRAM VS PASTURE CONDITIONING WITH MICOTIL® METAPHYLAXIS FOR GRAZING STOCKER CALVES

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Summary

Three stocker cattle field studies were conducted comparing a traditional 4- to 5-week drylot receiving program with injectable antibiotics administered on a pull-and-treat basis versus a pasture-based conditioning program using an initial metaphylaxis with Micotil® followed by immediately placing cattle on grass. Although daily gains were similar (P=.80) for both receiving programs during the first 28 days, pasture conditioning reduced the number of cattle treated and increased (P<.01) daily gains during the subsequent grazing phase.

(Key Words: Stockers, Receiving, Metaphylaxis, Micotil®)

Introduction

Many forage-based stocker programs still utilize an initial 21- to 45-day drylot conditioning period to "straighten out" recently purchased and(or) commingled cattle. Confining cattle to a smaller area makes it easier to identify and treat sick animals. However, drylot programs may increase stress as calves are forced to cope with dusty or muddy pens, while adjusting to feedbunks, waterers, and new feeds. Additionally, the higher density likely facilitates the transmission of disease-causing organisms from animal to animal. Pasture conditioning programs have the potential to reduce stress, because cattle remain on a forage diet and are able to spread out, possibly reducing disease transmission. This study was conducted to compare two management strategies used in pasture-based stocker programs: traditional drylot receiving programs versus a pasture-based conditioning program that included metaphylaxis. Stocker morbidity and performance were measured during the receiving phase and subsequent grazing.

Experimental Procedures

Five hundred ninety three steers across three locations were assigned randomly to one of two treatments: 1) traditional drylot conditioning for 28 to 35 days (DRYLOT) or 2) pasture conditioning after a maximum of 48 hours in drylot (PASTURE). Basic processing on arrival was identical for all cattle, and in addition, PASTURE cattle received a metaphylactic dose (1.5 ml/cwt) of tilmicosin phospate (Micotil). Respiratory disease treatment protocol for both DRYLOT and PASTURE cattle was Micotil, followed by Nuflor. Cattle on the DRYLOT treatment received a conditioning ration free choice during the initial 30-day period. Management of PASTURE cattle depended on the type of forage grazed. Following the initial 30-day conditioning period, cattle were combined into a similar pasture for the remainder of the grazing period.

Site 1. (Chanute, KS). One hundred ninety eight heifers (initial wt 500 lb) originating from Missouri were received in two groups of 67 and 129 head. Each group was split, so 99 were in DRYLOT and 97 in

[1]South Central Area Extension Office, Hutchinson.
[2]Southeast Area Extension Office, Chanute.

PASTURE. Initial weights were recorded on December 2 and 8, 1998. Conditioning period weights were recorded on January 6, resulting in 29- and 35-day conditioning periods. Following the conditioning period, all heifers grazed fescue pastures with some additional dormant winter grass throughout the trial. The fescue was twice covered with ice during the receiving period. Heifers from both groups were stressed further by stray dogs during the receiving period. Final weights taken on April 19, 1999.

Site 2. (Emporia, KS). One hundred ninety nine steers (initial wt 488 lb) originating from Missouri were divided equally into two groups. Initial weights were taken on November 10 and 17, 1998. Conditioning period weights were recorded on December 8 and 17, respectively. Normal receiving management consisted of measuring rectal temperature twice, on day 1 and between days 4 and 6. On both days, steers received Micotil if rectal temperature was $\geq$103°F. Morbidity percentages depicted in Table 1 include those animals that were treated because of high rectal temperature. Steers grazed dormant native grass with minimal cool-season forages. Final weights were recorded on May 25, 1999.

Site 3. (Kingman, KS). One hundred ninety eight steers (initial wt 469 lb) originating from Southeast Colorado were either placed in drylot or immediately hauled to an irrigated winter wheat pasture. Initial weights were recorded on November 17, 1998 and following the conditioning phase on December 15. After the second weighing, all steers grazed the same irrigated wheat pasture for 70 days, and final weights were taken February 23, 1999.

Effects of conditioning-period management on performance were analyzed using site × treatment as the error term. Morbidity data are presented by site and whole trial averages but were not analyzed because of different management protocols across sites.

Results and Discussion

Daily gains during the conditioning phase were similar (P=.80) for both treatments, although the relative differences varied from site to site. Cattle grazing dormant forage gained less weight during the conditioning phase than cattle in drylot; however, steers grazing winter wheat outgained their drylot counterparts. Morbidity was dramatically lower for PASTURE cattle at all three field study sites, despite different receiving management. The magnitude of the decrease was considerably greater than reported in previous trials. Additionally, the number of cattle treated a second time was lower for PASTURE cattle. These results suggest that the benefits of pasture-based conditioning programs and the use of metaphylaxis may be additive.

Subsequent grazing performance was greater (P<.01) for PASTURE cattle. However, this difference may reflect either differences in fill between DRYLOT and PASTURE cattle at the end of the conditioning phase or a necessary adaptation back to a forage-based diet for DRYLOT cattle.

Table 1. Effects of Receiving Management on Initial Performance, Morbidity, and Subsequent Grazing Performance of Calves on Forage-Based Stocker Programs

Item	DRYLOT	PASTURE	P-Value
Site 1. Chanute, KS			
Number	99	97	
Conditioning daily gain, lb/day	.68	.60	
Morbidity, %	71	27	
Retreats, %[a]	38	12	
Subsequent daily gain, lb/day	.17	.30	
Site 2. Emporia, KS			
Number	100	99	
Conditioning daily gain, lb/day	2.38	1.45	
Morbidity, %[b]	90	6	
Retreats, %	8	0	
Subsequent daily gain, lb/day	.64	.77	
Site 3. Kingman, KS			
Number	99	99	
Conditioning daily gain, lb/day	1.60	2.22	
Morbidity, %	37	4	
Retreats, %	35	0	
Subsequent daily gain, lb/day	1.66	1.84	
Three-site average			
Number	298	295	
Conditioning daily gain, lb/day	1.42	1.55	.80
Morbidity, %	60	10	
Retreats, %	27	5	
Subsequent daily gain, lb/day	.82	.97	.01

[a]Expressed as a percent of cattle treated previously.

[b]Morbidity value for DRYLOT includes all steers treated based on temperatures > 103°F.