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Effect of a Yeast Culture Product (Yea-Sacc) on Feedlot Performance of Growing Calves Limit-Fed a High Concentrate Diet

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Summary

Eighty weaned steer calves (initial weight 535 lb) were blocked by weight, allotted within block to 8 pens and limit-fed a high concentrate diet without (CONT) or with Yea-Sacc (YS; 13 g per day). The diet consisted of 69% whole, high moisture corn, 20% ground alfalfa hay, 2% molasses, and 9% supplement (dry matter basis). The diet was fed once daily for an average of 99 days in amounts calculated to result in CONT calf daily gain of 2.25 lb. As intended, dry matter intakes of calves on the two treatments were identical (13.3 lb/day). Daily gains averaged 2.40 and 2.32 lb ($P > .20$) and feed efficiency 5.55 and 5.73 ($P > .20$) for CONT and YS, respectively. YS did not improve gain or feed efficiency of growing calves limit-fed a high concentrate diet.

Key Words: Yeast Culture Product, Performance, Limit-fed, Grain Diet

Introduction

Many direct-fed microbial products have been introduced into the market place over the past decade. Although evidence for a positive effect on animal performance has existed for many years, adoption has been slow. This is probably due to the lack of performance data indicating in which specific production situations the various products are or are not effective. A previous study at SDSU indicated that the feeding of a yeast strain specifically selected to compliment high grain diets (Yea-Sacc, Alltech,

Inc., USA) was effective in improving daily gain of yearling steers.

The objective of this study was to determine if this same yeast strain could positively affect feedlot performance of growing calves limit-fed a high concentrate (20% roughage) diet.

Materials and Methods

A group of 89 weaned, crossbred steer calves were vaccinated (IBR, BVD, BRSV, Lepto, and 7-way clostridium), dewormed (ivermectin³), implanted (zeranol⁴), ear tagged, and weighed upon arrival at the Southeast South Dakota Research Farm feedlot. From these, 80 calves were selected and placed immediately on test. They were randomly allotted within weight block to pens (8 pens, 10 head each) and fed a common test diet (Table 1) without (CONT) or with Yea-Sacc (YS). Grass hay was fed only on the first day. The test diet was initially fed at an average of 7 lb of dry matter per day and this was increased to 12 lb by day 12. Feed offered was increased weekly thereafter by an amount calculated to maintain CONT calf daily gain at 2.25 lb per day. The YS calves were fed the same amounts within weight block as the CONT calves. Feed was offered once daily and, because the amount was considerably below ad libitum intake, was usually consumed within 3.5 hours of feeding. The bunks were empty for the remainder of the day. Yea-Sacc was fed as part of a pelleted supplement. Yea-Sacc intake averaged 17 g per day during the initial 12 days of the test and 13 g for the remainder.

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On-test weights were taken upon arrival at the feedlot but before feeding. Final weights were taken after overnight removal of feed and water. The calves in the heavy weight block were fed 85 days while those in the light weight block were fed 112 days. The data were statistically analyzed on a pen basis as a complete block design.

Results and Discussion

Performance data are presented in Table 2. As intended, dry matter intakes of the calves on both test diets were identical. Daily gains for the CONT calves, while 6.7% greater than predicted, were not different from those of YS calves ($P > .20$). As a result, feed efficiencies were not affected by treatment ($P > .20$).

In this study, YS did not improve performance of growing calves limit-fed a high concentrate diet.

Table 1. Composition of the limit-fed, high concentrate growing diet (dry matter basis)^a

Item	Percent
High moisture whole corn	69.00
Ground alfalfa hay	20.00
Supplement	
Soybean meal	4.92
Molasses	2.00
Urea	1.00
Dicalcium phosphate	.70
Limestone	.80
Potassium chloride	.50
Trace mineral salt	.67
Fat	.10
Premix ^b	.31

^aFormulated to contain 14.8% crude protein, .76% Ca, .47% P and 1.03% K.

^bProvided 222 mg Rumensin and 62,000 IU supplemental vitamin A per day. Supplement was pelleted. Yea-Sacc was included at 1 g/lb of diet dry matter for treated calves.

Table 2. Feedlot performance of steer calves limit-fed a high concentrate diet with or without Yea-Sacc

Item	Treatment		SE
	Control	Yea-Sacc	
No. of steers	40	40	
Initial wt, lb	535	536	7.2
Dry matter intake, lb/day	13.3	13.3	--
Wt gain, lb/day	2.40	2.32	.079
Feed:gain	5.55	5.73	.138

^aIntake fixed within weight block at level calculated to allow 2.25 lb daily gain by the control calves.