

1994

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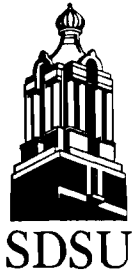
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Recommended Citation

Birkelo, C. P. and Berg, R. K., "Effect of Yeast Culture Product (Yea-Sacc) on Feedlot Performance of Yearling Cattle Fed a High Concentrate Finishing Diet" (1994). *South Dakota Beef Report, 1994*. Paper 5.
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Effect of a Yeast Culture Product (Yea-Sacc) on Feedlot Performance of Yearling Cattle Fed a High Concentrate Finishing Diet

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CATTLE 94-4

Summary

The objective of this study was to determine if yeast culture (Yea-Sacc, Alltech, Inc., USA) affects feedlot performance and carcass characteristics of yearling steers fed a corn-based finishing diet containing less than 10% roughage. Crossbred yearlings (108 steers, avg 874 lb) were fed a rolled corn diet (8.44% ground alfalfa hay) without (CON) or with Yea-Sacc (YS, 9 g per head per day) for 95 days. Final weights were 15 lb greater ($P < .07$) for YS steers than CON as a result of a 12.3% increase in daily gain between day 29 and day 57 ($P < .03$). Daily gains were 4.1% greater for YS-fed steers overall ($P < .07$). Dry matter intake was not affected by treatment ($P > .20$). Feed efficiency tended to be improved for YS steers between day 29 and day 57 ($P < .11$) but did not differ at other times or overall ($P > .20$). Treatment increased carcass weights by 13 lb ($P < .09$) but did not affect dressing percentage or frequency of abscessed livers ($P > .20$). Effects on quality and yield grade, while significant, were small. The inclusion of yeast culture in a corn-based diet containing less than 10% roughage improved daily rate of gain but did not affect intake or efficiency and had minimal effect on carcass characteristics.

Key Words: Steers, Feedlot Performance, Carcass Traits, Yeast

Introduction

Many direct-fed microbial products have been introduced into the marketplace over the past decade. Although evidence for a positive effect on animal performance has existed for many years, adoption by cattle producers 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.

The objective of this study was to determine if a yeast strain specifically selected to complement high grain diets (Yea-Sacc, Alltech, Inc., USA) affects feedlot performance and carcass characteristics of yearling steers fed a high concentrate, corn-based finishing diet (less than 10% roughage).

Materials and Methods

One hundred twenty-four yearling, crossbred steers were purchased in early July 1993 and delivered to the SE South Dakota Research Farm feedlot. The steers were weighed, identified with individual ear tags and vaccinated with IBR, BVD, Lepto pomona, BRSV, and 7-way clostridial vaccines. They also received Ivermectin³ and a single Revalor⁴ implant. Light and heavy extremes were sorted off and the remaining 108 steers were randomly allotted to treatments with nine head per pen and six pens per treatment. Half of the cattle on each treatment were housed in semi-confinement on cement while the rest were

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housed in conventional dirt lots with mounds and wind breaks.

The steers were fed diets with (Yea-Sacc, 9 g per head per day) or without (control) the yeast product. A series of four receiving/step-up diets were used in addition to a finishing diet (Table 1) which was initially fed on day 17 of the study. The diets were formulated to provide 12% crude protein, .60% Ca, .35% P, and .75% K. Analyzed diet crude protein contents were 11.7% and 11.9% for control and Yea-Sacc, respectively. Feed was provided once per day in amounts necessary to result in a stable, ad libitum intake while minimizing feed carryover.

Table 1. Finishing diet composition (as fed basis)

Ingredient	Percent
Rolled corn	84.33
Alfalfa hay	8.44
Molasses	2.75
Soybean meal	1.49
Dicalcium phosphate	.07
Limestone	1.13
Potassium chloride	.41
Trace mineral salt	.44
Fat	.06
Urea	.77
Premix ^a	.11

^aContained Rumensin 60, vitamin A and Yea-Sacc (when appropriate) to provide 28 g/ton (DM), 50,000 IU and 9 g per head daily, respectively. The supplement was pelleted.

Initial and final weights were determined after an overnight shrink off feed and water.

Interim weights were determined after an overnight shrink off water only. All data were statistically analyzed as a complete block design. Percentage of abscessed livers was tested by chi-square analysis.

Results and Discussion

Performance data are presented in Table 2. Feed intakes and feed efficiencies are reported on a dry matter basis. Slaughter weights were significantly greater for cattle fed the Yea-Sacc treatment ($P < .07$). This was the result of a 12.3% increase in daily gains between days 29 and 57 of the study ($P < .03$). Although no differences were found at other times during the study, daily gains for the Yea-Sacc cattle were also better overall (days 1 through 95) by 4.3% ($P < .07$). Feed intakes were not affected by treatment ($P > .20$). This fact, coupled with the increase in daily gains, resulted in a tendency toward improved feed efficiencies between days 29 and 57 ($P < .11$). However, this effect was not evident in the overall feed efficiencies.

Carcass weights were 13 lb greater ($P < .09$) for steers fed the Yea-Sacc diet, reflecting the greater live weight gain (Table 3). Dressing percent was not affected by treatment ($P > .20$). Quality grade was reduced ($P < .04$) and yield grade was increased ($P < .08$) by treatment. However, changes in each were small. Percentage of livers containing abscesses was not affected by treatment ($P > .20$).

The results of this study indicated that this particular yeast product is effective in improving performance of yearling cattle fed corn-based finishing diets containing less than 10% roughage while having minimal effect on carcass characteristics.

Table 2. Performance of yearling steers fed finishing diets with or without Yea-Sacc

Item	Treatment ^a		P < ^b
	Control	Yea-Sacc	
No. of steers	54	54	
Initial weight, lb	871	877	NS
Final weight, lb	1,227	1,242	.07
Daily gain, lb			
1 to 28 days	4.26	4.31	NS
29 to 57 days	3.33	3.74	.03
58 to 95 days	3.62	3.65	NS
1 to 95 days	3.72	3.88	.07
DM intake, lb			
1 to 28 days	19.1	19.1	NS
29 to 57 days	23.5	23.8	NS
58 to 95 days	23.3	23.3	NS
1 to 95 days	22.2	22.2	NS
Feed:gain			
1 to 28 days	4.57	4.44	NS
29 to 57 days	7.18	6.38	.11
58 to 95 days	6.45	6.47	NS
1 to 95 days	5.97	5.75	NS

^aLeast squares mean.

^bSignificance level, NS = not statistically significant.

Table 3. Carcass characteristics of yearling steers fed finishing diets with or without Yea-Sacc

Item	Treatment		P < ^a
	Control	Yea-Sacc	
Carcass wt, lb	739	752	.09
Dressing percent	60.4	60.3	NS
Quality grade ^b	4.8	4.6	.04
Yield grade	2.3	2.5	.08
Abscessed livers, %	16.7	14.8	NS

^aSignificance level, NS = not statistically significant.

^b4.0 = Select^o, 5.0 = Choice^o.