

Yucca Extract With and Without *Aspergillus Oryzae* in Finishing Diets

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Summary

A dry yucca extract feed additive (SarStart D²) was added to a high concentrate dry corn based finishing diet and fed to crossbred yearling steers for 110 days. The inclusion of the dry product containing yucca extract in the diet appeared to slightly improve daily gain and feed conversion, but the differences were not statistically significant. Adding an *Aspergillus Oryzae* enzyme to this product did not improve cattle performance.

Introduction

Processing of dry corn for finishing cattle can lead to dust which reduces palatability of a dry diet. Liquid grain tempering agents containing yucca extract have been applied along with water to dry corn before processing to improve palatability and cattle performance. Research reported by Rush in the 1993 Nebraska Beef Report, page 63, showed significant improvements in daily gain and feed conversion for finishing steers when dry corn was treated with SarTemp^{®3} which is a commercial liquid grain conditioning product containing yucca extract. The purpose of this trial was to evaluate a similar dry product containing yucca extract when added to a finishing diet. An additional purpose was to evaluate this product with the addition of *Aspergillus Oryzae* enzyme.

Procedure

Ninety crossbred yearling steers weighing an average of 968 lb initially were fed a finishing diet for 110 days. They had previously grazed a common summer pasture and then fed warm-up diets in the feedlot for about 60 days.

At the initiation of the trial the cattle were poured with a systemic insecticide, vaccinated with 7-way black leg, and implanted with Synovex-S. Using 3 pens per treatment, steers were fed a control diet of 85% dry rolled corn, 10% corn silage and 5% of a 40% protein supplement, all on a dry matter basis. A dry product containing yucca extract was added to the dry corn diet in the feed mixer just before feeding at the rate of .1 lb per head/day. Another treatment was the inclusion of an enzyme from the *Aspergillus Oryzae* strain with the yucca extract. Carcass measurements were taken at slaughter. Final weight was calculated by dividing hot carcass weight by a common dressing percent (62.5).

Results

Adding the yucca extract additive to the dry corn appeared to improve daily gain by 11.5% and feed conversion by 6% over the control, but the differences were not statistically significant (Table 1). The addition of an *Aspergillus Oryzae* enzyme to the yucca extract was not beneficial for steer performance. Carcass measurements did not show differences among the treatments except for an apparent increase in the percent of Choice carcasses for the yucca extract additive alone. The marbling scores were not different, so there was little reason to expect any difference in quality grade.

Yucca extract has been used most often in liquid grain tempering agents for the purpose of improving diet quality and cattle performance. The results of this trial suggest that further study of the dry yucca extract product be made in other diets, but offer less hope for benefits in cattle finishing performance from including an *Aspergillus Oryzae* enzyme in the yucca extract product.

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² SarStart D is a product of Sartec Corporation, Anoka, Minnesota

³ SarTemp[®] is a product and a registered trademark of SarTec Corporation, Anoka, Minnesota.

Table 1. Steer performance when fed yucca extract with or without *Aspergillus Oryzae*

	Dry Corn Control	Yucca Extract Additive	Yucca Extract + Enzyme	P-value
No. of Steers	30	30	30	
No. of Pens	3	3	3	
Initial wt, lb	974	974	956	
Final wt, lb ^a	1220	1249	1209	
Daily gain, lb ^a	2.24	2.50	2.30	.47
Daily feed DM, lb	21.4	22.3	21.4	.32
Feed/gain ^a	9.59	9.01	9.32	.74
Hot carcass wt, lb	763	781	756	.47
Fat cover, in.	.49	.51	.55	.38
Marbling score ^b	5.3	5.4	5.3	.69
Choice grade, %	57	70	57	
Yield grade	2.63	2.6	2.69	.67

^a Final wt. calculated from hot carcass wt. + .625 dress.

^b Marbling score of 5.0 = small ° degree of marbling.