

Results of this trial and other research indicate that results with wheat may be variable, but that acceptable feedlot performance and carcass merit can be obtained with wheat in the finishing ration. For consistently best results, wheat should not replace over one-half of the milo. The higher protein content of wheat should be recognized and the supplemental protein reduced accordingly.

The Value of Vitamin E Injections for Feedlot Calves*

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Story in Brief

Vitamin E injections were given to one-half of a group of steers, heifers and bulls during a 168-day feeding trial. A total of 1500 I.U. was administered on the 28th day and again on the 84th day. The vitamin E was without apparent affect on rate of gain and carcass traits. It was concluded on this basis that the ration fed was adequate in Vitamin E.

Introduction

Several research reports from other states have indicated a possible deficiency of vitamin E in some cattle finishing rations, and occasional reports from the field have suggested a benefit from the administration of supplemental vitamin E to feedlot cattle. The objective of this experiment was to determine the value of vitamin E injected into calves being finished in drylot.

Procedure

A total of 138 Angus calves, including 44 steers, 48 heifers, and 46 bulls, was available for this experiment. The calves were dropped primarily in February and March and placed in the feedlot immediately

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after weaning at an average age of seven months. The calves were sired by eight bulls, and all eight sires were represented within each sex group. The progeny of each sire within each sex group was randomly allotted to one of two treatments, vitamin E or no vitamin E, so that equal numbers of each treatment were represented within each sire-sex group. The calves were fed together by sex group; that is, all steers were fed together, all heifers were fed together, and all bulls were fed together. Consequently, it was not possible to obtain data on feed efficiency.

The feeding period was 168 days long. At 28 days, those calves designated to receive vitamin E were injected as they passed through the chute to be weighed. A second injection was given 56 days later, 84 days after the beginning of the feeding period. The vitamin E product used contained 100 I.U. of dl-alpha-tocopheryl per c.c. A total of 15 c.c., containing a total of 1500 I.U. of vitamin E, was administered at each injection.

Injections were intramuscular and in each case were made at two different sites in the rump. The ration consisted of (percent): ground shelled corn, 27.0; chopped alfalfa hay, 12.5; cottonseed hulls, 25.0; whole oats, 10.0; wheat bran, 10.0; cottonseed meal, 10.0; molasses, 5.0; and salt 0.5. Chlortetracycline was fed at a level of 5 mg. per lb. of ration. Feed was available at all times in self feeders. The cattle were housed in open sheds, with free access to outside pens paved with concrete. Water was available at all times.

Results and Discussion

The rate of gain of the three sex groups, with and without injected vitamin E, by accumulative period following each of the two injections, is presented in Table 1. A summary of all sex groups, and for the total 140-day period following the first injection, is also given in Table 1.

A trend in rate of gain due to treatment is not apparent. Differences in rate of gain following either the first or second injection were not consistent among sex groups. Differences in gain within sex groups, and for the average of all sex groups, for the entire 140 day period, seemed to be largely a reflection of genetic potential for rate of gain as indicated by gains made during the 28 day preinjection period.

Average values obtained for various slaughter and carcass traits are shown in Table 2. All differences between treatments were very small, indicating that injected vitamin E did not affect carcass merit.

The results of this trial indicate that the ration which was fed was adequate in vitamin E, because there was no obvious benefit from in-

Table 1. Rate of Gain of Feedlot Calves as Affected by Vitamin E Injections

Sex	Vit. E	No. Calves	Initial Wt., lb.	Pretest 28 Days	Average Daily Gain, lb.					
					After 1st Injection ¹		After 2nd Injection ²			
					28 Days	56 Days	28 Days	56 Days	84 Days	140 Days
Steers	No	22	480	2.91	3.67	2.76	2.55	2.62	2.30	2.56
	Yes	20 ³	476	2.64	3.75	2.62	2.62	2.56	2.25	2.44
Heifers	No	24	456	2.20	2.63	2.37	2.32	2.22	2.05	2.22
	Yes	24	469	1.98	2.77	2.38	2.07	2.06	1.94	2.09
Bulls	No	23	494	2.88	3.48	3.74	1.94	2.16	2.35	2.90
	Yes	23	488	2.88	3.38	3.58	2.36	2.27	2.44	2.89
Total	No	69	477	2.66	3.26	2.96	2.27	2.33	2.23	2.56
	Yes	67	478	2.50	3.30	2.86	2.35	2.30	2.21	2.47

¹ The first injection consisted of 1500 I.U. of dl-alpha-tocopheryl given 28 days after the beginning of the feeding trial.

² The second injection consisted of 1500 I.U. of dl-alpha-tocopheryl given 84 days after the beginning of the feeding trial.

³ Two calves were removed from test early in the trial and were not included in the data.

Table 2. Carcass Traits as Affected by Vitamin E Injections

	Vit. E	Dress. ¹ Percent	REA Sq. in.	Percent ² Round	Fat ⁴ in	Kid. Fat ⁵ Percent	Marb. ⁶ Score	Grade ⁷	Mat. ⁸ Score	Cutability ⁹
Steers	No	64.1	11.0	20.5	.80	2.7	5.4	10.3	16.7	49.2
	Yes	64.0	10.9	20.1	.82	2.8	5.6	10.3	16.6	49.2
Heifers	No	63.9	10.5	19.8	.79	3.3	6.2	10.9	17.2	48.6
	Yes	63.8	10.6	19.6	.74	3.1	6.2	11.0	17.2	49.3
Bulls	No	62.8	12.4	21.1	.63	1.5	3.7	8.6	17.8	52.0
	Yes	61.4	12.1	21.1	.64	1.7	4.3	9.0	17.8	51.6
Total	No	63.6	11.3	20.4	.74	2.5	5.1	9.9	17.2	49.9
	Yes	63.1	11.2	20.3	.73	2.5	5.4	10.4	17.2	50.0

¹ Based on shrunk Ft. Reno live weight and chilled carcass weight.

² Ribeye area measured on tracings of the ribeye.

³ Based on trimmed round and chilled carcass weight.

⁴ Average of three measurements on tracings at the twelfth rib.

⁵ Estimated by visual observation.

⁶ Based on 2=practically devoid, 3=trace, 4=slight, 5=small, 6=modest, 7=moderate, 8=slightly abundant, 9=moderately abundant.

⁷ U.S.D.A. grade with high prime=15, high choice=12, high good=9.

⁸ Based on A=17, B=14, C=11.

⁹ Estimated percent of carcass as boneless trimmed retail cuts.

jecting cattle with vitamin E at two times during the feeding trial. It is possible that vitamin E could exert a beneficial influence on feed efficiency, which could not be measured in this trial. It is also possible that in other situations with different feedstuffs, supplemental vitamin E might be of some value if the ration is deficient in vitamin E. Deficiencies of vitamin E in feedlot cattle do not appear to be widespread, however.

Early Weaning vs. Normal Weaning vs. Creep Feeding of Heifer Calves

Robert Totusek

Story in Brief

Angus and Hereford heifer calves were subjected to (1) low, (2) medium, and (3) high planes of nutrition previous to weaning by (1) weaning at 140 days, (2) weaning at 240 days, and (3) creep feeding and weaning at 240 days, resulting in over 100 lb. spread in weight at 240 days of age. Compared to normal weaning, early weaning has resulted in a slight decrease in weight to 4 years of age, no permanent affect on appearance and skeletal size, and an increase in productivity based on the weaning weight of calves produced, while creep feeding has resulted in no permanent advantage in body size and no advantage in productivity.

Introduction

Since feeder calves represent an important source of agricultural income in Oklahoma, the development of the beef female for maximum productivity (milk production) and reproductive performance is of obvious importance. Milk production and reproductive performance can be markedly influenced by both undernutrition and overnutrition during the postweaning period of development. The harmful effects of severe undernutrition during the growth period on milk production of the beef female have been recognized for many years. More recently the possible detrimental influence of a high plane of nutrition during the postwean-

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