

Use of Soybean Oil Meal, Dehydrated Alfalfa and Urea in a Sorghum Grain Finishing Ration, 1964.

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The following ingredients were used with rolled sorghum grain, which contained 16% protein, to formulate a 13% protein mixture: (1) soybean oil meal, dehydrated alfalfa and urea; (2) dehydrated alfalfa and urea; and (3) urea. In addition to the concentrate mixture which was self-fed, less than 2 pounds of prairie hay was fed per head daily. The heifers had been on a ration of wheat bran, dehydrated alfalfa and rolled sorghum grain. They were reallocated to minimize any previous treatment effect. Sorghum grain was increased until it made up to 85% of the ration. Then the above experimental rations were started.

Two different tests are reported in Table 32. One where the three diets were tested by heifers under group feeding and one where the three diets were fed to animals penned individually.

Heifers fed the combination of alfalfa and urea gained slightly more than those fed soybean oil meal or urea. Feed consumption was slightly lower on the urea ration. The experimental rations had little effect on feed efficiency or carcass characteristics measured except that carcass grade was about one third grade higher under group feeding where dehydrated alfalfa and urea were fed and grade was slightly lower under individual feeding with the urea ration.

Level of Vitamin A in Beef Steer Finishing Ration Fed on High and Low Levels of Silage (Project 567).

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Sixty Hereford steer calves from Warner's Ranch in Rice County were wintered on a ration of 1 pound soybean oil meal, sorghum silage, sorghum grain and minerals. The calves weighed 450 to 550 pounds; 30 were fed 4 pounds of grain and 30 were fed 8 pounds of grain per head daily for 112 days. They averaged approximately 743 pounds at the end of the wintering period.

The 60 steers were allotted to 6 lots of 10 each and numbered consecutively from 7 to 12. Each lot received 5 steers that had been fed 4 pounds of grain and 5 steers that had been fed 8 pounds of grain. Three lots (7, 8, and 9) received a low level (10 pounds) of silage and three lots (10, 11, and 12) received a high level (20 pounds) of silage. One lot on each level of silage received no added vitamin A (Lots 7 and 10), 15,000 I.U. of vitamin A (Lots 8 and 11) and 30,000 I.U. of vitamin A (Lots 9 and 12).

The corn silage was poor quality and the high-silage groups would not eat 20 pounds per head daily. The amount of silage was lowered to 7 and 14 pounds, respectively, for the low- and high-silage lots. Sorghum grain was fed in the amount that the animals would clean up each day. Except for the added vitamin A, the supplement was the same for all lots. It was fed at the rate of 1.5 pounds per head daily and was composed of 60.5% soybean oil meal, 30.2% dehydrated alfalfa, 4.4% molasses, 4.4% calcium carbonate and 2.5% Aurofac 10 (supplied 70 mgs. aureomycin per head daily).

Results and Observations

Table 33 summarizes the results.

1. Average daily gain tended to be higher on high silage (2.00 pounds vs. 1.89); however, average cost was essentially the same (\$19.97 per 100 pounds gain vs. \$19.89).
2. There were no significant ($p < .05$) differences in gain except Lot 12 (high silage and 30,000 I.U. of vitamin A).
3. Livers in lots with no vitamin A were extremely low in vitamin A. Levels of added vitamin A were reflected in higher liver storage.
4. There were no significant differences in feed efficiency, carcass grade, dressing percentage, rib-eye area or fat thickness.
5. Level of grain in the wintering ration did not cause any difference in rate of gain (1.91 for those wintered on 4 pounds and 1.93 for those on 8 pounds) or any of the carcass characteristics.

Table 33 Results of feed lot test, March 6 to September 18, 1964—196 days.

Level of silage	Low			High		
	7	8	9	10	11	12
Steers per lot	9 ¹	9 ²	10	10	10	10
Initial wt. per steer, lbs.	711	745	742	742	743	744
Final wt. per steer, lbs.	1106	1104	1131	1105	1130	1107
Av. daily gain, lbs.	1.87	1.82	1.98	1.85	1.98	2.16
I.U. vit. A added daily	0	15000	30000	0	15000	30000
Av. daily ration, lbs.:						
Supplement	1.5	1.5	1.5	1.5	1.5	1.5
Sorghum grain	14.6	14.5	15.3	13.9	14.8	15.8
Silage	9.1	9.0	9.1	14.4	15.4	15.7
Feed per cwt. gain, lbs.:						
Supplement	81	82	76	81	76	70
Sorghum grain	783	794	771	750	749	707
Silage	486	492	487	775	777	728
Feed cost per cwt. gain	\$19.92	\$20.27	\$19.49	\$20.49	\$20.31	\$19.13
Shrink to market, %	2.51	2.25	1.68	2.40	2.74	2.10
Av. hot carcass wt., less 2%	688.2	674.2	698.3	693.1	693.1	722.3
Dressing %, feed lot wt.	62.2	61.08	61.74	62.70	61.31	61.89
Dressing %, market wt.	63.8	62.49	62.80	64.24	63.04	63.22
Av. fat thickness, 12th rib, in.	0.85	0.95	1.07	1.01	1.05	1.03
Av. size rib eye, sq. in.	11.71	11.07	11.28	12.00	11.85	11.43
Carcass grades:						
Top choice	1	1	1	3	1	1
Av. choice	3	2	1	3	1	1
Low choice	5	4	5	6	4	3
Top good	2	2	4	1	6	3
Av. good	.....	.....	.....	.....	.....	.....
Low good	.....	.....	.....	.....	.....	.....
Av. liver wt., lbs.	11.11	10.36	10.71	10.19	10.45	10.88
Vit. A per gram liver, I.U.	0.77	16.03	30.06	0.91	14.87	34.36
Total vit. A per gram liver, I.U.	4112	76623	148145	3463	71318	166445
Carotene per gram liver, mcg.	1.06	1.31	0.77	1.25	1.11	1.21
Total carotene per gram liver, mcg.	5.3	6.2	3.9	6.1	5.2	6.0

1. One steer died from gastroenteritis.
2. One steer died from urinary calculi.