

The type of molasses fed seemed to have very little influence on rate of gain, feed consumption, palatability, efficiency or carcass characteristics measured (Table 30).

In the comparison where two lots of the steers had access to a shed and two did not, those without the shed shelter made a slightly greater daily gain. Probably 10 to 20% of the days were hot enough to cause panting by the steers. Steers with access to shade used it those days.

The Effects of Silage Additives on the Feeding Value of Forage Sorghum Silage, 1964-65 (Project 623).

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This experiment was to determine effects from adding glucose, sucrose and starch to forage sorghum (DeKalb FS1a), immediately prior to ensiling, on the feeding value of the subsequent silage.

When the forage sorghum grain was at medium-to-hard dough stage, it was field chopped with a conventional silage cutter. Dry matter of the forage was determined at harvesting and equalized by adding water. Each additive was added to the forage prior to ensiling. The sorghum forage was ensiled in 40-ton concrete stave silos.

Two trials were conducted. In one, steer calves were fed in groups of 10; in the other, 3 steers were individually fed the silages. The steer calves used were good-to-choice Herefords from the Warner Ranch, Cimarron, Kansas. They were assigned to experimental diets on a random-weight basis.

The amount of glucose, sucrose and starch added was 5.7, 5.6, and 5.6% of dry matter, respectively.

Table 31 presents a summary of the group and individual feeding experiments. Although there were differences in average daily gains made by the calves, the differences were not statistically significant. Under the conditions of the experiment, silage additives used had no effect on average daily gains.

The silages fed were excellent quality, indicating that sorghum silage can be made from forage that is high (40%) in dry matter.

Table 31
The effects of silage additives on the feeding value of forage sorghum silage.

Silage additive	December 4, 1964 to March 15, 1965			December 4, 1964 to March 15, 1965			December 4, 1964 to March 15, 1965		
	No.	Glucose	Sucrose	No.	Glucose	Sucrose	No.	Glucose	Sucrose
Lot no.	3	4	5	6	7	8	9	10	11
No. steers	10	10	10	10	10	10	10	10	10
Initial wt., lbs.	417	416	417	417	417	417	417	417	417
Final wt., lbs.	551	564	553	558	558	542	552	550	535
Av. daily gain, lbs.	1.34	1.48	1.46	1.41	1.41	1.25	1.35	1.33	1.18
Av. daily ration, lbs.	26.2	26.4	25.6	25.0	25.0	24.5	24.5	24.1	23.0
Silage, free choice	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Soybean oil meal	.16	.10	.10	.10	.10	.10	.10	.10	.10
Dicalcium phosphate									
Salt									
Silage dry matter, %	40.2	40.1	39.6	40.2	40.2	40.2	40.1	39.6	40.2
Silage dry matter consumed per head daily, lbs.	10.5	10.6	10.1	10.1	10.1	9.85	9.82	9.54	9.25
Silage dry matter per lb. of gain, lbs.	7.84	7.16	6.92	7.16	7.16	7.88	7.27	7.17	7.84
Feed cost per cwt. gain ¹	\$11.89	\$10.82	\$10.75	\$10.96	\$10.96	\$11.38	\$11.30	\$11.32	\$12.42

¹ Feed prices on page 72. Cost does not include salt consumed.

Table 32

Use of soybean oil meal, dehydrated alfalfa and urea in a sorghum grain finishing ration, May 6, 1964, to September 23, 1964—140 days.

Experimental treatment	Sorghum oil meal, dehydrated alfalfa, urea		Group fed		Soybean oil meal, dehydrated alfalfa, urea		Individually fed	
	Sorghum oil meal, dehydrated alfalfa, urea	Urea	Dehydrated alfalfa, urea	Urea	Sorghum oil meal, dehydrated alfalfa, urea	Urea	Dehydrated alfalfa, urea	Urea
Ration no.	1	2	2	3	1	2	2	3
No. heifers per lot	10	10	10	10	4	4	4	4
Av. initial wt., lbs.	556	596	596	575	428	429	432	432
Av. final wt., lbs.	931	964	964	914	781	808	760	760
Av. daily gain, lbs.	2.46	2.63	2.63	2.42	2.53	2.70	2.35	2.35
Av. daily ration, lbs.: Rolled sorghum grain	15.69	17.31	17.31	16.29	13.93	14.91	13.93	13.93
Soybean meal	.67	....	....	....	.59	....	....	....
Molasses	.93	....	.99	.88	.83	.85	.75	.75
Dehydrated alfalfa	.93	....	.99	....	.83	....	....	....
Ground limestone	.09	....	.10	.13	.08	.09	.11	.11
Urea	.09	....	.22	.23	.08	.19	.20	.20
Premix ¹	.19	....	.20	.16	.17	.17	.15	.15
Av. daily concentrate consumption, lbs.	18.59	19.81	19.81	17.69	16.51	17.06	15.14	15.14
Av. daily prairie hay consumption, lbs.	1.84	1.84	1.84	1.84	1.64	1.64	1.64	1.64
Total	20.43	20.65	20.65	19.43	18.15	18.70	16.78	16.78
Feed per lb. of gain, lbs.: Complete ration	7.56	7.53	7.53	7.39	6.55	6.32	6.44	6.44
Prairie hay	.75	.70	.70	.76	.65	.61	.70	.70
Total	8.31	8.23	8.23	8.15	7.20	6.93	7.14	7.14
Feed cost per cwt. gain ²	\$22.07	\$21.56	\$21.56	\$21.45	\$19.12	\$18.12	\$18.72	\$18.72
% protein of concentrate rations	13.3	13.2	13.2	13.2	....	....	....	....

Concentrate ration components, %:

Rolled sorghum grain	84.40	87.40	87.40	92.00	....	....	....	....
Soybean meal	3.60	....	....	....	....	....	....	....
Molasses	5.00	5.00	5.00	5.00	....	....	....	....
Dehydrated alfalfa	5.00	5.00	5.00	....	....	....	....	....
Ground limestone	0.50	.50	.50	.70	....	....	....	....
Urea	0.50	1.10	1.10	1.30	....	....	....	....
Premix ¹	1.00	1.00	1.00	1.00	....	....	....	....

Carcass data:

Chilled carcass wt., av.	580	596	596	560	474	480	449	449
Dressing %, av. ³	62	62	62	61	61	59	59	59

Carcass grade:

High choice	3	3	3	1	1	1	2	2
Av. choice	1	6	6	4	....	....	....	....
Low choice .....	....	1	1	2	2	2	....	....
High good	5	....	....	....	1	1	1	1
Av. good	1	....	....	....	1	1	1	1
Low good .....	....	....	....	....	....	....	....	....

Av. carcass grade score ⁴	18.6	19.2	19.2	18.5	17.25	17.25	16.50	16.50
Rib-eye area, 12th rib, sq. in.	10.95	10.95	10.95	10.83	9.39	9.79	9.25	9.25
Rib-eye area per 100 lbs. chilled carcass wt., sq. in.	1.89	1.84	1.84	1.93	1.98	2.04	2.08	2.08
Rib-eye area per 100 lbs. slaughter wt., sq. in.	1.16	1.14	1.14	1.18	1.20	1.21	1.23	1.23
Fat thickness, 12th rib, in.	.92	1.00	1.00	.95	.67	.80	.75	.75

1. Each pound of premix contained 75,000 IU, vitamin A, 352 mgs aureomycin, 50 mgs stilbestrol and enough suitable carrier to make the total equal 1% of the finished feed. A trace mineral mixture was included, supplied by Calcium Carbonate Co., Chicago, Ill.

2. Feed prices: Lots 3 and 6, \$2.83 per cwt.; Lots 4 and 7, \$2.78 per cwt.; Lots 5 and 8, \$2.81 per cwt.; prairie hay, \$0.80 per cwt.

3. Based on chilled carcass weight.

4. Carcass grade score: High choice, 21; av. choice, 20; low choice, 19; high good, 18; av. good, 17; low good, 16.