

An Evaluation of the Amount of Grain and Roughage to Feed at Different Stages of the Feeding Period, 1964-65 (Project 370)

H. B. Perry and P. W. Boren

The 30 steers used were good to choice Herefords purchased as calves near Sterling, Kansas, and allotted to 3 lots of 10 steers each.

Unlimited roughage was fed where grain was restricted. A ratio of 1 part roughage to 3 parts grain was fed on full feed. Protein supplement (described in footnote 1, table 8) was fed at 2 lb. per head daily to all lots.

Each lot was fed to an average weight per steer of 1000 lb.

All lots were fed the same for the first 100 days of the feeding period, 5 pounds of ground sorghum grain and 2 pounds of protein supplement per head daily with unlimited sorghum silage.

After the first 100 days experimental treatments were as follows:

Lot 14 - From the 100th day on test to the 200 th day, 10 pounds of grain per head daily, from 200 days until slaughter grain was full fed, total days on test 277.

Lot 15 - From the 100 day on test to slaughter grain was full fed, total days 269.

Lot 17 - From the 100th day on test to 200th day grain was full fed, from 200th day to slaughter grain was reduced to 10 lb. per head daily, total days 269.

#### Results and Discussion

During the second 100 days full feeding grain increased gains over those by steers with grain limited to 10 lbs. per each daily (Lot 14), but steers on limited grain were more efficient.

During the last period, from 200 days on feed to slaughter, steers in lot 14, full fed the last period, gained 0.26 lb. each daily more than those in the other two lots.

For the entire test feed required per pound of gain, daily gain and cost per pound of gain were about the same for all treatments.

The data collected on the carcasses showed only small differences due to treatment, however grades were slightly higher for lot 15 which was full fed grain (169 days) after the first 100 days on test and for lot 17 where grain was full fed the second 100 days on test and then reduced to 10 lb. per steer daily.

**Table 8**  
An evaluation of quantity of grain and roughage to feed at different stages of the feeding period, December 4, 1964, to September, 1965.

	Roughage was fed free choice where grain was restricted, a ratio of 1 part roughage to 3 parts grain was fed where grain was full fed. Protein supplement was fed at the same rate, of 2 lb. per head daily to all lots.		
Experimental treatment			
First 100 days	5 lb. grain	5 lb. grain	5 lb. grain
Second 100 days	10 lb. grain	full fed grain	full fed grain
From 200 days to 1000 lb. body wt.	full fed grain	full fed grain	10 lb. grain
Lot number	14	15	17
Number steers per lot	10	10	10
Initial weight per steer, lb.	444	443	444
Performance first 100 days			
Daily gain, lb.	1.82	1.85	1.90
Feed consumed per head daily			
Grain and protein, lb. supplement	7.0	7.0	7.0
Sorghum silage	19.53	19.53	19.53
Feed per lb. of gain			
Grain and protein supplement <sup>1</sup>	3.84	3.78	3.68
Sorghum silage (30% DM)	3.21	3.17	3.08
Performance second 100 days			
Daily gains, lb.	2.36	2.56	2.64
Feed consumed per head daily			
Grain and protein, lb. supplement <sup>1</sup>	11.63	15.88	16.48
Sorghum silage	20.40	16.60	17.24
Feed per lb. of gain			
Grain and protein supplement	4.93	6.20	6.24
Sorghum silage (30% DM)	2.59	1.95	1.96
Performance from 200 days to 1000 lb. body weight	77 days	69 days	69 days
Daily gains, lb.	1.88	1.62	1.62
Feed consumed per head daily			
Grain and protein, lb. supplement <sup>1</sup>	18.01	16.67	12.56
Sorghum silage first 24 days	16.42	15.22	22.68
Prairie hay rest of period, lb.	6.18	5.50	10.73
Feed per lb. of gain			
Grain and protein supplement, lb.	9.56	10.27	7.74
Sorghum silage (30% DM)	2.62	2.82	4.20
Prairie hay	3.28	3.39	6.61
Performance for entire period			
Final weight per steer, lb.	1007	996	1010
Av. daily gain, lb.	2.06	2.08	2.13
Feed consumed per steer daily			
Grain, lb.	9.87	10.90	10.06
Protein supplement <sup>1</sup> , lb.	2.03	2.02	2.00
Sorghum silage, lb.	16.07	14.97	5.86
Prairie hay, lb.	1.20	0.93	1.82
Lb. feed per lb. of gain			
Grain	4.76	5.23	4.73
Protein supplement <sup>1</sup>	0.98	0.97	0.95
Sorghum silage (30% DM)	2.34	2.16	0.83
Prairie hay	0.58	0.45	0.85
Total air dry basis	8.69	8.63	8.77
Feed cost per cwt. gain <sup>2</sup>	\$16.65	\$17.19	\$16.62
Carcass data			
Av. carcass wt.	599	614	603
Av. dressing %	59.5	61.6	59.7
Av. carcass grade <sup>3</sup>	18.4	19.1	18.9
Av. rib eye, sq. inches	10.75	11.18	10.99
Av. fat thickness	0.48	0.38	0.34
Av. yield grade <sup>4</sup>	3.0	3.2	2.7
Av. degree marbling <sup>5</sup>	7.0	6.6	6.9

1. The protein supplement (2 lb. per head daily), on a percentage basis consisted of SBOM 45; molasses 10; dehydrated alfalfa 15; urea 4; ground limestone 5; sorghum grain 20; premix 1. The premix supplied per head daily 70 mg. aureomycin, 10 mg. stilbestrol and 10000 I.U. of vitamin A.

2. Feed costs used are listed on inside back cover.

3. Av. carcass grades: av. choice 20; low choice 19; high good 18; av. good 17.

4. Av. yield grade; 1 indicates highest grade and 5, lowest grade.

5. Av. degree marbling, lower numbers designate more marbling.