

Table 47 (Continued)

Degree of marbling ⁸	8.0	7.6	7.9
Size of rib eye (visual est.) ⁹	3.7	3.3	4.1
Size of rib eye (sq. in.)	10.29	10.50	9.91
Degree of firmness ¹⁰	2.2	2.5	3.0

8. Based on modest amount 6, small amount 7, slight amount 8, traces 9, practically devoid 10.

9. Based on very large 1, large 2, moderately large 3, modestly large 4, slightly small 5.

10. Based on very firm 1, firm 2, moderately firm 3, modestly firm 4, slightly firm 5, soft 6.

Table 48

Results of Implanting 24 and 36 Mgs. of Stilbestrol and Synovex Pellets with Beef Steer Calves on Fattening Ration.

February 12 to July 12, 1957—150 days.

Treatment	Control	24 mgs. stilbestrol	36 mgs. stilbestrol	Synovex ¹
Number of calves per treatment	9	9	8	9
Av. initial wt., lbs.	618.9	614.4	611.3	610.0
Av. final wt., lbs.	910.5	995.0	957.5	945.6
Av. daily gain, lbs.	1.94	2.54	2.31	2.22
Carcass data:				
Av. hot carcass wt., lbs.	548.8	592.4	574.7	569.8
Av. hot carcass dressing %				
based on final feed lot wt.	60.3	59.5	60.0	60.3
Av. carcass grade: ²				
Before ribbing	12.6	11.8	11.5	12.7
After ribbing	13.1	11.6	11.8	13.0
Av. finish:				
Fat thickness ³	3.6	3.7	3.9	3.6
Fat distribution ⁴	2.0	2.6	2.5	2.8
Degree of marbling ⁵	7.0	8.3	7.9	6.9
Size of rib eye (visual est.) ⁶	3.8	3.7	3.9	3.4
Size of rib eye (sq. in.)	9.79	10.64	10.26	10.21
Degree of firmness ⁷	1.9	3.0	3.1	2.2

1. 1000 mgs. progesterone and 20 mgs. estradiol benzoate.

2. Based on top choice 15, av. choice 14, low choice 13, top good 12, av. good 11, and low good 10.

3. Based on very thick 1, thick 2, moderate 3, modest 4, slightly thin 5.

4. Based on very uniform 1, uniform 2, moderately uniform 3, modestly uniform 4, slightly uneven 5.

5. Based on modest amount 6, small amount 7, slight amount 8, traces 9, practically devoid 10.

6. Based on very large 1, large 2, moderately large 3, modestly large 4, slightly small 5.

Fundamental Studies of Sorghum Roughages and Grains. A Study of the Value of Pelleting Sorghum Grain (Project 222).

D. Richardson, E. F. Smith, B. A. Koch, F. W. Boren and R. F. Cox

A preliminary test indicated that the efficiency of utilization of sorghum grain by beef cattle may be increased by grinding the grain very fine and making it into pellets. Digestion, nitrogen balance, digestible energy and feedlot tests are being conducted. This report is on the wintering phase of the feedlot test.

Experimental Procedure

Forty Hereford steer calves from one herd were divided as equally as possible on the basis of weight and conformation into four lots of 10 animals each. Two additional steers became available about 10 days after the test started and they were added to lot 3. The daily ration con-

sisted of 1 pound soybean oil meal, 5 pounds grain, 2 pounds alfalfa hay, and all the sorghum silage they would clean up. Salt and a mineral mixture of two parts steamed bonemeal and 1 part salt were fed free-choice. Water was supplied by electrically heated automatic water fountains. The grain used was as follows: lot 1, rolled sorghum grain; lot 2, cracked corn; lot 3, finely ground and pelleted sorghum grain; lot 4, finely ground sorghum grain.

Results and Observations

Results of the wintering phase of this test are shown in Table 49. Rate of gain and feed efficiency were exceptionally good in all lots. The lower rate of gain in lot 4 was caused primarily by two animals which became lame and had to be treated. They have apparently recovered. These data do not indicate any real differences between corn and sorghum grain or method of preparation of sorghum grain in the wintering ration of beef steer calves. The fattening phase of this test is now in progress.

Table 49

Comparative Results with Cracked Corn, Rolled Sorghum Grain, Finely Ground Sorghum Grain and Finely Ground Pelleted Sorghum Grain in Beef Steer Calf Wintering Rations.

December 7, 1957, to March 17, 1958—100 days.

Lot number	1	2	3	4
Number calves per lot	10	10	12	10
Av. initial wt., lbs.	431	432	426.3	432
Av. final wt., lbs.	636	628	623.3	620
Av. daily gain per calf, lbs.	2.05	1.96	2.00	1.88
Av. daily ration, lbs.:				
Sorghum silage	19.2	17.6	17.7	17.8
Alfalfa hay	2.0	2.0	2.0	2.0
Soybean oil meal	1.0	1.0	1.0	1.0
Rolled sorghum grain	5.0	....	....	....
Corn .....	....	5.0	....	....
Pelleted sorghum grain .....	....	....	5.0	....
Finely ground sorghum grain ..	....	....	....	5.0
Lbs. feed per cwt. gain:				
Sorghum silage	938	897	870	945
Alfalfa hay	97.6	102	100	106.4
Soybean oil meal	48.8	51.0	50.0	53.2
Rolled sorghum grain	243.9	....	....	....
Corn .....	....	255.1	....	....
Pelleted sorghum grain .....	....	....	250	....
Finely ground sorghum grain ..	....	....	....	266
Feed cost per cwt. gain, \$ ¹	10.57	11.54	10.76	11.26

1. Based on ingredient prices given on inside of back cover.

Self-Feeding Molasses Mixed with Urea, Phosphoric Acid and Water with or without Ethyl Alcohol to Beef Heifers. I. Feedlot and Carcass Study (Project 536).

D. Richardson, Ed F. Smith, B. A. Koch and R. F. Cox

Phosphoric acid has been found to be an excellent source of phosphorus when used in beef cattle rations. Urea, a non-protein-nitrogen compound, has long been recognized as a satisfactory source of protein equivalent for ruminants. Recently, the idea has been advanced that small amounts of ethyl alcohol would be beneficial in ruminant rations. Because of the labor-saving aspect, the practice of self-feeding liquid supplements seems to appeal to many people. All of the above ingredients can be mixed easily and thoroughly with molasses. This test was conducted to study the value of self-feeding a mixture of molasses, urea, phosphoric acid