Table 2 (Continued)

% shrink to market	4.5	3.6	4.1
Av. dress. % based on final feedlot wt. (including 2% cooler shrink)	56.6	57.6	56.4
Av. dress. % based on market wt.	59.2	59.7	58.8
Av. carcass grade before ribbing[6]	11.2	11.2	11.1
Av. carcass grade after ribbing[6]	11.3	11.9	11.2
Av. fat thickness at 12th rib, vis. est.[7]	3.9	3.6	3.7
Av. uniformity of fat distribution[8]	4.1	3.8	3.8
Av. degree of marbling[9]	7.4	7.3	7.6
Av. size ribeye, vis. est.[10]	4.5	4.3	4.6
Av. size ribeye, sq. in.	10.2	9.8	9.8
Av. degree of firmness[11]	4.6	4.2	4.6
Av. initial cost per animal @ 24¢/lb.	105.96	105.96	105.84
Av. total feed cost	$ 77.24	83.02	69.48
Av. total cost animal and feed	$183.20	188.98	175.32
Av. carcass value (Ch 41¢ and G 38¢)	180.25	185.72	181.70

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

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

8. Based on uniform 2, moderate 3, modest 4, slightly uneven 5.

9. Based on slightly abundant 4, moderate 5, modest 6, small amount 7, slight amount 8.

10. Based on large 2, moderately large 3, modestly large 4, slightly small 5.

11. Based on firm 2, moderately firm 3, modestly firm 4, slightly firm 5.

Fundamental Studies of Sorghum Roughages and Grains. I. A Study of the Value of Feeding the Grain Sorghum Plant as Silage and as Dehydrated Pellets. II. A Study of the Value of Pelleting Sorghum Grain. Project 222.

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

Combine-type sorghum grain is widely grown in Kansas and normally only the grain is harvested. In many instances, moisture conditions are such at harvest time that grain cannot be stored without artificially drying. Sometimes there is danger of loss to immature grain because of an early freeze. One part of this test was to study the feasibility of harvesting the entire grain sorghum plant as silage or as dehydrated pellets. Previous tests have indicated greater utilization of finely ground pelleted sorghum grain than cracked sorghum grain. The second part of the test was further work in comparing the two methods of preparation. This report is on the wintering phase of the feedlot test.

Experimental Procedure

Forty Hereford steer calves from the same herd were divided as equally as possible on the basis of weight and conformation into four lots of 10 animals each. Grain sorghum from the same field, estimated to yield 45 bushels per acre, was used to make the grain sorghum silage and dehydrated grain sorghum pellets. It produced approximately 6 tons of silage or 2½ tons of dehydrated pellets per acre. Grain from another source was used for cracking and pelleting. The daily ration for all animals consisted of 4 pounds alfalfa hay and 0.5 pound soybean oil meal plus the following:

Lot 1. Average of 7.65 pounds dehydrated grain sorghum pellets.

Lot 2. Average of 20.55 pounds grain sorghum silage.

Lot 3. Average of 14.1 pounds Atlas sorghum silage and 4 pounds cracked sorghum grain.

Lot 4. Average of 12.65 pounds Atlas sorghum silage and 4 pounds finely ground pelleted sorghum grain.

An attempt was made to keep the dry matter intake the same in lots 1 and 2. Salt and a mineral mixture of 2 parts steamed bonemeal and

1 part salt were fed free choice. Water was supplied in automatic electrically-heated water fountains.

Results and Observations

Results of the wintering phase of this test are shown in Table 3. Rate of gain was the same in lots 1 and 2. The gains were economical in lot 2; however, the cost of dehydrating and pelleting considerably increased the cost of gain in lot 1. The silage and pellets were palatable and no digestive disturbances or other trouble were experienced during the test. Animals in lot 4, receiving the finely ground pelleted grain, gained slightly faster and utilized their feed more efficiently than those that received the cracked grain (lot 3). The difference was great enough to more than offset the additional cost of pelleting. The fattening phase of this test is now in progress. All the hay has been removed from lots 1 and 2 and grain increased in lots 3 and 4.

Table 3

Comparative results with (1) dehydrated grain sorghum pellets and grain sorghum silage, and (2) cracked sorghum grain and finely ground pelleted sorghum grain in beef steer wintering rations.

Wintering phase—December 2, 1958, to March 11, 1959—100 days.

Lot number	1	2	3	4
Number calves per lot	10	10	10	10
Av. initial wt., lbs.	415.5	416	418	424
Av. final wt., lbs.	550.5	552	568.5	586.5
Av. daily gain per calf, lbs.	1.35	1.36	1.51	1.63
Av. daily ration, lbs.:				
Alfalfa hay	4	4	4	4
Grain sorghum silage		20.55		
Atlas sorghum silage			14.1	12.65
Dehydrated grain sorghum pellets	7.65			
Cracked sorghum grain			4	
Pelleted sorghum grain				4
Soybean oil meal	.5	.5	.5	.5
Salt	.035	.018	.052	.016
Bonemeal-salt mixture	.085	.061	.061	.039
Feed per cwt. gain, lbs.:				
Alfalfa hay	296.3	294.1	264.9	245.3
Grain sorghum silage		1511		
Atlas sorghum silage			933.8	776.1
Dehydrated grain sorghum pellets	566.7			
Cracked sorghum grain			264.9	
Pelleted sorghum grain				245.3
Soybean oil meal	37	36.8	33.1	30.7
Salt	2.6	1.3	3.4	1.0
Bonemeal-salt mixture	6.3	4.5	4.0	2.4
Feed cost per cwt. gain[1]	$17.59	10.86	10.89	10.16

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

The Value of Implanting Beef Steer Calves on a Fattening Ration with Stilbestrol and Synovex Pellets. Project 222.

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

Stilbestrol and Synovex implants are used with beef cattle to stimulate increased gains. This test was planned to study level of stilbestrol implant and the effect of stilbestrol and Synovex implants on rate of gain and carcass quality. Animals within each lot in Project 222 were randomly allotted to the various treatments of this test. Treatments were control