Table 23 (Continued)

Fattening phase[1]—157 days.

Av. initial wt., lbs.	830.5	841
Av. final wt., lbs.	1078	1094
Av. daily gain per steer, lbs.	1.57	1.61
Av. daily ration, lbs.:		
Forage sorghum silage[2]	4.5	..
Dehydrated grain sorghum pellets	..	5.6
Alfalfa hay	3.2	..
Dehydrated alfalfa pellets	..	1.1
Soybean oil meal	1.0	1.0
Sorghum grain	15.9	9.1
Feed per cwt. gain, lbs.:		
Forage sorghum silage	287	..
Dehydrated grain sorghum pellets	..	345
Alfalfa hay	204	..
Dehydrated alfalfa pellets	..	69
Soybean oil meal	63	63
Sorghum grain	1000	564
Feed cost per cwt. gain	$22.26	20.67
% shrink	4.2	3.9
Dressing %, feedlot wt.	61.8	60.3
Dressing %, pay wt.	64.2	62.7
Av. hot carcass wt.	671.4	667.7
Av. chilled carcass wt.	662.9	660.2
Av. % cooler shrink	1.3	1.1
Av. finish:		
Thickness[3]	3.9	3.7
Distribution[4]	3.4	3.3
Av. degree of marbling[5]	5.1	6.0
Av. size of ribeye[6]	4.1	4.8
Av. degree of firmness[7]	2.7	3.4
Carcass grades:		
Av. prime	1	..
Top choice	1	1
Av. choice	3	3
Low choice	3	2
Top good	1	1
Av. good	..	1
Low good	..	1
Av. carcass value (prime 43.0¢) (choice 41.5¢) (good 39.0¢)	$275.55	268.63

1. One steer lost in each lot from urinary calculi.
2. Silage fed only first 42 days.
3. Based on 2, thick; 3, moderate; 4, modest.
4. Based on 2, uniform; 3, moderately uniform; 4, modestly uniform.
5. Based on 4, slightly abundant; 5, moderate; 6, modest; 7, small amount.
6. Based on 3, moderately large; 4, modestly large; 5, slightly small.
7. Based on 2, firm; 3, moderately firm; 4, modestly firm; 5, slightly firm.

Grain Sorghum Silage vs. Forage Sorghum Silage; Dehydrated Alfalfa vs. Vitamin A, and the Value of Aureomycin in Cattle Rations (Project 567).

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

Two types of sorghum silage were used in this test. They were (1) DeKalb forage type which produced approximately 100 bushels of grain and 20 tons of silage per acre; and (2) RS610 grain type which produced

approximately 75 bushels of grain and 10 tons of silage per acre. Forty Hereford heifer calves were divided into four lots of 10 each. Three lots received the grain sorghum silage and one the forage silage plus 2 pounds of grain. This was an attempt to keep the grain intake equal in all lots; however, since the forage sorghum produced so much grain, this lot may have received slightly more grain than the others. Dehydrated alfalfa as a source of vitamin A was compared with vitamin A and with vitamin A plus Aureomycin. The average daily ration for each lot is shown in Table 24.

Results and Discussion

The test had to be terminated at 77 days when the supply of grain sorghum silage was exhausted. Results are shown in Table 24.

There were no significant differences in rate of gain between animals receiving the forage- and grain-type silage. A combination of vitamin A and Aureomycin produced larger gains than dehydrated alfalfa or vitamin A; however, those receiving dehydrated alfalfa made larger gains than those receiving vitamin A without Aureomycin.

The higher feed costs for grain-type silage are due to a charge of $10 per ton compared with $6 for the forage type. These and previous results indicate that a high grain-yielding forage-type sorghum may be the most desirable for ensilage.

Table 24

Grain- vs. forage-type sorghum silage; dehydrated alfalfa vs. vitamin A, and the value of Aureomycin in cattle rations.

December 9, 1960, to February 24, 1961—77 days.

Lot number	3	4	5	6
Number heifers per lot	10	10	10	10
Av. initial wt., lbs.	518.5	518.5	518	519
Av. final wt., lbs.	656	648	635.5	656
Av. daily gain per animal, lbs.	1.79	1.68	1.53	1.78
Av. daily ration, lbs.:				
DeKalb forage sorghum silage	31.8	..	..	..
RS610 grain sorghum silage	..	31.1	31.4	34.6
Soybean oil meal	1.0	1.0	1.0	1.0
Dehydrated alfalfa pellets	.5	.5	..	..
Sorghum grain	2.0	..	..	..
Vitamin A, I.U.	..	..	10000.0	10000.0
Aureomycin, mg.	..	..	..	72
Feed per cwt. gain, lbs.:				
DeKalb forage sorghum silage	1782	..	..	..
RS610 grain sorghum silage	..	1849	2057	1943
Soybean oil meal	56	59	66	56
Dehydrated alfalfa pellets	28	30	..	..
Sorghum grain	112	..	..	..
Feed cost per cwt. gain (Does not include cost of vitamin A and Aureomycin)	$9.94	12.04	12.57	11.65

Rolled vs. Finely Ground Pelleted Sorghum Grain in Cattle Rations (Project 567).

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

In previous tests where grain intake was held at the same level, finely ground pelleted sorghum grain has produced larger and more efficient

gains than rolled sorghum grain. This test was conducted to study the value of the two methods of grain preparation when the rest of the ration was held at a constant level and the grain fed according to the amount the animals would consume.

Experimental Procedure

Twenty heavy steer calves were divided into two lots of 10 each. They were fed the same ration throughout the wintering and fattening phases. The only difference was the method of grain preparation. The rations and daily consumption are shown in Table 25.

Results and Discussion

Results are shown in Table 25. There were no significant differences in wintering or fattening gains or carcasses. Animals receiving the pelleted grain were more efficient; however, the increased cost of pelleting caused the cost of gain to be nearly the same. Increased feed efficiency for pelleted grain has been observed in previous feedlot and digestion studies; however, pelleting tends to decrease the daily intake of grain.

Table 25

Rolled vs. finely ground pelleted sorghum grain in steer rations.

Wintering phase, December 3, 1959, to April 21, 1960—140 days.

Lot number	3	4
Number steers per lot	10	10
Av. initial wt., lbs.	560	562
Av. final wt., lbs.	794.5	818
Av. daily gain per steer, lbs.	1.68	1.83
Av. daily ration, lbs.:		
Sorghum silage	29.5	28.8
Alfalfa hay	1.3	1.3
Soybean oil meal	1.0	1.0
Rolled sorghum grain	4.0	..
Pelleted sorghum grain	..	4.0
Feed per cwt. gain, lbs.:		
Sorghum silage	1763	1574
Alfalfa hay	75	68
Soybean oil meal	60	55
Rolled sorghum grain	239	..
Pelleted sorghum grain	..	219
Feed cost per cwt. gain	$12.18	11.36
Fattening phase—158 days.		
Av. initial wt., lbs.	794.5	818
Av. final wt., lbs.	1087.5	1099
Av. daily gain per steer, lbs.	1.86	1.77
Av. daily ration, lbs.:		
Sorghum silage[1]	5.6	5.5
Alfalfa hay	2.6	2.7
Soybean oil meal	1.0	1.0
Rolled sorghum grain	16.7	..
Pelleted sorghum grain	..	14.4
Feed per cwt. gain, lbs.:		
Sorghum silage	305	311
Alfalfa hay	143	151
Soybean oil meal	54	56
Rolled sorghum grain	899	..
Pelleted sorghum grain	..	807
Feed cost per cwt. gain	$19.73	19.47

1. Silage fed only first 72 days.

Table 25 (Continued)

Summary, Wintering and fattening—298 days.		
Av. total gain, lbs.	527.5	537.0
Av. daily gain	1.77	1.80
% shrink	3.7	4.3
Dressing %, feedlot wt.	61.6	61.3
Dressing %, pay wt.	64.0	64.1
Av. hot carcass wt.	678.6	681.9
Av. chilled carcass wt.	670.2	674.2
Av. % cooler shrink	1.2	1.1
Av. finish:		
Thickness[2]	3.8	3.8
Distribution[3]	3.3	3.4
Av. degree of marbling[4]	5.7	6.0
Av. size ribeye[5]	4.0	4.2
Av. degree firmness[6]	2.6	2.8
Carcass grades:		
Av. choice	3	3
Low choice	7	4
Top good	..	2
Av. good	..	1
Av. carcass value: (choice, 41.5¢) (good, 39.0¢)	$278.13	274.74

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

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

4. Based on 4, slightly abundant; 5, moderate; 6, modest; 7, small amount.

5. Based on visual est.: 3, moderately large; 4, modestly large; 5, slightly small.

6. Based on 1, very firm; 2, firm; 3, moderately firm; 4, modestly firm.