

the silage and pellets in both the wintering and fattening phase. Results indicate that one should not expect to produce cattle grading higher than good with this type ration.

Table 26

Dehydrated grain sorghum pellets vs. grain sorghum silage in steer rations.

Wintering phase, December 2, 1958, to March 12, 1959—100 days.

Lot number	1	2
Number steers per lot	10	10
Av. initial wt., lbs.	415.5	416.0
Av. final wt., lbs.	550.5	552.0
Av. daily gain per steer, lbs.	1.35	1.36
Av. daily ration, lbs.:		
Alfalfa hay	4	4
Dehydrated grain sorghum pellets	7.65	
Grain sorghum silage		20.5
Soybean oil meal .....	.5	.5
Salt .....	.04	.02
Bonemeal-salt mixture .....	.09	.06
Av. feed per cwt. gain, lbs.:		
Alfalfa hay	296.3	294.1
Dehydrated grain sorghum pellets	566.7	
Grain sorghum silage		1511.0
Soybean oil meal	37.0	36.8
Salt	2.6	1.3
Bonemeal-salt mixture	6.3	4.5
Feed cost per cwt. gain	\$17.59	\$10.86

Fattening phase, March 13 to June 4, 1959—84 days.

Av. initial wt., lbs.	550.5	552.0
Av. final wt., lbs.	719.0	716.5
Av. daily gain per steer, lbs.	2.0	1.96
Av. daily ration, lbs.:		
Dehydrated grain sorghum pellets	17.5	
Grain sorghum silage		37.7
Soybean oil meal	1.0	1.0
Dehydrated alfalfa pellets	1.0	1.0
Salt .....	.07	.07
Bonemeal-salt mixture .....	.07	.07
Feed per cwt. gain, lbs.:		
Dehydrated grain sorghum pellets	873.6	
Grain sorghum silage		1924.0
Soybean oil meal	49.9	51.1
Dehydrated alfalfa pellets	49.9	51.1
Salt	3.4	3.8
Bonemeal-salt mixture	3.4	3.8
Feed cost per cwt. gain	\$25.22	\$13.09

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

Progress Report

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

This is a progress report of another test to further evaluate methods of sorghum grain preparation. Twenty of the heaviest steer calves purchased for experimental work were divided into two lots of 10 animals each. The daily ration is shown in Table 27. The only difference in the ration is that lot 3 received rolled sorghum grain and lot 4 finely ground pelleted sorghum grain. The gains and feed efficiency up to this time are essentially the same. The feed cost per 100 pounds gain is exactly the same. After completing the wintering phase, these animals will receive a fattening ration.

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Table 27

Rolled sorghum grain vs. finely ground pelleted sorghum grain in wintering rations of steers.

December 3, 1959, to March 24, 1960—112 days.

Lot number	3	4
Number steers per lot	10	10
Av. initial wt., lbs.	560	562
Av. final wt., lbs.	762.5	768.5
Av. daily gain per animal, lbs.	1.81	1.84
Av. daily ration, lbs.:		
Atlas sorghum silage	28.5	27.5
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.:		
Atlas sorghum silage	1578	1494
Alfalfa hay	73	72
Soybean oil meal	55	54
Rolled sorghum grain	221	
Pelleted sorghum grain		217
Feed cost per cwt. gain	\$10.57	\$10.57

Adapting Roughages Varying in Quality and Curing Processes to the Nutrition of Beef Cattle, 1959-60. Project 370.

Pelleted Alfalfa Hay and Dehydrated Pelleted Green Forage-type Sorghum in the Winter Ration of Heifer Calves

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

This is the second year of an experiment designed to compare the feeding value of alfalfa fed as long hay or coarsely-ground hay pellets, and forage-type sorghum fed as silage or dehydrated green forage sorghum pellets.

The hay and forage sorghum used were similar to that used in 1958-59 and described in Circular 371, page 41.

Fifty head of choice-quality heifer calves from the Jeff Ranch, Fort Davis, Texas, were used in this experiment. They were allotted, 10 head per lot, on the basis of live weight, and fed a winter ration as follows:

- Lot 1. Five pounds alfalfa hay plus forage sorghum silage, free choice.
- Lot 2. Five pounds alfalfa hay pellets plus forage sorghum silage, free choice.
- Lot 3. Five pounds alfalfa hay plus dehydrated green forage sorghum pellets, free choice.
- Lot 4. Five pounds alfalfa hay pellets plus dehydrated green forage sorghum pellets, free choice.
- Lot 5. Five pounds dehydrated alfalfa pellets plus dehydrated green forage sorghum pellets, free choice.

Results and Observations

The results of this experiment are reported in Table 28. This table reveals the following:

1. Using lot 1, which received alfalfa hay and silage, as a control, the increase in average daily gain made by the heifers in lots 3, 4, and 5 was highly significant.
2. The percentage increase in average daily gain made by the heifers in lots 2, 3, 4, and 5 over lot 1 was 21, 32, 38, and 45, respectively.
3. Under the system of limiting alfalfa hay pellets to 5 pounds per head per day and feeding dehydrated pelleted green forage sorghum free choice, pelleted alfalfa hay affected the variability of gains between lots 24 percent, whereas the pelleted forage sorghum effect was 58 percent. Therefore, it was more advantageous to pellet the forage sorghum than the alfalfa hay under this feeding regime.

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