It required about 21 days for the control group of calves to regain their initial pay weight of 428 pounds. The tranquilized group did not regain their pay weight, 443 pounds, during the course of the experiment, which was 27 days.

Red blood count, packed cell volume, and body temperatures of the control group of calves remained higher for the entire experimental period.

Table 3

Transit shrink of stocker calves.

Car No.	No. head	Sex	Transit shrink, %
1	45	Steers	7
2	50	Steers	5
3	50	Mixed	9
4[1]	50	Heifers	6
	25T[2]	Heifers	5
	25C[3]	Heifers	7

1. Car 4 was the experimental group.
2. Calves injected with tranquilizer.
3. Calves injected with saline solution.

Adapting Roughages Varying in Quality and Curing Processes to the Nutrition of Beef Cattle, 1960-61 (Project 370).

Comparative Value of Four Varieties of Forage Sorghum Silage for Wintering Weaned Beef Calves. A Progress Report.

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

The production of sorghum silage in Kansas has, during the past 20 years, grown from an insignificant source of farm income to one of major proportions. The total value of sorghums produced for silage and forage is about $40 million. Each year silage accounts for about two thirds of this total, or about $26 million. As more acres are retired from production of price-support crops, sorghum acreage is expected to increase still more.

Presently, there are 30 to 50 different forage sorghum varieties from which a farmer must choose. These varieties of forage sorghum have similar to widely different agronomic characteristics.

It is the object of this test to obtain data to help farmers select the sorghum varieties best suited to their livestock enterprises.

Four varieties of forage sorghum, widely different in agronomic characteristics, were used in this pilot test. They were:

1. DeKalb FS-1a: High grain producer; dry stalk; nonsweet; 76-77 days to reach 50% bloom.
2. Lindsey 115-F: Low-to-medium grain producer; juicy stalk; semi-sweet; late maturing.
3. Early Hegari: High grain producer; juicy stalk; nonsweet; 75-77 days to reach 50% bloom.
4. Axtell: Standard variety; low-to-medium grain producer; juicy stalk; sweet; 74 days to reach 50% bloom.

These four varieties were ensiled in upright silos when the grain reached the medium to hard dough stage.

Forty 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 weight, and fed silage free choice plus 1.25 lbs. of soybean meal. Dicalcium phosphate and salt were fed as a source of calcium, phosphorus, and salt. This feeding regime was such that it allowed a full expression of the production potential of the silage.

Results and Observations

The results of this experiment are reported in Table 4. Early Hegari produced the most gain, followed by DeKalb, with Lindsey and Axtell producing the least gain. The two high grain-yielding varieties, Early Hegari and DeKalb, produced more gain, 0.20 and 0.11 pound per animal per day, respectively, than the two low to medium grain-yielding varieties, Lindsey and Axtell. The latter two produced the same gains for the winter period. Statistical analysis of the data showed the differences in gain to be nonsignificant.

Daily ration, feed required per cwt. gain, and feed cost per cwt. gain show differences among lots, but valid conclusions are difficult to make from only one year's results. It is apparent that greater numbers of cattle are needed to detect statistically significant differences if they exist.

Table 4

Comparative value of four varieties of forage sorghum silage for wintering weaned beef calves.

December 1, 1960, to March 27, 1961—116 days.

Lot number	13	14	15	16
Number heifers per lot	10	10	10	10
Silage variety fed	DeKalb FS1a	Lindsey 115F	Early Hegari	Axtell
Initial wt. per heifer, lbs.	464	454	462	465
Final wt. per heifer, lbs.	654	634	665	645
Av. gain per heifer, lbs.	190	180	203	180
Av. daily gain per heifer, lbs.	1.64	1.55	1.75	1.55
Av. daily ration, lbs.:				
Silage	37.7	38.2	39.6	33.3
Soybean meal	1.25	1.25	1.25	1.25
Lbs. feed per cwt. gain:				
Silage	2300	2463	2265	2143
Soybean meal	76	81	71	81
Total feed required per cwt. gain, lbs.	2376	2544	2336	2224
Feed cost per cwt. gain	$9.23	9.87	9.17	8.95

Adapting Roughages Varying in Quality and Curing Processes to the Nutrition of Beef Cattle, 1960-61 (Project 370).

Performance of Yearling Beef Heifers Fed Various Ratios of Sorghum Grain to Dehydrated Alfalfa in Pellet Form.

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

This is the first year of an experiment designed to investigate the value of a complete pelleted ration for fattening cattle. Since Kansas has an abundance of sorghum grain and alfalfa, the 1960 study was designed to study the performance of yearling heifers fed various ratios of sorghum grain to dehydrated alfalfa in pellet form. Dehydrated alfalfa served as a source of roughage and protein.

The feeds used in this study were grown locally and the pellets made by the University's feed technology technicians—¾ inch in diameter.

Fifty head of about 660-pound choice-quality Hereford heifers were used. They were allotted 10 head per lot on the basis of prior treatment and the lots randomly assigned to the various concentrate:roughage ratio pellets. The heifers were rapidly brought up to a full feed of pellets and, when on full feed, pellets were kept before them all the time. No other