

Table 23 (Continued)

Av. size of ribeye, sq. in. ^a	10.83	10.34	10.43	10.93	10.93
Av. fat thickness at 12th rib ^b	4.2	3.9	4.0	4.0	3.9
Av. fat thickness at 12th rib, in. ^c56	.59	.58	.66	.56
Av. degree of marbling ^d	7.7	7.3	7.1	7.6	7.8
Av. degree of firmness ^e	4.0	3.8	3.7	4.0	3.9

5. Planimeter reading of ribeye muscle.

6. Very thick, 1; thick, 2; moderately thick, 3; modestly thick, 4; slightly thin, 5; visual estimate.

7. Reciprocal Meat Conference Standards, 1952.

8. Modest, 6; small amount, 7; slight amount, 8; trace, 9; visual estimate.

9. Very firm, 1; firm, 2; moderately firm, 3; modestly firm, 4; slightly soft, 5; soft, 6; visual estimate.

Table 24

Effect of certain climatic factors on average daily gains of yearling heifers by periods.

Drylot fattening period—June 12, 1958, to November 30, 1958—140 days.

Period	1	2	3	4	5
Date	6/12-7/10	7/11-8/7	8/8-9/4	9/5-10/2	10/3-10/30
Av. maximum temperature ¹	88.2	88.4	85.8	78.9	77.2
Av. radiation ²	604.8	496.1	531.2	395.3	384.6
Av. wind movement ³ ..	172.1	123.6	118.1	141.6	128.2
Av. relative humidity ⁴	60.2	63.2	55.8	62.7	46.5
Av. daily gain:					
Lot 1. No shade	2.36	1.50	2.08	2.61	1.79
Lot 2. No shade	1.14	2.17	1.31	2.50	2.50
Lot 3. Shade	1.93	1.66	2.04	2.32	2.00
Lot 4. No shade, implant	2.96	1.70	1.85	2.57	2.07
Lot 5. Shade, implant	2.57	2.40	2.31	2.35	2.35

1. Reading made daily at 7 p.m.; thus maximum temperature will have occurred. Thermometer in standard thermometer shelter.

2. Reading in Langley's. Langley's x 3.69 = BTU's per square foot.

3. Wind movement is miles per hour past the station.

4. Reading from an autographic hygrograph exposed in thermometer shelter.

The Use of Antibiotics at Shipping Time To Suppress the Occurrence of Respiratory Complex in Cattle.

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

One of the major problems confronting cattlemen is control of the occurrence of respiratory diseases such as shipping fever, colds, nasal congestion, and pneumonia. These respiratory conditions are especially troublesome to cattle feeders who ship and receive cattle during the fall and winter months, when adverse weather conditions put added stress on cattle.

This study is to investigate the value of various antibiotics administered orally or by injection to weaning calves to control the occurrence of respiratory diseases during the first few weeks they are in drylot.

Experimental Procedure

The calves used in this experiment originated on the Jeff Ranch, Fort Davis, Texas. They were gathered early in the morning, weaned from the cows, loaded into trucks and hauled 54 miles to Alpine, Texas. Upon arrival at the yards, they were group weighed and randomly allotted into four lots, with about equal numbers of steers and heifers in each lot. Each lot was marked for identification and given its designated treatment by injection. On arrival in Manhattan, the calves were unloaded and trucked from the railroad yards to the experimental unit, at which time they were group weighed by treatments. Thereafter they were weighed each day until their initial weight was reached.

During the first two weeks after arrival, the calves were inspected daily for occurrence of respiratory involvements, and other symptoms of illness. They were fed 2 pounds of wheat bran per head daily, and alfalfa hay free choice.

Observations

Table 25 gives the results of this study. Some observations concerning the data presented are:

1. Although there was less percentage shrink by calves receiving penicillin-streptomycin and terramycin injections, the difference between the groups and the control group in average pounds of weight lost per head was small and probably not significant.

2. All groups required the same amount of time to recover the shrink lost.

3. There was no occurrence of respiratory illness suggestive of shipping fever in any lot.

Table 25

Use of tranquilizer and antibiotics to control shipping fever complex and transit shrink of weaning beef calves.

Treatment	Control	Streptomycin ³	Penicillin-Streptomycin ⁴	Terramycin ⁵
Number of calves	47	48	53	52
Av. initial wt. per head ¹	446	447	430	450
Av. final wt. per head ²	417	419	412	432
Av. lbs. shrink per head	29	28	18	18
% shrink	6.5	6.3	4.2	4.0
Day required to recover shrink..	7	7	6	6
No. of calves treated for illness	0	0	0	0

1. Weight at Alpine, Texas.

2. Weight at Manhattan, Kans.

3. Streptomycin sulfate suspension. Merck, Sharp & Dohme, West Point, Pa.

4. Procaine Penicillin G in Dihydrostreptomycin sulfate solution. Pro-K-Mycin. American Cyanamid, New York, N.Y.

5. Terramycin—Pfizer & Company, Terre Haute, Ind.

6. Weights made each day until initial weight was reached.

Fattening Heifer Calves on Dry Bluestem Pasture versus Fattening in Drylot. Project 252-2.

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

Considerable work has been done at this station to determine the performance of cattle being fattened on summer pasture compared with fattening in drylot. This experiment is to study the feasibility of fattening cattle on dry bluestem pasture versus fattening in drylot.

Experimental Procedure

Heifers used in this experiment were the light end of calves purchased from the Pumray Ranch, Logan, N.M., the fall of 1957. Twenty-one heifers were placed in two groups on the basis of live weight and grade. One lot of 10 heifers, averaging 346 pounds each, was placed on 18 acres