

Table 20

The Influence of Stilbestrol Implants on Steer Calves—Wintering, Grazing, Fattening.

Wintering phase—December 4, 1956, to May 11, 1957—158 days.

Lot number	1		12	
	Controls	Implants	Controls	Implants
Number steers per treatment	5	5	5	5
Av. initial wt. per steer, lbs.	451	438	447	443
Av. final wt. per steer, lbs.	663	670	583	597
Av. total gain per steer, lbs.	212	232	136	154
Av. daily gain per steer, lbs.	1.34	1.47	.86	.97

Grazing phase—May 11 to July 27, 1957—77 days.

Av. initial wt. per steer, lbs.	663	670	583	597
Av. final wt. per steer, lbs.	746	792	727	722
Av. total gain per steer, lbs.	83	122	144	125
Av. daily gain per steer, lbs.	1.08	1.58	1.87	1.62

Fattening phase—July 27 to December 2, 1957—128 days.

Av. initial wt. per steer, lbs.	746	792	727	722
Av. final wt. per steer, lbs.	1057	1097	1059	1047
Av. total gain per steer, lbs.	311	305	330	325
Av. daily gain per steer, lbs.	2.43	2.38	2.59	2.54

Complete trial—December 4, 1956, to December 2, 1957—363 days.

Av. initial wt. per steer, lbs.	451	438	447	443
Av. final wt. per steer, lbs.	1057	1097	1059	1047
Av. total gain per steer, lbs.	606	659	612	604
Av. daily gain per steer, lbs.	1.67	1.82	1.69	1.66

Experiment 3 (The experimental procedure used is described under Project 253-3-5 of this circular):

The purpose of this test was to determine the value of stilbestrol implants for yearling steers grazed on bluestem pasture. Work completed under similar circumstances the previous year indicates that implanting with 24 or 36 mgs. will increase rate of gain. However, there were several treated animals, especially at the higher level, that exhibited undesirable side effects. This year 12 and 24 mgs. were used to see if rate of gain could be increased without the appearance of undesirable side effects. These animals were scored on feeder grade by a panel of judges at the beginning and conclusion of the test; grades were similar for controls and the two treated groups.

In general, it appears that 24 mgs. is the most desirable level to use under the conditions described.

Table 21

Effect of Stilbestrol Implants on Steers Pastured on Bluestem Pasture. April 27 to October 3, 1957—159 days.

Pasture number	Pasture treatment	Number of steers	Av. daily gain	Av. total gain	Treatment
1	Normally stocked	9	1.46	233	Control
1	Normally stocked	5	1.55	247	12 mgs.
1	Normally stocked	5	1.63	260	24 mgs.
2	Overstocked	13	1.44	230	Controls
2	Overstocked	6	1.38	221	12 mgs.
2	Overstocked	6	1.62	258	24 mgs.
3	Understocked	7	1.47	235	Controls
3	Understocked	3	1.52	242	12 mgs.
3	Understocked	3	1.69	270	24 mgs.
4	Deferred and rotated	29	1.28	205	Controls
4	Deferred and rotated	14	1.37	219	12 mgs.
4	Deferred and rotated	14	1.40	224	24 mgs.

(28)

Table 21 (Continued)

9	Early spring burned	6	1.59	253	Controls
9	Early spring burned	4	1.72	274	12 mgs.
9	Early spring burned	4	1.63	260	24 mgs.
10	Mid-spring burned	6	1.48	236	Control
10	Mid-spring burned	4	1.60	255	12 mgs.
10	Mid-spring burned	4	1.79	286	24 mgs.
11	Late spring burned	6	1.60	255	Controls
11	Late spring burned	4	1.80	287	12 mgs.
11	Late spring burned	4	1.90	303	24 mgs.
Total		76	1.41	225	Controls
		40	1.51	241	12 mgs.
		40	1.60	255	24 mgs.

Self-Feeding Urea-Molasses and the Feeding of Aureomycin to Steer Calves Wintered on Bluestem Pasture (Project 253-1).

Trial I, 1956-57

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

The wintering phase of this trial has been reported previously in Circular 349.

A self-fed urea-molasses mixture is being compared to molasses self-fed plus soybean oil meal in an effort to determine if a urea-molasses mixture self-fed on dry grass will serve as an adequate source of protein and energy.

Another phase of the test is to determine if aureomycin will improve the performance of calves wintered on pasture without shelter.

Experimental Procedure

The Hereford steer calves used in this study originated in the vicinity of Santa Rosa and Melrose, New Mexico. They were allotted to their treatments on the basis of weight. The calves in lots 12 and 12A were wintered together in a 190-acre bluestem pasture and separated each morning to be fed. The calves in lot 7 were in a 60-acre pasture during the winter, as were those in lot 15.

Lot 12 should be compared with 12A, which received aureomycin in the form of Aurofac 2A. The Aurofac 2A was mixed with the soybean meal so as to furnish 45 mgs. of aureomycin per head daily.

Lot 7 should be compared with lot 15. The molasses in lots 7 and 15 was self-fed with no attempt to regulate consumption. The urea-molasses mixture fed to lot 15 contained 77 percent molasses, 3 percent phosphoric acid, and a 20 percent urea solution which was one half urea and one half water. The molasses fed to lot 7 contained 3 percent phosphoric acid.

At the close of the wintering period all of the lots were placed in a 190-acre bluestem pasture and grazed together with no supplemental feed until they were weighed off test July 27, 1957.

Observations

Feeding aureomycin during the winter to lot 12A increased the average daily gain per steer by .12 of a pound during the winter and .16 of a pound during the summer as compared to lot 12. Other trials will be necessary to verify these results.

Molasses fed to lot 7 during the winter was more palatable than the urea-molasses fed to lot 15. The soybean meal and extra molasses consumed by lot 7 increased the daily gain per steer of that lot by .8 of a pound during the winter period, and .19 of a pound for the winter and summer period combined over lot 15 self-fed the urea-molasses mixture.

The protein or protein equivalent consumed in the supplemental feed by the two lots was about the same for each lot. Apparently some addi-

(29)

tional source of protein other than that found in dry bluestem pasture and urea is desirable for calves.

Table 22

Self-Feeding Urea-Molasses and the Feeding of Aureomycin to Steer Calves Wintered on Bluestem Pasture. Compare Lot 12 with 12A and Lot 7 with 15.

Phase 1—Wintering—December 11, 1956, to March 30, 1957—109 days.

Treatment	No aureo- mycin	Aureo- mycin	Molasses and soy- bean meal	Urea- molasses
Lot number	12	12A	7	15
Number steers per lot	10	10	10	10
Av. initial wt. per steer, lbs.	433	432	435	435
Av. final wt. per steer	514	526	534	447
Av. gain per steer, lbs.	81	94	99	12
Av. daily gain per steer, lbs.74	.86	.91	.11
Av. daily ration per steer, lbs.:				
Soybean meal	1.0	1.0	1.3	
Ground sorghum grain	4.6	4.6		
Aureomycin, mgs.		45 mgs.		
Molasses, self-fed			4.0	
10% urea-molasses, self-fed				2.6
Dry bluestem pasture				
Salt	Free choice	Free choice	Free choice	Free choice
Av. feed cost per steer,* \$	23.21	24.03	25.89	18.37

Phase 2—Grazing—March 30 to July 27, 1957—119 days.

Av. gain per steer, lbs.	211	230	205	247
Av. daily gain per steer, lbs.	1.77	1.93	1.72	2.08
Av. final wt. per steer, lbs.	725	756	739	694
Av. feed cost per steer,* \$	16.00	16.00	16.00	16.00

Summary of Phases 1 and 2—December 11, 1956, to July 27, 1957—228 days.

Av. gain per steer, lbs.	292	324	304	259
Av. daily gain per steer, lbs.	1.28	1.42	1.33	1.14
Av. feed cost per 100 lbs. gain, \$..	13.42	12.35	13.78	13.27
Av. feed cost per steer,* \$	39.21	40.03	41.89	34.37

* Winter rations were continued until April 20, 1957, and cost is included through this date. Feed prices for 1956-57 are inside back cover; \$1.00 per steer was charged for salt.

A Comparison of the Amount and Kind of Protein Concentrate for Yearling Steers on Bluestem Pasture, 1957 (Project 253-1).

E. F. Smith, B. A. Koch, F. W. Boren and G. L. Walker

In Circular 349 from this station, it has been reported in a three-year study that 2 pounds of soybean pellets fed per steer daily increased the gain .39 pound per head daily on yearling steers on bluestem pasture in late summer (August, September, and October). Most of this gain increase occurred in September and October. This report is concerned primarily with finding out if the level of supplemental feeding can be profitably lowered and if the kind of protein concentrate has any effect on performance.

Experimental Procedure

Twenty-four head of good to choice quality Hereford yearling steers were used in this test. They had been grazed together on bluestem pasture previous to the test. They were divided into four lots of six steers each in a manner to equalize any differences due to previous winter treatment. The steers had been wintered on grass the previous winter and used in other experimental tests. For this test, they were grazed on bluestem

pasture from August 5, 1957, to October 30, 1957, and received the following protein concentrates in pounds per head daily.

- Pasture 1—1.0 pound soybean meal, 44 percent crude protein.
 - Pasture 2—2.0 pounds soybean meal, 44 percent crude protein.
 - Pasture 3—1.3 pounds linseed meal, 34 percent crude protein.
 - Pasture 4—2.6 pounds linseed meal, 34 percent crude protein.
- Each pasture covered 60 acres with a good growth of grass.

Observations

By increasing the level of concentrate feeding, the gain was increased in both soybean meal and linseed meal groups. The gain increase occurred in October, with little benefit during August and September. Based on this and previous studies, it appears that in most years no supplemental feed may be necessary in August; approximately 1 pound of protein concentrate would suffice in September, and 2 pounds per head daily in October.

The differences in gain between the animals fed linseed meal and soybean meal were minor.

Table 23

A Comparison of the Amount and Kind of Protein Concentrate for Yearling Steers on Bluestem Pasture in Late Summer.

August 5 to October 30, 1957—86 days.

Pasture number	1	2	3	4
Number steers per pasture	6	6	6	6
Av. initial wt. per steer, lbs.	731	725	731	740
Av. final wt. per steer, lbs.	863	894	867	896
Av. gain per steer, lbs.	132	169	136	156
Av. daily gain per steer, lbs.	1.53	1.97	1.58	1.81
Av. daily ration per steer, lbs.:				
Soybean meal	1.0	2.0		
Linseed oil meal			1.3	2.6
Av. gain per steer by periods:				
August 5 to September 3	50.0	51.0	62.0	69.0
September 3 to October 5	78.0	72.0	53.0	53.0
October 5 to October 30	4.0	46.0	21.0	34.0
Av. total gain	132	169	136	156

A Comparison of Alfalfa and Alfalfa Plus Grain for Wintering Heifer Calves on Bluestem Pasture, 1956-57 (Project 253-2).

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

This is the second trial of this comparison. The first one was reported in Circular 349 from this station. The objective is to obtain information on the optimum level of alfalfa hay for heifers being wintered on bluestem pasture.

Experimental Procedure

Twenty-two head of good quality Hereford heifer calves purchased from the Harris Ranch at Melrose, New Mexico, were used in the test. They were divided on the basis of weight into two lots of 11 heifers each and wintered on bluestem pasture with the following treatments:

Pasture 8—Fed 4 pounds of alfalfa hay and 2.5 pounds of corn per head daily.

Pasture 13—Fed 8 pounds of alfalfa hay per head daily.

The 2.5 pounds of corn fed to pasture 8 furnished approximately the same amount of total digestible nutrients as the additional 4 pounds of alfalfa hay fed to pasture 13.

Plenty of grass was available in both pastures. The heifers had free access to salt.

Observations

The 2.5 pounds of corn and 4 pounds of alfalfa hay fed per heifer daily in pasture 8 produced .41 pound more gain per heifer daily than the 8