

Table 15 (Continued)

	Carcass data				
	9.01	9.65	9.70	9.83	9.51
Av. area ribeye, sq. in. . . . .					
Av. fat thickness at 12th rib, in. . . . .	0.88	0.83	0.90	0.83	0.93
Av. carcass grade: . . . . .	18.4	17.8	19.2	18.5	18.4
Choice + = 21 . . . . .	1		2		
Choice = 20 . . . . .		1	2	2	2
Choice - = 19 . . . . .	2	1	2	4	1
Good + = 18 . . . . .	6	4	4	1	6
Good = 17 . . . . .	1		3	3	1
Good - = 16 . . . . .		1			

1. Each lot supplemented with 10,000 I.U. vitamin A and 30 gms. calcium carbonate per head daily. Salt fed free choice; none of these included in feed cost.

2. Feed costs are on page 72.

3. Initial wt. x \$24 per cwt.

4. Feed cost per cwt. gain x total gain.

5. Carcass wt. x carcass grade price: Choice, \$43.25; good, \$40.50.

#### Effects of Field-conditioned Alfalfa Hay on the Winter Performance of Weaned Heifer Calves, 1962-63 (Project 370).

F. W. Boren, E. F. Smith, D. Richardson, G. E. Fairbanks

This feeding trial was to determine the effects of various field-conditioned alfalfa hays on the winter performance of heifer calves.

Second-cutting alfalfa was field-conditioned or processed as follows:

1. Control—mowed, raked, baled.
2. Crushed—mowed, crushed with one smooth steel roll and a spiral-grooved rubber roll, raked and baled.

Table 16

#### Winter performance of weaned heifer calves fed alfalfa hay field-cured by various methods.

December 12, 1962, to March 8, 1963—93-day wintering period.

Lot no. . . . .	13	14	15	16	17
No. heifers per lot . . . . .	10	10	10	10	10
Hay-conditioning method	Control	Crushed	Rotary cut	Swathed, crimped	Wafered
Initial wt. per heifer, lbs. . . . .	438	441	442	443	442
Av. gain per heifer, lbs. . . . .	102	110	98	121	119
Final wt. per heifer, lbs. . . . .	540	551	540	564	561
Av. daily gain per heifer, lbs. . . . .	1.10	1.18	1.05	1.30	1.28
Av. daily ration, lbs.:					
Alfalfa hay . . . . .	11.8	13.1	11.3	11.9	13.0
Ground sorghum grain, lbs. . . . .	3.5	3.5	3.5	3.5	3.5
Lbs. feed per cwt. gain:					
Alfalfa hay . . . . .	1072.7	1110.2	1076.2	915.4	1015.6
Ground sorghum grain, lbs. . . . .	318.2	296.6	333.3	269.2	273.4
Total lbs. feed required per cwt. gain . . . . .	1390.9	1406.8	1409.5	1184.6	1289.0
Feed cost per cwt. gain <sup>1</sup> . . . . .	\$16.46	\$16.44	\$16.76	\$14.00	\$15.08

1. Feed costs on page 72.

3. Rotary cut—a 12-foot, trail-behind, twin-rotor rotary mower that cut, lacerated, and windrowed the hay in one operation, baled.

4. Swathed, crimped—a 12-foot, self-propelled windrower with a crusher-crimper attachment, baled.

5. Wafered—Alfalfa cut with a flail-type cutter, field dried to about 15% moisture in windrows, wafered with a Massey-Ferguson wafering machine.

Fifty head of choice Hereford heifer calves were used in this study, allotted 10 head per lot, and fed alfalfa free choice, plus 3.5 pounds of rolled sorghum grain per head per day. Salt was available at all times.

#### Observations

Data are given in Table 16. There was no apparent reason for the difference in average daily gain of heifers in the various lots. Calves fed wafers rapidly adjusted to that type of hay-package and were apparently satisfied with wafers as a source of roughage.

#### Vitamin A and Dehydrated Alfalfa Fed Individually and in Combination with and without Aureomycin in a Steer Fattening Ration (Project 567).

D. Richardson, E. F. Smith, F. W. Boren and Keith Kingsley

Hereford yearling steers in this test were used in a previous bluestem pasture grazing test. After the grazing test was completed, they were assigned to six lots of 10 animals each on the basis of weight and uniformity to compare the value of dehydrated alfalfa as a source of vitamin A with preformed vitamin A, both individually and in combination with and without Aureomycin. The supplements supplied the same amount of protein, calcium and phosphorus in each lot. Vitamin A value of carotene was figured on the dehydrated alfalfa at 400 I.U. per milligram of carotene; 10,000 I.U. of vitamin A per head was fed daily for the first 84 days and 15,000 I.U. units for the remainder of the test; 70 milligrams of Aureomycin was fed per head daily. After the steers were on feed, silage was limited to 20 pounds per head daily; however, grain was fed ad lib.

#### Results and Observations

The results of this test are presented in Table 17.

- (1) Dehydrated alfalfa produced greater gains than preformed vitamin A (compare Lots 7 and 9).
- (2) A combination of dehydrated alfalfa and vitamin A was no better than either alone (compare Lot 11 with 7 and 9).
- (3) Aureomycin apparently was beneficial with a combination of dehydrated alfalfa and vitamin A but not when used with each individually (compare Lot 12 with 8 and 10). We have no satisfactory explanation for these results.
- (4) Liver storage of vitamin A was greatest with animals fed preformed vitamin A; however, there was no relationship between liver storage of vitamin A and gains of individual animals.
- (5) No deficiency symptoms or differences in appearance attributed to vitamin A were observed.
- (6) Feed cost and efficiency favored lots making the greatest rate of gain.
- (7) There were no significant differences in dressing percentage, carcass grade or carcass characteristics.

The following is a 114-day progress report on a repeat of this test, except 15,000 I.U. of vitamin A per head daily has been used throughout the test.

Lot no. . . . .	7	8	9	10	11	12
Av. starting wt., lbs. . . . .	862	860	860	856	862	857
Av. daily gain, lbs. . . . .	2.86	2.96	3.00	3.02	2.88	3.19