Table 15
Effect of sex of lamb on rate of gain.

Sex	Ewe	Wether	Ram
No. of lambs	36	16	21
Av. age at slaughter	138	127	117
Av. wt. at slaughter	96.3	97.3	99.3
Av. wt. per day of age at slaughter	.70	.76	.85

Table 16
Uncorrected data for 1964-65 lambs.[1]

Ram	No. single lambs	Av. 65-day weaning wt., lbs. (singles)	No. twin lambs	Av. 65-day weaning wt., lbs. (twins)
Ahlschwede 12	6	59.2	2	48.0
Cox 1098	7	48.4	2	34.0
Eberle 54	3	51.3	2	31.5
Eberle 530	7	50.9	0	....
Gilmore 6323	6	53.0	6	35.3
KSU 6312	5	52.8	2	31.5
KSU 6328	5	57.2	....	....
Newell 214	5	51.4	2	37.0
McCosh 339	3	54.6	2	37.5
McCosh 378	7	59.3	2	28.0

1. Not corrected for sex or birth weight.

Comparison of Slaughter and Carcass Characteristics of Ram, Wether and Ewe Lambs.

D. H. Kropf, D. L. Mackintosh, L. C. Hinnergardt, R. C. Fletcher, C. S. Menzies, Dorothy L. Harrison, and Lois Anderson

Preliminary Report

Lambs of known history were individually slaughtered as they attained 95 pounds live weight. Quality and quantity factors were evaluated and measurements taken after carcasses were chilled 48 hours. Carcasses were broken into wholesale cuts and weights were obtained. Loin weights are with kidney knob and hanging tenderloin removed. The leg and loin were further trimmed of external fat to ⅜ inch thick and trimmed weights obtained.

No sex differences (Table 17) were noted with regard to caul or stomach fat, feathering, fat streaking in secondary flank muscles, color of flesh, shoulder weight, trimmed loin weight, leg and trimmed leg weight, total weight or percentage of trimmed leg and loin or in average loin-eye muscle area.

Dressing % was highest for ewe lambs, lowest for rams, and intermediate for wethers. Conformation scores were highest for ewe lamb carcasses and lowest for rams, perhaps due partly or wholly to more external fat on ewes and less on ram carcasses. Ewe lamb carcasses had more overflow fat, more kidney and pelvic fat, higher rib-eye marbling scores, and higher carcass grades. Rams had the least overflow fat, less kidney and pelvic fat, less rib-eye marbling and lowest average

Table 17
Comparison of slaughter and carcass characteristics of ram, wether, and ewe lambs.

	Group averages[1]		
	Ram	Wether	Ewe
No. of animals	24	21	41
Slaughter wt., lbs.	87.5	87.5	86.6
Cold dressed wt., lbs.	46.0	48.5	49.5
Cold dressing %	52.6	55.4	57.2
Pelt wt., lbs.	10.1	9.1	8.9
Caul fat wt., lbs.	1.1	1.2	1.7
Conformation score[2]	7.5	8.1	8.6
Quantity external fat score[3]	8.1	8.3	9.1
Feathering score[4]	5.8	5.6	5.9
Overflow fat score[5]	4.4	4.6	5.2
Fat streaking flank steak[5]	4.0	4.5	4.9
Fat streaking, other flank muscles[5]	3.9	4.0	4.3
Kidney and pelvic fat score[5]	4.2	5.0	6.0
Rib-eye marbling score[5]	4.5	5.4	5.9
Rib-eye firmness score[5]	10.0	10.4	10.4
Fat firmness score[5]	8.2	9.6	9.6
Rib-eye color score[6]	10.8	10.8	10.7
Color reading, L. dorsi[7]	13.1	12.8	12.7
Color reading, flank steak[7]	19.3	18.9	18.9
U.S.D.A. grade	8.4	9.2	9.7
Fat thickness, in.	0.16	0.22	0.26
Breast wt., lbs.	8.1	8.4	8.6
Shoulder wt., lbs.	12.8	12.9	12.8
Rack wt., lbs.	4.6	4.9	5.1
Loin wt., lbs.	4.9	5.2	5.4
Trimmed loin wt., lbs.	4.8	4.9	5.0
Leg wt., lbs.	15.1	15.6	15.3
Trimmed leg wt., lbs.	14.8	15.0	14.7
Trimmed leg + loin wt., lbs.	19.5	20.0	19.7
% trimmed leg + loin	42.4	41.2	39.8
Kidney knob wt., lbs.	0.7	1.0	1.5
Loin-eye muscle area, sq. in.	2.32	2.22	2.17
Fat, hotel rack, gms.	619.7	718.1	854.7
Bone, hotel rack, gms.	375.2	366.8	339.8

1. Lot averages underlined with same line are not significantly different at 5% level of probability.
2. Conformation score: Low prime = 9, choice + = 8, av. choice = 7.
3. Quantity external fat: Moderately thick = 9, slightly thick = 8.
4. Quality score: Modest = 6, small = 5, slight = 4.
5. Firmness score: Firm = 10, moderately firm = 9, slightly firm = 8.
6. Color score: Light pink = 11, slightly dark pink = 10.
7. Color read on photovolt color difference meter: Darker colors have lower numbers.

carcass grade, while wether carcasses were intermediate. Ram carcasses yielded fewer pounds of breast, rack or loin, and less kidney and pelvic fat. Hotel racks were dissected into lean, fat and bone to study sex effect on carcass composition. Less fat, more muscle and more bone were found in the rack from ram carcasses, while ewe carcasses had more fat, less muscle and less bone in the rack.

No large differences were found in taste panel evaluations of flavor, juiciness or tenderness of lamb loin roasts (Table 18). Roasts from rams showed a higher volatile cooking loss, a lower drip loss and a lower total cooking loss. The greater drip loss of ewe loin roasts probably is due to their greater fatness. A higher shear value was noted for cooked samples from ram loins than ewe loins, indicating less tenderness.

Table 18

Cooking time, cooking losses and taste panel evaluations of loin roasts from ram, wether, and ewe lambs.

	Ram	Wether	Ewe
Mean cooking time, min. per lb.	39.0	37.5	38.0
Volatile cooking loss, %	8.7	8.1	8.0
Drip cooking loss, %	2.6	4.0	4.7
Total cooking loss, %	11.6	12.3	12.8
Flavor intensity score	4.7	4.6	4.6
Flavor desirability score	5.5	5.6	5.5
Juiciness score	6.0	6.1	6.1
Press fluid, mls. per 25 gms.	8.0	8.1	8.2
Shear value, ½-inch core, lbs.	8.2	7.2	6.9
Final tenderness score	5.3	5.5	5.5

Cattle

Dicalcium Phosphate and Vitamin A for Calves on Winter Bluestem Pasture, 1963-1964 (Project 253-2).

E. F. Smith, D. Richardson, F. W. Boren, and C. V. DeGeer

The 42 heifer calves, 10 or 11 per treatment, used in this experiment were good to choice Herefords from near Fort Davis, Texas, assigned on a random-weight basis to treatments. They were pastured together in a 190-acre bluestem pasture. During winter, so the three groups could get their experimental rations (Table 19), they were penned and fed three times weekly. Dicalcium phosphate (0.1 pound per heifer daily) and vitamin A (10,000 I.U. daily), when fed, were mixed with soybean meal. The experimental rations were discontinued April 3 and only salt was supplied during summer grazing.

The heifers were bred July 1 to October 1. From July 1 to August 15 they were penned each night and those in heat were artificially bred, using Hereford semen; from August 15 to October 1 a Hereford bull was with the heifers.

Results (Table 19) indicate no apparent advantage to feeding dicalcium phosphate, vitamin A or a combination of the two to heifer calves during winter grazing on bluestem pasture.

Table 19

Dicalcium phosphate and vitamin A for calves on winter bluestem pasture, December 6, 1963, to November 11, 1964—341 days.

Lot no.	7	8	9	10
Treatment	Control	Dicalcium phosphate	Vitamin A	Dicalcium phosphate and vitamin A
No. of heifers	11	10	11	10
Initial wt. per heifer, lbs.	437	437	428	437
Winter grazing period—December 6, 1963, to April 3, 1964—120 days.				
Daily gain per heifer, lbs.	0.36	0.15	0.17	0.15
Daily ration per heifer, lbs.:				
Soybean oil meal	1.0	1.0	1.0	1.0
Ground sorghum grain	1.0	1.0	1.0	1.0
Dicalcium phosphate		0.1		0.1
Vitamin A, 10,000 I.U.			Yes	Yes
Bluestem pasture	Free choice			
Salt	Free choice			
Summer grazing—April 3, 1964, to November 11, 1964—221 days.				
Initial wt. per heifer, lbs.	480	446	448	455
Daily gain, lbs.	1.21	1.34	1.29	1.33
Summary—December 6, 1963, to November 11, 1964—341 days.				
Final weight, lbs.	747	742	732	750
Gain per heifer, lbs.	310	305	304	313
Daily gain per heifer, lbs.	0.91	0.89	0.89	0.92
No. of heifers pregnant	11	9	11	8