

Table 35
Pelleted feed consumption and lamb production of lambs from four breeds of rams on three types of ewes.

January 31, 1959, to March 31, 1959—59 days.

	No. of lambs	Daily pellet consumption in creep per lamb	Av. daily gain in pounds per lamb	Gain per lb. of pelleted creep feed consumed
Sire groups:				
Hampshire	21	2.44	.788	.32
Suffolk	23	3.10	.746	.24
Southdown	19	1.81	.654	.36
Shropshire	31	2.43	.609	.25
Ewe groups:				
Finewools	32		.657	
N.W. whiteface	23		.700	
N.W. blackface	34		.682	

Table 36

Body weights and wool production of ewes of different types, 1957-58.

	Grease wool production	Body wts. following lambing, per ewe
Ewe groups:		
Finewools	8.81	145
N.W. whiteface	10.81	171.5
N.W. blackface	8.26	173.5

Lamb Feeding Experiments, 1958-59. Studies Carried on by the Department of Animal Husbandry and the Garden City Branch Experiment Station. Project 111-GC.

Carl Menzies and A. B. Erhart

Six hundred straight-bred Rambouillet wether lambs purchased from near Rocksprings, Texas, were used in these tests. Average weight on September 23 at the loading point was 69.5 pounds. About 16 hours later they weighed 65.3 pounds off the trucks at Garden City. Delivered price was \$22.30 per cwt. They were grazed on volunteer wheat until October 25. Average weight at that time was 76.7 pounds.

General Procedure

October 27, lambs were weighed, lotted, and started on test. Lambs were faced and tagged. Seventy-five lambs were shorn and all lambs, except those in lot 9, were drenched with 6 cc. of Trivermol drench. Half the lambs in each lot were implanted with 3 mgs. stilbestrol at the start of the test. Final weights were taken February 12 after 108 days of feeding. Lambs not shorn in October were shorn February 13.

Standard feedlot ration consisted of whole grain sorghum, sorghum silage, alfalfa hay, and cottonseed meal. Lot 7 served as the feedlot control. Lot 9 was not drenched and was fed 30 mgs. hygromycin per lamb per day. Lot 10 was given 2.5 mgs. Tran-Q tranquilizer per lamb per day and lot 2 was drenched twice. December 30, 30 lambs in the "jackpot" lot were started on an exploratory cobalt study.

Two hundred lambs were grazed on volunteer wheat pasture for the entire test. Fifty of these, lot 8, were fed Tran-Q tranquilizer in salt. Seventy-five of the remaining lambs were shorn at the start of the test. Twenty-five of the shorn lambs and 25 unshorn lambs were reimplanted with 3 mgs. stilbestrol 64 days after the start of the test. Lambs in lot 3 were grazed on irrigated wheat pasture.

Two lots of lambs, 5 and 6, were used in a combination feedlot and wheat pasture study. One of these lots grazed on volunteer wheat pasture for 64 days and then changed to the feedlot for the remaining 44 days.

The other lot was started in the feedlot and was then switched to volunteer wheat pasture.

Volunteer wheat came up early and made rapid growth. However, primarily because of lack of moisture, it soon dried out and turned brown. Because of this, lambs pastured on this type wheat were fed about 0.5 pound alfalfa hay and 0.5 pound grain sorghum for the last 40 days of the test.

Prices of Feeds and Additives

Grain sorghum, \$1.70 per cwt.; alfalfa hay, \$18 per ton; sorghum silage, \$6 per ton; cottonseed or soybean oil meal, \$70 per ton; salt, \$1 per cwt.; wheat pasture, 30 cents per head per month; Hygromix, 50 cents per lb.; Tran-Q per gram of tranquilizer, 80 cents (approximate); stilbestrol implants, 9 cents (approximate).

Observations

Lambs made good gains during the pre-test period even though many exhibited symptoms of internal parasite infestation; 12 had died by February 12. Eleven of them were lost during the first month. One lamb was killed by coyotes. Cause of death was not determined for one lamb. Two died as direct result of heavy stomach worm infestation, and cause of death of eight lambs, seven on wheat pasture, was diagnosed as enterotoxemia, complicated by anemia due to heavy stomach worm infestation.

Results of feedlot tests indicate that lambs not drenched but fed 30 mgs. (30,000 units) of hygromycin per lamb per day gained equally as fast and efficiently as those in lot 7 that were drenched and not fed hygromycin. Hygromycin cost 67 cents per lamb compared with 3 cents per lamb for drench. Lambs in lot 2 were drenched twice but failed to gain faster or more efficiently.

Tran-Q tranquilizer failed to increase gains or feed efficiency in feedlot or on wheat pasture. It was difficult to control level of Tran-Q consumption on wheat pasture. Tran-Q was mixed with salt at a level to supply 2.5 mgs. Tran-Q activity per lamb per day based on salt consumption records obtained on lambs in previous years. However, enough salt was consumed to supply 3.5 mgs. Tran-Q activity per lamb per day. Men working with the lambs reported that lambs fed Tran-Q were quieter than others. This was not observed last year.

Lambs given cobalt bullets gained slightly faster than their controls, but because of the short feeding period and small number on test no definite conclusion can be made.

Small gains were made during the first 64-day period by lambs grazed on volunteer wheat. Because of this all lambs on such pasture were fed .5 pound alfalfa hay and .5 pound sorghum grain per lamb per day, starting January 3. Each lamb gained approximately .10 pound more per day during the last 44 days than during the first 64 days. Shorn lambs gained equally as fast as unshorn lambs. No additional feed, other than a small quantity of alfalfa hay fed when snow covered the wheat, was given to lambs on irrigated wheat. They gained about .05 pound more per lamb per day during the entire test than lambs on volunteer wheat pasture. Cheap gains were made by all lambs on wheat pasture.

Total gain was practically the same for lots 5 and 6. A true comparison between these lots cannot be made because of different periods of time on wheat pasture and in the feedlot and because of variation in quality of wheat pasture at different periods. Feed cost was higher for lot 6 because additional feed was fed while on wheat pasture and because of a longer feedlot period.

Lambs implanted with 3 mgs. stilbestrol in lots on combination wheat pasture feedlot tests, or wheat pasture tests, or in feedlot tests gained 31, 37, and 39 percent faster, respectively, than those not implanted. This amounted to about .10 pound more per lamb per day. Feed efficiency cannot be determined, since implanted and nonimplanted lambs were fed together.

Results of a study comparing lambs receiving no implants, one 3-mg. stilbestrol implant or two 3-mg. stilbestrol implants are reported in Table

Table 37
Results of stilbestrol implants for fattening lambs.

A. 3-mg. stilbestrol implants

Lot number	Feedlot tests		Wheat pasture tests		Combination wheat pasture and feedlot tests	
	2,7,9,10	2,7,9,10	1,3,4,8	1,3,4,8	5,6	5,6
Treatment	No implant	3-mg. stilbestrol implant	No implant	3-mg. stilbestrol implant	No implant	3-mg. stilbestrol implant
Number lambs per treatment	100	100	96	98	49	49
Days on feed	108	108	108	108	108	108
Av. initial wt. per lamb, lbs.	75.8	75.5	74.3	74.7	75.2	75.5
Av. total wt. per lamb, lbs.	106.3	117.4	102.2	113.5	103.7	112.9
Av. total gain per lamb, lbs.	30.5	41.9	27.9	38.8	28.5	37.4
Av. daily gain per lamb, lbs.	.282	.388	.258	.359	.264	.346

B. Reimplanting with stilbestrol on wheat pasture

Lot number	1 and 4		1 and 4		1 and 4	
	No implant	One 3-mg. stilbestrol implant	One 3-mg. stilbestrol implant	Received second 3-mg. stilbestrol implant after 64 days	Received second 3-mg. stilbestrol implant after 64 days	Received second 3-mg. stilbestrol implant after 64 days
Number lambs per treatment	48	48	48	49	49	49
First period—64 days:						
Av. initial wt. per lamb, lbs.	73.2	73.8	73.8	73.4	73.4	73.4
Av. final wt. per lamb, lbs.	85.1	93.4	93.4	92.9	92.9	92.9
Av. total gain per lamb, lbs.	11.9	19.6	19.6	19.5	19.5	19.5
Av. daily gain per lamb, lbs.	.186	.306	.306	.305	.305	.305
Second period—44 days:						
Av. final wt. per lamb, lbs.	100.1	112.7	112.7	115.6	115.6	115.6
Av. total gain per lamb, lbs.	15.0	19.3	19.3	22.7	22.7	22.7
Av. daily gain per lamb, lbs.	.341	.439	.439	.516	.516	.516
Entire test—108 days:						
Av. total gain per lamb, lbs.	26.9	38.9	38.9	42.2	42.2	42.2
Av. daily gain per lamb, lbs.	.249	.360	.360	.391	.391	.391

1. One half lambs in each treatment group were shorn at the start of the test.

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37. Lambs given a second 3-mg. stilbestrol implant after 64 days on test gained 18 percent faster, or .067 pound more per lamb per day during the last 44 days on test than lambs not reimplanted. Over the 108-day trial reimplanted lambs gained .03 pound more per lamb per day than lambs receiving only the initial 3-mg. implant. Lambs implanted with one 3-mg. implant gained 45 percent, or .110 pound more per lamb per day than those not implanted. Reimplanted lambs gained 57 percent, or .140 pound faster per lamb per day than those not implanted. Average fleece weight for fall-shorn lambs was 4.2 pounds. Lambs shorn on February 12 produced an average of 6.6 pounds of wool. Charles Pfizer & Co., Inc., Terre Haute, Ind., furnished the stilbestrol implants and Tran-Q tranquilizers used in these tests.

Table 38
Results of lambs on wheat pasture tests.

Lot number	4		1		8		3	
	Volunteer wheat pasture, unshorn	Volunteer wheat pasture, shorn	Volunteer wheat pasture, unshorn	Volunteer wheat pasture, shorn	Volunteer wheat pasture, Tran-Q, unshorn	Volunteer wheat pasture, Tran-Q, unshorn	Trigated wheat pasture, unshorn	Trigated wheat pasture, unshorn
Number lambs per lot	48	48	48	49	49	49	49	49
Days on feed	108	108	108	108	108	108	108	108
Av. initial wt. per lamb, lbs.	75.4	71.6	71.6	75.6	75.6	75.6	75.4	75.4
Av. fleece wt. per lamb, lbs.	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Av. final wt. per lamb, lbs.	108.4	104.3	104.3	104.9	104.9	104.9	114.0	114.0
Av. total gain per lamb, lbs.	33.0	32.7	32.7	29.3	29.3	29.3	38.6	38.6
Av. daily gain per lamb, lbs.	.306	.303	.303	.271	.271	.271	.357	.357
(all lambs):								
No hormone	.243	.255	.255	.229	.229	.229	.305	.305
3-mg. stilbestrol implant	.368	.351	.351	.312	.312	.312	.408	.408
First 64 days (all lambs)	.252	.240	.240	.215	.215	.215	.315	.315
Last 44 days (all lambs)	.383	.395	.395	.354	.354	.354	.419	.419
Daily feed per lamb:								
First 64 days:								
Wheat pasture	Free choice	Free choice	Free choice	Free choice	Free choice	Free choice	Free choice	Free choice
Alfalfa hay	.15	.15	.15	.16	.16	.16	.16	.16
Salt	.012	.012	.012	.013	.013	.013	.013	.013
Last 44 days:								
Wheat pasture	Free choice	Free choice	Free choice	Free choice	Free choice	Free choice	Free choice	Free choice
Alfalfa hay	.44	.44	.44	.44	.44	.44	.44	.44
Grain sorghum	.44	.44	.44	.44	.44	.44	.44	.44
Alfalfa hay	.44	.44	.44	.44	.44	.44	.44	.44
Salt	.011	.011	.011	.017	.017	.017	.013	.013
Av. lbs. feed per cwt. gain:								
Grain sorghum	57.9	58.4	58.4	66.5	66.5	66.5	66.5	66.5
Alfalfa hay	86.7	87.4	87.4	101.9	101.9	101.9	101.9	101.9
Salt	3.7	3.7	3.7	5.5	5.5	5.5	5.5	5.5
Av. feed cost per cwt. gain ¹	\$ 5.21	\$ 5.21	\$ 5.21	\$ 7.01	\$ 7.01	\$ 7.01	\$ 3.21	\$ 3.21
Av. feed cost per lamb ²	\$ 1.72	\$ 1.72	\$ 1.72	\$ 2.06	\$ 2.06	\$ 2.06	\$ 1.24	\$ 1.24
Cost per lamb on test, 10-27-58 ³	\$16.14	\$16.23	\$16.23	\$16.19	\$16.19	\$16.19	\$16.14	\$16.14
Number lambs died	2	2	2	1	1	1	1	1
Cost of lamb loss	\$.67	\$.65	\$.65	\$.30	\$.30	\$.30	\$.35	\$.35
Av. total cost per lamb ^{4,5,7}	\$18.53	\$18.60	\$18.60	\$18.55	\$18.55	\$18.55	\$17.73	\$17.73
Av. total cost per cwt. gain ^{4,5,7}	\$17.09	\$17.14	\$17.14	\$17.68	\$17.68	\$17.68	\$15.55	\$15.55

1. One half the lambs in each lot were implanted with 3 mgs. stilbestrol.
 2. Lambs in lot 8 consumed an average of 3.5 mgs. Tran-Q activity per lamb per day. This may be higher than actually consumed, as there was probably some salt-Tran-Q mixture wasted.
 3. Lots 4 and 1 were pastured together; therefore, feed consumption records are based on average consumption for both lots.
 4. Includes cost of stilbestrol implants (\$0.09 per implant) and Tran-Q (\$0.32 per lamb).
 5. Includes cost of drench (\$0.03 per lamb).
 6. Figured on initial unshorn weight in all lots.
 7. Includes cost of lamb loss.

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Table 39
Results of lamb-feeding tests during 1958-59, Kansas.

Lot number	7	9	10	2
Treatment ^{1, 2}	Control	Hygromycin	Tran-Q tranquilizer	Double drench
Number lambs per lot	50	50	50	50
Days on feed	108	108	108	108
Av. initial wt. per lamb, lbs.	75.8	75.4	76.0	75.4
Av. final wt. per lamb, lbs.	112.3	111.9	111.6	111.6
Av. total gain per lamb, lbs.	36.5	36.5	35.6	36.2
Av. daily gain per lamb, lbs.	.338	.338	.329	.335
No hormone	.291	.298	.273	.270
3-mg. stilbestrol implant	.386	.378	.386	.399
Daily feed per lamb:				
Whole grain sorghum	1.06	1.06	1.06	1.06
Sorghum silage	3.96	3.70	3.96	3.96
Alfalfa hay	.72	.72	.72	.72
Cottonseed meal	.10	.10	.10	.10
Salt	.023	.020	.024	.023
Hygromycin, mgs.		30		
Tran-Q activity, mgs.			2.5	
Av. lbs. feed per cwt. gain:				
Whole grain sorghum	312.7	313.0	321.1	316.3
Sorghum silage	1169.8	1093.1	1201.4	1183.2
Alfalfa hay	212.9	213.1	218.7	215.4
Cottonseed meal	29.3	29.3	30.1	29.6
Salt	6.8	6.0	7.3	6.8
Av. feed cost per cwt. gain ⁴	\$11.96	13.56	12.89	12.09
Av. feed cost per lamb ⁴	\$ 4.37	4.95	4.59	4.37
Cost per lamb per test				
(10-27-58) ⁵	\$16.23	16.11	16.27	16.17
Av. total cost per lamb ^{4, 5}	\$20.60	21.06	20.86	20.54
Av. total cost per cwt. ^{4, 5}	\$18.34	18.82	18.69	18.41
Lot	Jackpot	Jackpot ⁶		
Treatment	Control ³	Cobalt bullet ³		
Number of lambs per lot	15	15		
Days on feed	44	44		
Av. initial wt. per lamb, lbs.	84.8	84.8		
Av. final wt. per lamb, lbs.	98.3	101.0		
Av. total gain per lamb, lbs.	13.4	16.2		
Av. daily gain per lamb, lbs.	.306	.369		

- Twenty-five lambs in each lot implanted with 3 mgs. stilbestrol.
- Lambs in all lots except 9 were drenched with 6 cc. Trivermol at the beginning of test. Lambs in lot 2 received a second drench 16 days later.
- Fifteen of 30 lambs in the "jackpot" lot were treated with one cobalt bullet per lamb, 12-30-58.
- Includes cost of stilbestrol implants (\$.09 per implant) hygromycin (\$.67 per lamb) and Tran-Q (\$.22 per lamb).
- Includes cost of drench (\$.03 per lamb per treatment).
- Extra lambs not used in the regular feedlot and wheat pasture tests.

Table 40
Results of combination wheat pasture and feedlot tests.

Lot number	5	6
Treatment ^{1, 2}	Volunteer wheat pasture 64 days, then to feedlot for 44 days	Feedlot for 64 days, then to volunteer wheat pasture for 44 days
Number lambs per lot	50	48
Days on feed	108	108
Wheat pasture	64	64
Feedlot	44	44
Av. initial wt. per lamb, lbs.	75.4	75.3
Av. final wt. per lamb, lbs.	107.6	109.0
Av. total gain per lamb, lbs.	32.2	33.7
Av. daily gain per lamb, lb. (all lambs):	.298	.311
No hormone	.263	.263
3-mg. stilbestrol implant	.332	.360
Wheat pasture period (all lambs)	.258	.264
Feedlot period (all lambs)	.356	.344
Av. daily feed per lamb (feedlot):		
Whole grain sorghum	1.05	1.02
Sorghum silage	4.56	3.55
Alfalfa hay	.72	.72
Cottonseed meal	.10	.10
Salt	.024	.019
Av. daily feed per lamb (w. pasture):		
Whole grain sorghum	0	.43
Alfalfa hay	.15	.43
Salt	.012	.011
Av. lbs. feed per cwt. gain:		
Whole grain sorghum	143.7	250.0
Sorghum silage	623.4	685.3
Alfalfa hay	128.0	194.0
Cottonseed meal	13.4	18.7
Salt	5.5	5.1
Av. feed cost per cwt. gain ³	\$ 8.12	10.02
Av. feed cost per lamb ³	\$ 2.61	3.43
Cost per lamb on test, 10-27-58 ⁴	\$16.14	16.12
Number lambs died	0	2
Cost of lamb loss	\$ 0	.71
Av. total cost per lamb ^{3, 4, 5}	\$18.75	20.26
Av. total cost per cwt. ^{3, 4, 5}	\$17.43	18.59

- Twenty-five lambs in each lot implanted with 3-mg. stilbestrol.
- Because of poor pasture, lambs in lot 6 were fed grain sorghum and alfalfa hay during the 44 days they were on wheat pasture.
- Includes cost of stilbestrol implants (\$.09 per implant).
- Includes cost of drench (\$.03 per lamb per treatment).
- Includes cost of lamb loss.

I. Concentrate:Roughage Ratios in Pelleted Rations for Fattening Lambs. II. 3-mg. Stilbestrol Implants for Lambs Fed Pelleted Rations. Project 236.

C. S. Menzies, D. Richardson, and R. F. Cox

A summary of three years' study of the relationship of physical balance to the utilization of pelleted and nonpelleted fattening lamb rations was reported in Circular 358. Results of this work indicated the following: (1) the optimum ratio in nonpelleted lamb-fattening rations was 45 percent concentrate to 55 percent roughage; (2) pelleted rations produced faster, more efficient gains than nonpelleted rations; (3) pelleted rations consisting of 40 percent concentrate and 60 percent roughage produced gains as fast and as efficiently as pelleted rations