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# Feeding on Pasture Versus Dry Lot Feeding of Early Weaned Lambs Implanted With Diethylstilbestrol

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Efforts are continually being made to increase efficiency in producing lamb. The use of hormonal materials has removed the barrier which at one time restricted the breeding season of sheep, and attempts to produce more than one lamb crop per year are not uncommon. Since some techniques used in this type of breeding program require that lambs be weaned at an early age, the management of early weaned, lightweight lambs becomes a problem to those desiring to market finished lambs. Moreover, the demonstrated usefulness of other hormonal materials in stimulating weight gains of lambs raises questions regarding possible hormonal interrelationships involved.

The objectives of this experiment were: (1) to compare the performance of lightweight lambs finished in dry lot versus those finished on pasture; (2) to study the effect of implanting early weaned lambs with diethylstilbestrol (DES); and (3) to compare the eating qualities of lamb resulting from practices stated in objectives (1) and (2).

## Procedure

The lambs used in this experiment were the offspring of ewes which lambled at one year of age. The sires of the lambs were Cheviots. The dams were Columbia, Targhee, and crossbred ewes resulting from matings of Hampshire rams with Columbia and Targhee ewes. Both ewe and wether lambs were involved in the experiment.

Lambs were weaned when about 55 days of age. Thirteen days later, 40 lambs were allotted to four experimental treatments according to breed of dam, weight, and sex. Treatments are shown in Table 1.

Lambs of treatments 1 and 2 were fed separately. Lambs of treatments 3 and 4 grazed together in the same pasture. The available forage was a mixture of alfalfa and grass.

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Table 1. EXPERIMENTAL TREATMENTS

Treatment 1:	Fed in dry lot—no DES implant.
Treatment 2:	Fed in dry lot—3 mg. DES implant.
Treatment 3:	Fed on pasture—no DES implant.
Treatment 4:	Fed on pasture—3 mg. DES implant.

All lambs had free access to a pelleted finishing ration containing 17.6% crude protein. The ration was formulated to contain sufficient crude protein to supply the dietary requirements of lightweight lambs in which daily feed consumption is low. Since the palatability of the finishing ration was unknown, limited amounts of a 13% crude protein alfalfa pellet also were fed. Lambs fed on pasture and in dry lot consumed .6 and .3 pound per day of the alfalfa pellet, respectively.

Composition of the finishing ration is shown in Table 2.

Table 2. RATION COMPOSITION

Ingredient	Pounds
Alfalfa seed screenings .....	700
Cottonseed meal .....	35
Alfalfa hay .....	293
Molasses .....	150
Wheat flour screenings .....	800
Salt .....	20
Antibiotic premix .....	2

At the conclusion of the 55-day feeding period, four lambs of each treatment were slaughtered. Eating qualities of racks from the carcasses were evaluated after cooking and were scored by a panel of eight judges according to tenderness, juiciness, flavor of lean, and flavor of fat. An over-all preference score also was obtained.

## Results and Discussion

Since Cheviot sheep are typically small and tend to finish at a lighter weight than some other breeds, the lambs of this experiment were marketed at a light weight.

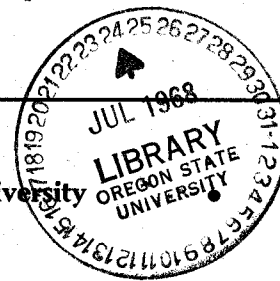
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The rate of gain of lambs finished in dry lot was significantly faster than that of lambs finished on pasture ( $P < .01$ ). Moreover, implanting lambs with 3 mg. of DES also resulted in a significant response in rate of gain ( $P < .05$ ) without producing any undesirable effects such as rectal or vaginal prolapse which are sometimes observed in implanted lambs.

The greatest difference in rate of gain occurred between the implanted lambs finished in dry lot and the nonimplanted lambs finished on pasture. The combining effects of feeding in dry lot and implanting with DES produced a highly significant increased rate of gain ( $P < .01$ ). Rate of gain was not significantly affected by breed of dam or sex of the lamb.

The results of the experiment, summarized in Table 3, show that lambs finished in dry lot consumed about three times more of the ration than lambs finished on

pasture. The differences in meat quality are not statistically significant.

### Summary

Lambs weaned when about 55 days of age and weighing more than 35 pounds can be finished in dry lot or on good pasture. Implanting lambs with 3 mg. of DES per head increased rate of gain under both types of management. Lambs finished in dry lot gained faster than lambs finished on pasture. The most rapid rate of gain was made by implanted lambs that were finished in dry lot.

Although lambs finished in dry lot gained more rapidly than lambs finished on pasture, the pasture-fed lambs consumed only one third as much of the pelleted feed. The price of concentrate feed and the availability of good pasture are important factors in determining which practice to follow.

Table 3. SUMMARY OF FEEDLOT PERFORMANCE AND MEAT QUALITY OF EARLY WEANED LAMBS

Lot number .....	1	2	3	4
Treatment .....	Dry lot	Dry lot	Pasture	Pasture
DES implant per head .....	None	3 mg.	None	3 mg.
Number lambs .....	10	10	10	10
Average age at weaning, days .....	56.3	55.2	55.0	52.8
Average weight at weaning, pounds .....	36.3	37.4	36.7	38.3
Average age into feedlot, days .....	69.3	68.2	68.0	65.8
Days on feed .....	55	55	55	55
Average initial weight, pounds .....	44.4	45.4	44.8	46.3
Average final weight, pounds .....	80.6	86.5	75.9	81.3
Average total gain, pounds .....	36.2	41.1	31.1	35.0
Average daily gain, pound .....	.66	.75	.57	.64
Average daily feed intake, pounds .....	4.4	4.5	1.5 <sup>1</sup>	1.5 <sup>1</sup>
Meat quality data <sup>2</sup>				
Tenderness .....	5.91	6.22	5.85	5.72
Juiciness .....	5.85	6.03	5.31	5.72
Flavor of lean .....	6.07	6.22	5.94	5.91
Flavor of fat .....	6.07	5.85	5.66	5.69
Over-all score .....	5.75	5.97	5.44	5.44

<sup>1</sup> Concentrate feed eaten in addition to pasture forage.

<sup>2</sup> Scored from 1 to 9, with a higher score for tenderness, juiciness, and over-all desirability indicating a meat of higher quality. A higher numerical score for flavor of lean and fat indicates a flavor of more intensity.