Table 15

Feed Consumption and Lamb Production from Four Different Breeds of Rams and Three Types of Ewes.

	No. of lambs	Daily concentrate consumption in creep per lamb	Av. daily gain in lbs. per lamb	Gain per lb. of creep feed consumed
Sire groups:				
Hampshire	37	1.31	.60	.46
Suffolk	35	1.30	.57	.44
Southdown	37	1.22	.54	.44
Shropshire	35	1.13	.49	.44
Ewe groups:				
Finewools	55		.55	
Northwest whiteface	41		.61	
Northwest blackface	48		.55	

Table 16

Body Weights and Wool Production of Ewes of Different Types, 1956-1957.

	Grease wool production	Body wts. following lambing, lbs. per ewe
Finewool	12.3	145.5
Northwest whiteface	14.6	170.0
Northwest blackface	10.6	174.3

The Use of Management Techniques and Hormones to Control the Time, Rate, and Regularity of Lambing (Project BJ-441).

E. A. Nelson, Walter H. Smith and Carl S. Menzies

Fall lambing has been practiced in Kansas commercial ewe flocks for a good many years. Most breeders have reported that commercial ewes do not breed regularly during the summer months and that fall lambing periods tend to be extended with noticeable occasional lapses. In recent years there has been an appreciable amount of research conducted at several experiment stations which has been directed toward the determination of the extent to which each sex is involved in the summer fertility of sheep.

The experimental sheep used in conjunction with studies of summer fertility of sheep at the Kansas Agricultural Experiment Station consist of a commercial flock of approximately 136 head of western ewes of three predominant types (Texas or finewools, northwest blackface crossbreds, and northwest whiteface crossbreds) and four breeds of rams (Hampshire, Suffolk, Shropshire, and Southdown). Observations on the ewe flock during the past five years indicate that most ewes are sexually active during the summer months and that low summer fertility may be associated with the quality of the semen produced by the rams during the breeding season. During the summer of 1956, four of the eight rams used for summer breeding and observed for semen quality were classified as possessing low fertility on the basis of semen motility scores and concentration of spermatozoa. All four breeds of rams were included in the low fertility classifications. It is evident that individual rams tend to vary considerably more in regard to semen quality than do the breeds observed.

During the summer of 1957, 12 rams were observed for semen quality. Eight of these were in active breeding service, four were not. Six were subjected to a cooling treatment during the day by placing them in an air-conditioned room, starting on June 3 and continuing the practice until the end of the breeding season. One-half of the rams subjected to air

conditioning were shorn on June 24 and one-half of the rams not subjected to daytime cooling were shorn on the same date.

Weekly semen collections were made during the summer, starting on June 1 and terminating on August 14. Semen collections were observed for motility, ejaculate volume, sperm concentration, and percentage of abnormal spermatozoa.

All of the rams exhibited a definite decline in semen quality immediately after the start of the breeding season as indicated by all semen characteristics. Most of the rams showed progressive improvement during the breeding season, however. This improvement was more pronounced in rams not in active breeding use than in rams in active breeding use. Of the rams in breeding use, those subjected to daytime cooling displayed the most progressive improvement following the initial decline at the start of the summer breeding season. The effects of shearing were questionable. Shearing was apparently followed by a temporary decline in semen quality in most instances. Shearing may be most beneficial if it is done prior to the onset of the breeding season.

The effects of air conditioning or daytime cooling are also questionable in regard to the improvement of ram semen quality during the summer.

The Relationship of Physical Balance to the Utilization of Pelleted and Non-pelleted Rations for Lambs (Project 236). Three-Year Summary, 1955-56, 1956-57, 1957-58, and Results of 1957-58 Test.

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

Physical balance of lamb-fattening rations has been studied in this project for several years. These tests have been designed to study the effect of pelleting rations of varying proportions of roughages and concentrates upon feed-lot performance and feed efficiency compared with similar non-pelleted rations. For the past three years both dehydrated and field-cured alfalfa hay have been used as roughages.

Experimental Procedure

This is the third year that western feeder lambs have been divided into six lots and fed according to the following plan:

Lot 1—Pelleted ration, 60 percent field-cured alfalfa hay and 40 percent corn. In addition approximately .4 pound of chopped alfalfa hay was fed per lamb per day. Total ration was approximately 65 percent alfalfa hay and 35 percent corn.

Lot 2—Pelleted ration, 50 percent field-cured alfalfa hay and 50 percent corn. In addition each lamb received approximately .4 pound of chopped alfalfa hay per day. Total ration was approximately 55 percent alfalfa hay and 45 percent corn.

Lot 3—Non-pelleted ration, 65 percent chopped alfalfa hay and 35 percent ground corn.

Lot 4—Non-pelleted ration, 55 percent chopped alfalfa hay and 45 percent corn.

Lot 5—Pelleted ration, 60 percent dehydrated alfalfa hay and 40 percent corn. In addition each lamb received approximately .4 pound of chopped alfalfa hay per day. Total ration was approximately 65 percent alfalfa hay and 35 percent corn.

Lot 6—Pelleted ration, 50 percent dehydrated alfalfa hay and 50 percent corn. In addition about .4 pound of chopped alfalfa hay was fed per lamb per day. Total ration was approximately 55 percent alfalfa hay and 45 percent corn.

The alfalfa hay and dehydrated alfalfa hay used in these tests came from the same college field. A portion was dehydrated at the time of cutting and was later used with ground corn to make the pellets for lots 5 and 6. The remainder of the hay was baled and stored in the barn until part of it was ground and used with ground corn to make the pellets fed lots 1 and 2. The chopped hay used in all lots came from the baled-hay supply. This was chopped with an ensilage cutter. All the corn used in these tests has been purchased in bulk lots from a Manhattan mill.