

Ewes in lot 3 had more twins and produced more lambs. Five ewes in each of lots 1 and 4 failed to lamb. This may not be due to treatment. There was little difference in cumulative percentage of ewes lambing after the first 40 days of lambing season. Ewes in lot 4 were behind other lots during the early part of the lambing season.

#### Ewe Pre-lambing Treatment Test—Fall 1960

The 350 ewes were divided into three lots according to age and prior treatment September 27, 1960, and fed according to the following plan until October 31 or lambing, whichever came first.

Lot No.	No. ewes	
7	117	Buffalograss pasture plus $\frac{1}{4}$ pound whole grain sorghum grain.
8	117	Buffalograss pasture plus $\frac{3}{4}$ pound whole sorghum grain.
9	116	Rye pasture plus $\frac{1}{4}$ pound whole sorghum grain.

#### Results and Discussion

Ewes grazed on rye pasture, lot 9, produced both single and twin lambs that were heavier at birth than ewes in lot 7 or 8. As in 1959 the difference narrowed as lambing season progressed and pre-lambing treatment became farther removed from date of lambing. Ewes fed  $\frac{3}{4}$  pound or  $\frac{1}{4}$  pound sorghum grain on buffalograss pasture produced lambs that weighed about the same at birth.

Average Lamb Birth Weights, Lbs.

Lot No.	First 10 lambs	First 30 lambs	First 60 lambs		
	10-26-60	11-8-60	11-15-60	All single lambs	Twin lambs
7	8.6	9.5	9.8	10.1 (86 lambs)	7.7 (23 sets)
8	9.2	9.6	9.9	10.2 (93 lambs)	8.3 (15 sets)
9	10.1	10.4	10.5	10.6 (100 lambs)	8.5 (14 sets)

# Meat

#### The Relation of Packaging Material to the Keeping Quality of Frozen Pork (Project 424).

D. L. Mackintosh, R. A. Merkel, J. L. Hall, Dorothy L. Harrison, L. Anderson

With the increasing number of home storage units, information regarding packaging material and storage life of meat is in constant demand. This project was designed, a number of years ago, to acquire information that might aid in answering these inquiries. Many wrapping materials have been tested and the general conclusion, at this time, is that there are now available many good wrapping materials which can be procured in commercial rolls or home-package size and that there is no need to use inferior materials such as parchment paper or wax papers.

During the past year, a vacuum pack and two different weights of polyethylene papers were tested, using pork sausage as the storage material. There was less than 1% loss in weight after 300 days of storage at 0° F., though the vacuum pack showed practically no loss. In each case, the sausage was no longer acceptable to the palatability committee after seven months, though the vacuum pack was in a little better condition than the others. Since antioxidants are now available and their use in the storage of fresh pork appears to increase the storage life, an antioxidant is being used this year in connection with a good wrapping material and a poor wrapping material. This phase is under observation at this time.

#### The Relation of Feathering and Overflow Fat of Lamb Carcasses to the Grade of the Lamb, Degree of Marbling, and Market Value of the Lamb (Project 580).

D. L. Mackintosh, R. A. Merkel, and C. S. Menzies

This project was undertaken in the spring of 1960 in an endeavor to determine the relationship, if any, of internal fats, overflow, and feathering to the degree of marbling in the *longissimus dorsi* muscle (eye muscle), the grade of the carcass; and the relationship of marbling to the palatability of meat.

Eighty-eight lambs of known breeding were slaughtered in the station laboratory during March, April, and May, 1960. They were the product of a sheep breeding experiment in progress at this station so that the history of each lamb was known. The lambs were slaughtered at about 95 lbs. and slaughter and carcass data recorded. All observations regarding carcass grade were made by a representative of the Federal Grading Service. Data on the palatability of the lambs are not yet available and the observations have not been treated statistically. The following general observations have been made. All carcasses graded within the range of high choice and high prime, feathering from 5 to 9, overflow from 4 to 8, flank fat from 4 to 7, estimated marbling 4 to 7, and actual marbling from 4 to 8, all on a basis of a standard ranging from 1 to 11.

Chemical analyses of the intercostal muscle for fat, as a measure of feathering, ranged from 19% to 30%; the overflow fat, separated mechanically, ranged from 20 to 101 grams, with over 50% falling between 33 and 50 grams. Chemical analyses of the eye muscle ranged from 2% to 7% fat, with about 50% of the lambs falling between 3.5% and 5% fat. Other observations include area of the eye muscle, thickness of fat over the eye muscle, and color of the flank muscle.

The project is being continued and should yield valuable information regarding the indices of finish to marbling, to grade of the carcass, and to palatability of the meat. It will also make valuable carcass data available to the sheep breeding project (No. 347).