

South Dakota State University  
**Open PRAIRIE: Open Public Research Access Institutional  
Repository and Information Exchange**

---

Bulletins

South Dakota State University Agricultural  
Experiment Station

---

6-1-1941

## Fattening Western Lambs and Gummer Ewes

J. C. Watson

F. U. Fenn

Follow this and additional works at: [http://openprairie.sdstate.edu/agexperimentsta\\_bulletins](http://openprairie.sdstate.edu/agexperimentsta_bulletins)

---

### Recommended Citation

Watson, J. C. and Fenn, F. U., "Fattening Western Lambs and Gummer Ewes" (1941). *Bulletins*. Paper 354.  
[http://openprairie.sdstate.edu/agexperimentsta\\_bulletins/354](http://openprairie.sdstate.edu/agexperimentsta_bulletins/354)

This Bulletin is brought to you for free and open access by the South Dakota State University Agricultural Experiment Station at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Bulletins by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact [michael.biondo@sdstate.edu](mailto:michael.biondo@sdstate.edu).

# Fattening Western Lambs and Gummer Ewes



Animal Husbandry Department  
AGRICULTURAL EXPERIMENT STATION  
South Dakota State College  
Brookings, S. D.

## The Sheep Feeder Asks . . . . .

1. Can western gummer ewes be profitably finished for the market?
2. Should the grain ration be ground?
3. What are the feed requirements for fattening gummer ewes?
4. Is corn a more economical feed than barley?

## To Answer These Questions, the South Dakota Agricultural Experiment Station . . . . .

1. Fed 100 ewes and 50 lambs each year for three years and kept weight records of feed consumed and gains made to determine whether ewes or lambs were the most profitable.
2. Fed whole or ground grains to different lots of ewes to determine the value of grinding grain for gummer ewes.
3. Fed corn or barley to comparable groups to determine their value as fattening feeds.
4. Studied the comparative finish and desirability of ewe and lamb carcasses.

## The Experimental Results Indicated . . . . .

1. It is not profitable to feed gummer ewes. Lambs returned a fair profit while in only exceptional instances did the ewes return any profit and then quite small.
2. Grinding grain for gummer ewes reduces its palatability and its efficiency.
3. Gummer ewes required considerably more feed per 100 pounds gain than did the lambs.
4. Corn was a more efficient sheep fattening feed than barley.
5. The ewes and lambs made about the same rate of gain in weight.
6. The meat from finished gummer ewes compared favorably with the meat from finished lambs.

## A Word of Warning in Feeding Gummer Ewes . . . . .

Extreme care should be given to the selection of feeder ewes. The experimental results showed that feeding smooth, thrifty, thin-skinned ewes resulted in more efficient gains and a lower death loss when compared with rough, less thrifty, and thick-skinned ewes. Lambs used in these trials cost approximately \$8.00 per cwt. To have made a comparable profit on the ewes, the purchase price should have been \$1.25 per cwt.

*Picture on cover page shows 1939 Annual Sheep Feeder's Day, sponsored by the South Dakota Agricultural Experiment Station.*

# Fattening Western Lambs and Gummer Ewes

JAMES C. WATSON AND FORREST U. FENN<sup>1</sup>

LAMB FEEDING in eastern South Dakota and in the irrigated sections of the extreme western part of the state has usually proven to be a profitable farm and commercial enterprise. Lamb feeding operations show a fair average margin of profit over a period of years, provide a market for home-grown feeds, utilize farm labor through the slack winter months, and provide a fertilizer return in the form of manure. The majority of lambs fed in these areas are western feeder lambs of crossbred Rambouillet breeding raised in western South Dakota or adjoining western states. The lambs are purchased in the fall through the central public markets, from dealers, or direct from the western producers.

Western producers usually have two classes of feeder sheep to market each year—lambs and aged or cull ewes. Many of these ewes still have a few years of usefulness as breeder ewes under farm flock conditions before they can be classed as strictly feeder ewes. Consequently there are two sources of aged, western feeder ewes: those direct from western bands and those which have been producing under farm flock conditions. The price at which these ewes generally sell has made them attractive as a source of feeder sheep. However, such factors as efficiency of gains of aged ewes, the expected death loss and the

comparable value of the finished ewe and the finished lamb must be considered.

## Objectives of Experiment

The South Dakota Agricultural Experiment Station in 1938 started a series of three years feeding trials with western lambs and gummer ewes. The objects of these trials were:

1. To compare the relative economy of feeding western lambs and gummer ewes.
2. To determine the effect of grinding the grain for the ration of gummer ewes.
3. To compare corn and barley as fattening feeds for gummer ewes and lambs.
4. To determine the effect of feeding on the carcass and mutton value of gummer ewes and compare it with finished lambs.

The report sets forth the plans and results of these trials.

## General Plan of Experiment

In each of the three years trials, 105 gummer feeder ewes and 50 western feeder lambs were purchased in the fall. Five representative ewes were selected and slaughtered in each years trials to secure information on the dressing percentage, percentage of bone and mutton in the carcass, and the palatability and

---

1. Assistant Animal Husbandmen, South Dakota Agricultural Experiment Station, with the Senior author in charge of feeding trials and the Junior author in charge of meat studies.

tenderness of the mutton of the unfinished or feeder ewe.

The remaining 100 ewes were divided into four equal and uniform lots as to grade, thriftiness, and weight. At the same time, the 50 lambs were divided similarly into two lots. The six lots of sheep were hand-fed as follows:

- Lot 1 (ewes)-Whole barley and alfalfa hay.
- Lot 2 (ewes)-Ground barley and alfalfa hay.
- Lot 3 (ewes)-Whole shelled corn and alfalfa hay.
- Lot 4 (ewes)-Ground shelled corn and alfalfa hay.
- Lot 5 (lambs)-Whole barley and alfalfa hay.
- Lot 6 (lambs)-Whole shelled corn and alfalfa hay.

An average of three consecutive daily individual weights was used for the initial and the final weights, and one-day individual weights were taken every 28 days during the trial. The sheep were fed twice daily, grain and hay being fed in separate bunks and a daily weight record was kept of feed consumed by the different lots. A barn was provided for housing. However, the sheep were allowed access to a small exercise lot adjoining each pen in the barn and they usually did not stay inside except in adverse weather. Salt and water were provided at all times. The sheep were graded and marketed when most of the sheep in the lots were finished. Information regarding dressing percentage and carcass grade and condition was supplied by the packing plant in which the sheep were slaughtered.

A leg of mutton from each of five representative finished ewes and the leg of lamb from five representative finished lambs were tested by a committee of judges for palatability and tenderness. The percentage of lean meat, fat, and bone was also determined in these carcasses.

## The Feeder Sheep Used

The feeder sheep were selected to secure a representative sampling of the general market supply. The ewes and lambs in the 1938-39 trial were raised and purchased near Newell, South Dakota. The average grade of the ewes was good and of the lambs was medium to good. They were all vigorous, thrifty feeder stock. The feeder stock used in the 1939-40 trial was raised in Montana and the ewes graded medium to good, while the lambs were of more medium quality. The ewes of the 1940-41 trial were raised in the west, but had been under farm flock conditions in central South Dakota for a few years. They were a more common grade of feeder ewes and lacked the vigor and thriftiness of those used in the previous two years trials. The lambs in the 1940-41 trial were of Montana origin and graded medium to good; they were rangier, rougher lambs and of somewhat less desirable feeder type than those used in the previous trials.

## Feed Used

All feeds used were raised locally. The alfalfa was of good No. 1 quality, first and second cutting. The corn was grown locally and graded No. 2. The barley was a good quality feed barley with a test weight of 41 to 42 pounds per bushel. The grain was ground for the first two trials to a medium fineness in a hammer mill equipped with a 3/16 inch screen. The grain for the last years trial was ground in a burr mill to a corresponding fineness.

A chemical analysis showing the composition of the feeds used in the last two

years trials is shown in the following table:

	Crude Protein	Fat	Crude Fiber	Nitrogen Free Extract	Ash
	Percent	Percent	Percent	Percent	Percent
Corn	11.61	4.21	3.18	79.45	1.55
Barley	15.44	2.45	9.23	70.63	3.25
Alfalfa	16.37	2.06	31.79	41.58	8.20

NOTE: Chemical analyses of the composition of feeds used for the first trial were not obtained.

## Weather Records

The weather during each of the three trials was quite comparable. In the 1938-39 trial, the mean low temperature was 9.4° F. and there were 25 days in which the temperature registered below 0° F. In the 1939-40 trial, the mean low temperature was 13.8° F. and there were 29 days during the trial when the temperature was recorded below 0° F. The mean low temperature in the 1940-41 trial was 11.5° F. and there were 30 days when the temperature was recorded below 0° F.

## The 1938-39 Trial

The 1938-39 trial commenced on November 11, 1938, and ended February 23, 1939, a feeding period of 105 days. Table 1 is a summary of the trial. It will

be noted that there was an unusually low death loss and especially so in comparison with the following year's trials. This was due at least partly to the higher quality of feeder ewes. The feed required per 100 pounds of gain and the rate of daily gains were more favorable in the lots in which corn was fed. The ewes receiving whole grain made more efficient use of the feed than those receiving ground grain. The ewes consumed more grain but required less hay than the lambs per 100 pounds gain. The trial financially showed a profit of \$1.56 per cwt. for the lot of lambs fed barley and \$1.69 per cwt. for the lot of lambs fed corn, while the best lot of ewes (Lot 3, fed whole corn and alfalfa) showed a margin of profit of \$0.28 per cwt. and the poorest lot of ewes (Lot 2, fed ground barley and alfalfa hay) showed a margin of loss of \$0.20 per cwt. This trial indicates that ewes bought at \$3.19 per cwt. returned a very narrow margin of profit under the best feeding and management while lambs fed a similar ration (whole corn and alfalfa hay) and costing \$7.32 per cwt. returned a margin of \$1.69 per cwt.

Table 1. The 1938-39 Trial (105 days)

	Lot 1 Whole Barley Alfalfa 24 Ewes	Lot 2 Ground Barley Alfalfa 24 Ewes	Lot 3 Whole Corn Alfalfa 25 Ewes	Lot 4 Ground Corn Alfalfa 25 Ewes	Lot 5 Whole Barley Alfalfa 23 Lambs	Lot 6 Whole Corn Alfalfa 24 Lambs
Av. initial wt. per head *	91.8	91.7	91.4	91.4	60.7	60.8
Av. final wt. per head	132.5	130.7	141.9	136.5	98.4	101.9
Av. daily gain per head	.39	.37	.48	.43	.36	.39
Total gain per head	40.7	39.0	50.5	45.1	37.7	46.1
Feed consumed per cwt. gain:						
Alfalfa	399.2	481.7	351.6	420.2	439.2	399.0
Barley	651.8	634.3			491.1	
Corn			502.3	552.7		415.9
Death loss (percent)	4	4	0	0	4	0
Shrink in transit to market (percent)	3.7	3.7	3.7	3.7	3.6	3.6
Carcass yield (percent) **	50.5	47.9	50.2	47.2	48.6	49.1

\* All weights and gains are reported in pounds.

\*\* Carcass yield is based on the warm carcass weight.

Table 2. The 1939-40 Feeding Trial (113 days)

	Lot 1 Whole Barley Alfalfa 24 Ewes	Lot 2 Ground Barley Alfalfa 22 Ewes	Lot 3 Whole Corn Alfalfa 23 Ewes	Lot 4 Ground Corn Alfalfa 20 Ewes	Lot 5 Whole Barley Alfalfa 24 Lambs	Lot 6 Whole Corn Alfalfa 23 Lambs
Av. initial wt. per head *	100.6	101.0	101.0	101.2	66.6	67.0
Av. final wt. per head	130.0	125.3	133.2	131.4	98.8	96.4
Total gain per head	29.4	24.3	32.2	30.2	32.2	29.4
Av. daily gain per head	.26	.22	.28	.27	.28	.26
Feed consumed per cwt. gain:						
Alfalfa	440.6	559.1	404.4	466.1	361.7	405.8
Barley	1000.1	1139.2			624.0	
Corn			809.6	903.8		590.3
Death loss (percent)	0	8.33	4.17	16.67	4	4
Shrink in transit to market (percent)	1.7	1.7	1.7	1.7	.28	.28
Carcass yield (percent) **	45.7	45.1	46.0	47.2	48.8	49.4

\* All weights and gains are reported in pounds.

\*\* Carcass yield is based on the warm carcass weight.

### The 1939-40 Trial

The second year's feeding trial started on October 25, 1939, and continued for 113 days, ending February 14, 1940. Table 2 shows the results of this trial. The results indicated the ewes did not gain as efficiently as the lambs and the ewes of the 1938-39 trial. As an example, Lot 4 (ewes fed whole corn and alfalfa hay) required 903.8 pounds of corn and 466.1 pounds of hay to produce 100 pounds of gain while the comparable lot in the 1938-39 trial required only 552.7 pounds of corn and 420.2 pounds of hay for the same gain. This was at least partly due to the individuality of the feeder sheep. They were rather thick-hided and rough, indicating poor feeding qualities. Three of the four lots of ewes showed a death loss, Lot 4 (fed ground corn and alfalfa hay) having 16.67 percent death loss, while the previous year the two lots of ewes fed whole and ground barley showed a four percent death loss each. The ewes in Lot 3 (fed whole corn and alfalfa hay) returned a margin of profit of \$0.25 per cwt. and the ewes fed ground barley and alfalfa hay showed a margin of loss of \$0.71 per cwt. The ewes cost \$3.07 per cwt. Lambs fed whole

barley returned a margin of profit of \$0.67 per cwt. and those fed whole corn returned a margin of profit of \$0.73 per cwt. The cost of these feeder lambs was \$8.13 per cwt.

### The 1940-41 Trial

The 1940-41 trial was the longest of the three. It required 135 days to satisfactorily finish the ewes. The trial was started on November 3, 1940, and ended on March 17, 1941. Table 3 is a summary of this trial.

As previously stated, the ewes in this trial were of common feeder stock quality, and as a result a high death loss was recorded in all lots. This added considerably to the cost of feeding. Some of this death loss resulted from adverse weather conditions and a storm on November 11, 1940. The vigor of these ewes was so low they could not withstand the extreme cold weather conditions. The lambs seemed to be little affected by the storm.

In this trial, as in the previous two trials, the lambs made more efficient gains. The records show a loss in the lots of ewes ranging from \$0.36 per cwt. to

Table 3. The 1940-41 Feeding Trial (135 days)

	Lot 1 Whole Barley Alfalfa 19 Ewes	Lot 2 Ground Barley Alfalfa 21 Ewes	Lot 3 Whole Corn Alfalfa 20 Ewes	Lot 4 Ground Corn Alfalfa 17 Ewes	Lot 5 Whole Barley Alfalfa 23 Lambs	Lot 6 Whole Corn Alfalfa 25 Lambs
Av. initial wt. per head *	87.5	90.6	92.2	90.8	56.6	57.3
Av. final wt. per head	122.8	124.2	129.7	132.2	101.5	105.5
Total gain per head	35.3	33.6	37.5	41.4	44.9	48.2
Av. daily gain per head	.26	.25	.28	.31	.33	.36
Feed consumed per cwt. gain:						
Alfalfa	468.0	436.0	438.0	409.2	361.2	333.3
Corn			732.0	645.8		398.9
Barley	817.4	853.5			478.3	
Shrink in transit to						
Death loss (percent)	24.0	16.0	16.67	32.0	8.0	0
market (percent)	2.2	2.2	2.2	2.2	.1	.1
Carcass yield (percent) **	46.3	43.7	49.3	48.2	46.2	48.1

\* All weights and gains are reported in pounds.

\*\* Carcass yield is based on the warm carcass weight.

Table 4. Summary of the Three Years Feeding Trials

	Lot 1 Whole Barley Alfalfa 67 Ewes	Lot 2 Ground Barley Alfalfa 67 Ewes	Lot 3 Whole Corn Alfalfa 68 Ewes	Lot 4 Ground Corn Alfalfa 62 Ewes	Lot 5 Whole Barley Alfalfa 70 Lambs	Lot 6 Whole Corn Alfalfa 72 Lambs
Days on feed	116.4	117.0	116.5	115.8	117.6	118.0
Av. initial wt. per head *	93.7	94.4	94.9	94.4	61.4	61.6
Av. final wt. per head	128.8	126.9	135.4	133.7	99.5	101.4
Av. gain per head	35.1	32.5	40.5	39.3	38.1	39.8
Av. daily gain	.30	.28	.35	.34	.32	.34
Feed consumed per cwt. gain:						
Alfalfa	431.2	486.1	389.3	428.4	386.6	373.0
Barley	803.5	829.3			524.6	
Corn			647.6	666.8		449.9
Death loss (percent)	9.5	9.5	6.8	16.2	5.4	1.4
Shrink in transit to						
market (percent)	2.6	2.6	2.6	2.7	1.1	1.1
Dressing percent **	47.6	45.7	48.5	47.4	47.9	49.5

\* All weights and gains are reported in pounds.

\*\* Carcass yield is based on the warm carcass weight.

\$1.25 per cwt., while the lambs made a profit of \$2.79 per cwt. for the barley-fed lot, and \$3.72 per cwt. for the corn-fed lot.

## Summary

A summary of the three trials is given in Table 4. The summary, as in each of the single trials, indicated that lambs made more efficient gains, requiring less feed per 100 cwt. of gain. There was a higher death loss in ewes; this adds to

the costs. Corn as a fattening feed was more efficient than barley. Observations indicated that ground grain is less palatable and the daily consumption per ewe was somewhat less than for those in the lots fed whole grain. Finished lambs showed a somewhat higher dressing percentage and a lower shrinkage in transit to market when compared with finished ewes. Packer buyers appraising the finished sheep observed that the lots fed corn were more uniformly and firmly finished than those lots fed barley.



Table 5. Profit and Loss Statement of Three Years Feeding Trials \*

	Lot 1 Whole Barley Alfalfa 67 Ewes	Lot 2 Ground Barley Alfalfa 67 Ewes	Lot 3 Whole Corn Alfalfa 68 Ewes	Lot 4 Ground Corn Alfalfa 62 Ewes	Lot 5 Whole Barley Alfalfa 70 Lambs	Lot 6 Whole Corn Alfalfa 72 Lambs
Feed cost per cwt. gain	\$7.34	\$8.39	\$6.33	\$7.14	\$5.20	\$4.80
Feed cost per head	2.58	2.72	2.56	2.80	1.98	1.91
Death loss cost per head	.42	.59	.28	.88	.35	.17
Veterinary fees	.02	.02	.02	.02	.02	.02
Initial cost per head	3.07	3.07	3.07	3.07	4.92	4.92
Initial cost per cwt.	3.28	3.25	3.24	3.25	8.02	7.99
Marketing cost per head	.25	.24	.26	.25	.19	.19
Interest on investment	.06	.06	.06	.06	.10	.10
Total cost per head	6.40	6.70	6.25	7.08	7.56	7.31
Selling price per cwt.	4.71	4.65	4.72	4.82	9.29	9.41
Selling price per head	6.07	5.90	6.39	6.44	9.24	9.54
Profit or loss per head	-.33	-.80	.14	-.64	1.68	2.23
Cost per cwt.	4.97	5.28	4.62	5.30	7.60	7.21
Profit or loss per cwt.	-.26	-.63	.10	-.48	1.69	2.20

\* The statement is based on alfalfa at \$7.48 per ton, corn at 43 cents per bushel, barley at 34 cents per bushel and grinding at 8 cents per cwt.

## Financial Statement

The average price paid for feeder lambs in the three year's trials was \$8.01 per cwt. The average price of feeder ewes was \$3.26 per cwt. To have made a comparable margin of profit on ewes and lambs when fed whole corn, the buying price of the ewes should have been \$1.14 per cwt. When barley was fed, the price paid for ewes should have been \$1.33 per cwt. to make a comparable profit. Factors which contributed to the increased cost of feeding ewes were a large death loss, less efficient use of feed, and a lower comparable market value than lambs. The death loss, cost of \$0.88 per ewe as recorded for Lot 4 was cost of ewes that died during the trial and the feed they consumed prorated among those ewes marketed. Table 5 is a financial summary of the three year's trials.

## Grades

A study of the grades and their effect on the market value is well demonstrated in this experiment. All sheep were graded by a committee as feeder sheep and again as finished sheep. The carcasses

were graded in the packing plant. Lambs finished a slightly more desirable average grade than ewes and showed a definite improvement in the grade of the carcass while the average carcass grade for ewes was lower than the average live grade of the finished ewes. The average selling price for lambs was \$9.35 per cwt., while the average selling price for ewes was \$4.73 per cwt. This difference in price is at least partly due to higher carcass grade of lambs. Observations in the packing house indicated that those sheep fed corn showed more uniform and firmer conditioned carcasses which confirms the observation of the buyers. Figure 1 graphically illustrates the average grades of the feeder and fat ewes and lambs and the carcasses.

## Meat Studies<sup>1</sup>

At the beginning of each trial, five representative feeder ewes were selected for meat studies. On completion of each

1. Acknowledgement is made of the assistance of Minerva Kellogg and Lida M. Burrill, Assistant Home Economists, South Dakota Agricultural Experiment Station, with the cooking and palatability tests.

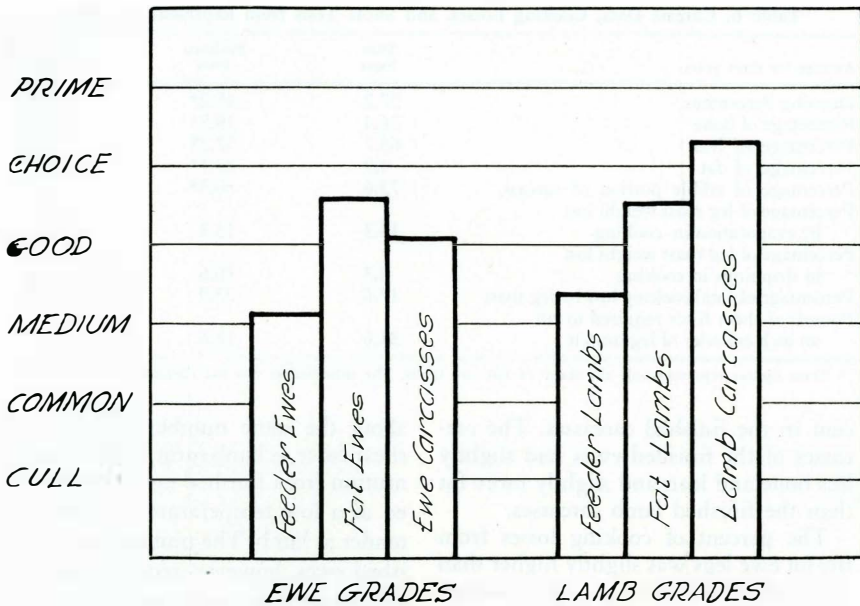


Fig. 1. Average sheep and carcass grades.

trial, the same number of finished ewes and finished lambs were selected. These sheep were slaughtered and the carcasses were allowed to hang in the cooler for 10 days. Half of each carcass was separated into lean, fat, and bone. The leg from the other half of each carcass was roasted at a low temperature (260° F) in a controlled oven. A record of the drippings and other shrinkage resulting in roasting was kept.

A committee for palatability studies consisted of six members. Each member evaluated a slice of cooked meat from each leg according to the procedure outlined by the National Conference on Co-operative Meat Investigations.<sup>2</sup> Their findings indicated that roasted meat from finished lambs had a more desirable aroma, a more desirable flavor of

fat and lean, and was more tender and juicy than meat from the fat ewes. Roasted meat from fat ewes, however, had a more intense aroma and flavor of fat and lean.<sup>3</sup> Their findings also indicated a great improvement of the palatability of the meat from the finished ewes as compared with the meat from feeder ewes. The meat from many of the legs of mutton compared very favorably with the legs of lamb in palatability.

The thin gummer ewes dressed an average of 37.2 percent while the finished ewes and lambs dressed 45.2 percent and 44.2 percent, respectively as shown in Table 6. These dressing percentages were calculated on the chilled weight basis. Finished ewes had an average of 6.7 percent less bone and the lean was 11.5 percent lower than in feeder ewes, while the fat was increased by 18.2 per-

2. United States Department of Agriculture publication, *Methods of Cooking and Testing Meat for Palatability* (Revised February, 1933) Pp 26-27.

3. The palatability scores of the committee of judges are available on request.

Table 6. Carcass Data, Cooking Losses, and Shear Tests from Representative Sheep

Average for three years	Thin Ewes	Finished Ewes	Finished Lambs
Dressing Percentage	37.2	45.2*	44.2*
Percentage of bone	26.4	19.7*	20.9*
Percentage of lean	68.7	57.2*	61.3*
Percentage of fat	4.9	23.1*	17.8*
Percentage of edible portion of carcass	73.6	80.3*	79.1*
Percentage of leg roast weight lost by evaporation in cooking	13.3	13.3	12.5
Percentage of leg roast weight lost in drippings in cooking	4.3	10.6	9.2
Percentage of total cooking loss by leg roast	17.6	23.9	21.7
Pounds of shear force required to cut an inch cylinder of leg muscle	31.6	18.6	18.4

\* These figures represent only the sheep of last two trials. The information was not obtained for the first year.

cent in the finished carcasses. The carcasses of the finished ewes had slightly less bone and lean and slightly more fat than the finished lamb carcasses.

The percent of cooking losses from the fat ewe legs was slightly higher than that from the lambs legs and considerably more than the losses from feeder ewe legs. The tenderness test was made by the use of a Warner-Bratzler shear, which records the pounds of force required to pull a dull blade through a one-inch cylinder of cooked muscle. The meat from the finished ewes required

about the same number of pounds of shear force as lamb meat, indicating that mutton from finished ewes, when roasted at a low temperature, was about as tender as lamb. The mutton from unfinished ewes, however, required considerably more shear force, indicating that it is less tender. A study showed that the color of roasted meat from the ewes was somewhat darker, ranging from a medium to a dark brown, while lamb was lighter in color, being about a light brown.

## Conclusions

1. It was considerably more profitable to feed western lambs than aged western gummer ewes. Three years trials indicate a margin of profit in lambs of \$1.69 per cwt., to \$2.20 per cwt., compared with ewes with a loss of \$0.63 per cwt. to a profit of \$0.10 per cwt.
2. Ewes made about the same daily gains per head as lambs, but required about 51 percent more grain and 12 percent more hay to make these gains.
3. Grinding was not a profitable means of preparing the shelled corn or barley for gummer ewes. More profitable gains were made by feeding these grains whole.
4. A high death loss of gummer ewes was recorded during the feeding period. The rate of death loss depended largely on the quality and vigor of the ewes.
5. Corn proved to be a more efficient and economical fattening feed than barley in these trials.
6. Mutton from fat ewes compared favorably with similar meat from the fat lambs when roasted by methods used in this project.