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Fattening Early and Late Lambs

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CONCLUSIONS

A. Spring lambs

When ewes suckle liberally and pastures furnish an abundance of forage, satisfactory finish can be produced on spring lambs without the feeding of grain.

When ewes fail to supply liberal amounts of milk to their lambs, or pastures are poor, it is advisable to feed grain to the lambs if they are expected to get fat enough to market as fat lambs. An insufficient milk supply may result from one or more of the following causes: (a) high percentage of twins (b) advanced age of ewes (c) thin condition of ewes at lambing time or (d) insufficient pasture.

The value of the additional weight on lambs fed grain is usually more than enough to pay for the cost of the grain consumed.

B. Late lambs

1. When good pasture is unavailable during the fall, it seems advisable to full-feed late lambs in dry lot. Rapid, economical gains and choice market finish may be developed.

2. When good Korean lespedeza and winter barley pastures are available, lambs may be grazed on them with no grain. If they are fat enough at the end of the grazing season, they may be marketed but if they lack sufficient finish, full-feeding grain and hay in dry lot for a short time is indicated and usually profitable.

General

While experimental results seem to indicate little advantage in feeding grain to nursing lambs, results in commercial flocks indicate that there may be conditions where it is advisable. The value of grain in rations of late lambs also seems to vary with conditions.

Fattening Early and Late Lambs

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Missouri has been a leading corn belt state in the production of early spring lambs for many years. Favorable climatic conditions, abundant pastures in normal seasons, nearness to central markets, high class sires and efficient methods in care and feeding have contributed to the success of this enterprise. Missouri sheep producers have also found that the highest prices paid for lambs during the entire year are usually in May and June.

To command top prices lambs must be fat when marketed. While some producers depend entirely on a heavy milk flow from ewes on good pasture, others feed grain in addition to pasture and the mothers' milk to make lambs fat. Some merely provide grain in a creep while others separate the lambs from the ewes in the evening and shut them in the creep with grain before them all night.

Twenty to twenty-five per cent of the Missouri lamb crop is marketed by July 1, while the remaining seventy-five per cent is marketed in the fall or early winter.

Some flock owners choose to produce late lambs while others are forced to do so because they are not able to meet all the requirements for early lamb production. Late lambs are usually carried on grass with their mothers and weaned in late August. Frequently, they are then grazed on lespedeza, in corn fields, or on fall sown small grain pasture, and are later fed grain either in dry lot or on pasture until they are fat.

The Missouri Experiment Station therefore conducted tests in 1934 and 1935 to study methods of fattening early lambs and late lambs. In part one of this bulletin is a discussion of method of producing early fat lambs and in part two is a discussion of methods of producing fat late lambs.

PART I

Producing Early Fat Lambs

Two lots of lambs suckling their dams on good pasture were fattened in each of two years, 1934 and 1935. One lot, in addition to milk and pasture, received shelled corn and the other lot received no grain feed. In 1934 the test was conducted from April 11 to July 1, a period of 81 days, and in 1935 for 69 days or from April 23 to July 1. Pure-bred Hampshire, Shropshire, and Southdown lambs selected from the College flock were used. The mothers of the lambs averaged 3½ years old and all were apparently good sucklers. The lots were made as

uniform as possible with respect to breed, weight, sex, and number of single and twin lambs. The lambs were not marketed but were graded individually as slaughter lambs at the close of the experiment.

Weights of Lambs.—Each lamb was weighed three consecutive mornings both at the beginning and at the close of the experiment. The averages of each group of three weights were the initial and final weights, respectively. Individual weights were obtained every two weeks.

Grain Fed.—When shelled corn was used it was fed each night and morning. The lambs were driven into the feeding pen each time and shut in for a period of 30 minutes, although they usually ate what they desired in 15 to 20 minutes.

Pastures Used.—Each lot of 20 lambs in 1934 grazed on three kinds of pasture during the experiment. They were first on a mixture of barley and vetch. As soon as the forage in this pasture ceased to be abundant they were placed on alfalfa pasture. It was necessary to change them later to bluegrass on which they completed the experiment. Drought and high temperatures caused bluegrass pastures to turn brown by June 1, a condition not usually reached in Missouri until at least one month later.

The pasture used for each lot of 10 lambs in 1935 was a mixture of barley, timothy, red and alsike clover. Weather conditions during the season were ideal for pasture growth.

In these experiments, regardless of the kind of pasture used, an abundance of forage was available at all times for both the ewes and lambs.

Data and Discussion.—The data secured in 1934 are summarized in Table 1.

TABLE 1.—GRAIN VS. NO GRAIN FOR FATTENING EARLY LAMBS—SUCKLING THEIR DAMS ON PASTURE—APRIL 11-JULY 1 (81 DAYS) 1934

Lots	I	II
	Shelled corn in creep	No grain
No. lambs in lot	20	20
Avg. initial wt. (lbs.)	29.49	29.30
Avg. final wt. (lbs.)	68.64	63.22
Avg. total gain per lamb (lbs.)	39.15	33.92
Avg. da. gain per lamb (lbs.)	.483	.419
Grain cons. per lamb (lbs.) Total	42.19	....
Avg. daily	.520	....
Per 100 pounds gain	107.75	....
Slaughter lamb grade	Good	Good

Important items to consider in deciding whether or not it pays to feed grain to suckling lambs are the effect that grain feeding has upon the rate of gain, feed required per unit gain, and market finish.

The average initial weight for both lots of lambs was approximately 29 pounds. The grain-fed lambs gained .483 pounds per head daily while the others gained .419 pounds per head. The average final weight of grain-fed lambs was approximately 5 pounds greater—68.6 pounds compared with 63.2 pounds. Forty-two and nineteen hundredths pounds total grain was consumed by each grain-fed lamb or an average of .52 pounds per day.

During the first seven weeks of the experiment, pastures were green and palatable and little grain was consumed. Only .05 pounds per head was consumed daily for the first three weeks and .26 pounds daily for the following four weeks. Each lamb consumed between one and two pounds of grain daily from June 1 until the close of the experiment.

Grading showed no significant difference in market finish of the two lots at the completion of the test.

Table 2 reports the results obtained in 1935.

TABLE 2.—GRAIN VS. NO GRAIN FOR FATTENING EARLY LAMBS—SUCKLING THEIR DAMS ON PASTURE—APRIL 23-JULY 1 (69 DAYS) 1935

Lots	I	II
Rations	Shelled corn	No grain
No. lambs in lot	10	10
Av. initial wt. (lbs.)	39.76	39.96
Avg. final wt. (lbs.)	72.73	68.83
Avg. total gain per lamb (lbs.)	32.97	28.87
Avg. da. gain per lamb (lbs.)	.478	.418
Grain cons. per lamb (lbs.) Total	18.13	....
Avg. daily	.263	....
Per 100 lbs. gain	54.99	....
Slaughter lamb grade	Good	Good

In the second year the average initial weight of lambs in each lot was approximately forty pounds. At the close of the experiment, the grain-fed lambs again weighed about five pounds more per head than did the lambs which had received no grain. The average daily gains were .478 pounds and .418 pounds, respectively, for the two groups.

Grain consumption was .263 pounds daily or a total of 18.13 pounds per lamb during the 69 day feeding period. Pastures used in 1935 were very palatable and continued to grow throughout the entire test. The individual slaughter grades for lambs fed grain ranged from

"low good" to "good" and those fed no grain ranged from "medium" to "prime." The general appearance of the grain-fed lambs was more attractive so that as a lot they graded "good" as compared with the average grade of "low good" for those getting no grain.

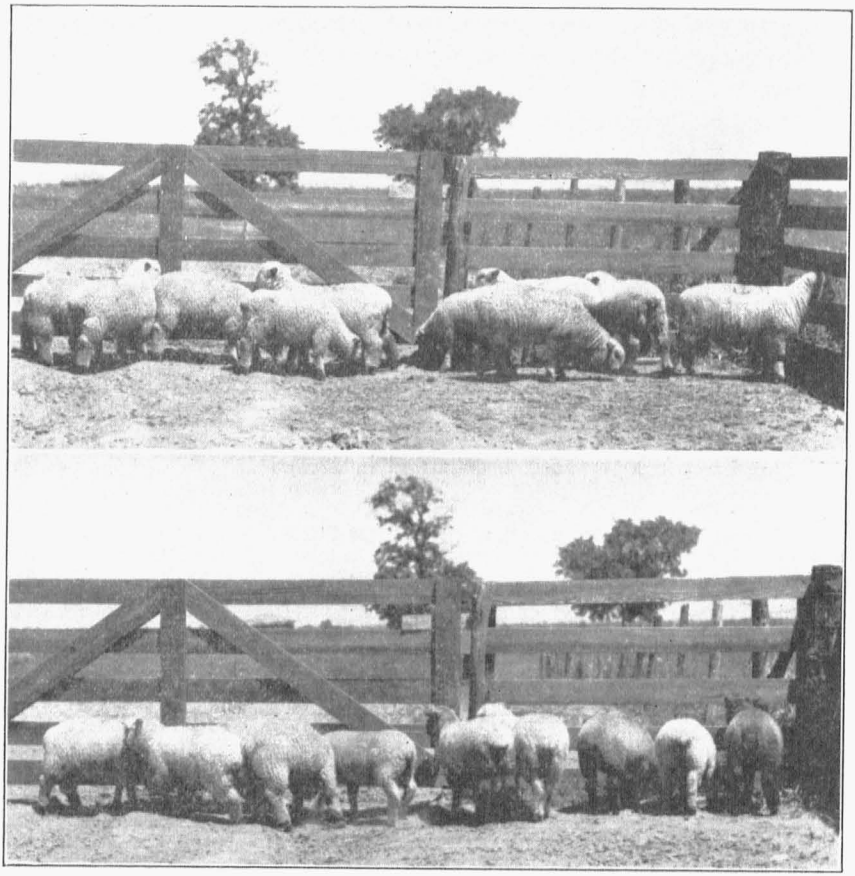

Fig. 1.—(Upper) Early lambs—grain fed (Lot 1) at the close of the experiment, 1935.
(Lower) Early lambs fed no grain (Lot 2) at the close of the experiment, 1935.

The rates of gain in both lots were larger in 1934 than in 1935 in spite of the fact that the summer in 1934 was extremely hot and dry while the early part of the 1935 season was favorable for growth of grass. The difference in the character of the pasture in 1934 and 1935 may account in part at least for the difference in the amount of grain consumed in the two trials. When the forage was lush and palatable it is probable that the lambs consumed more pasture and hence, as data show, 52% less grain. However, the small amount of

grain consumed in 1935 apparently did the lambs much good since they showed a more desirable market finish than the group receiving no grain, while in 1934 there was no apparent difference in the two lots. Evidently the dry pasture consumed in 1934 was higher in total digestible nutrients than the lush pasture in 1935. It has been frequently observed that in seasons when pastures grow rapidly and rains are frequent lambs scour badly and parasites are more numerous.

A combination of results secured in 1934 and 1935 are reported in Table 3.

TABLE 3.—GRAIN VS. NO GRAIN FOR FATTENING EARLY LAMBS—SUCKLING THEIR DAMS ON PASTURE—AVG. 2 YEARS RESULTS 1934 AND 1935, 75 DAYS.

Lots	I	II
Rations	Shelled corn in creep	No grain
No. lambs in lot	15	15
Avg. initial wt. (lbs.)	34.62	34.63
Avg. final wt. (lbs.)	70.68	66.02
Avg. total gain per lamb (lbs.)	36.06	31.39
Avg. daily gain per lamb (lbs.)	.48	.42
Grain cons. per lamb (lbs.) Total	30.16	....
Avg. daily	.39	....
Per 100 lbs. gain	81.37	....

Summary

1. Early spring lambs fed shelled corn in addition to their dam's milk and pasture made slightly faster gains than similar lambs fed no grain.

2. An average of 30 pounds shelled corn was consumed by each lamb during an average feeding period of 75 days.

3. There was considerable variation in the two years in the amount of grain consumed probably due to the condition of the pasture.

4. Each year the lambs receiving grain weighed approximately five pounds more per head at the close of the experiment than those which were not fed grain.

5. The value of this additional weight was more than enough to pay for the cost of the grain consumed.

6. The lambs fed grain were similar in market finish to lambs fed no grain in the first test and were fatter at the close of the second test.

7. Good market finish can be obtained on early spring lambs without the use of grain, if pastures are good and the lamb's mothers are good producers of milk.

PART II

Fattening Late Native Lambs

Object.—Experiments in fattening late native lambs compared the following systems of management.

(1) Fattening in dry lot, full-fed grain and hay twice daily: shelled corn 10, cottonseed cake 1, and hay. (Lot I)
(2) Fattening on pasture, full-fed grain twice daily. (Lot 2)
(3) Fattening on grass alone. (Lot 3)
(4) Fattening on grass alone for a portion of the feeding period and then full-feeding grain and hay in dry lot. (Lot 4)
(5) Shearing and then fattening on pasture, full-fed grain twice daily. (One year only.) (Lot 5)

General Plan.—Trials were conducted in each of two years. In 1934, forty lambs were divided into four lots made uniform as to number, type, weight, general thrift, and quality. The following year 50 lambs were divided into five uniform lots.

Animals Used.—Late, grade native wether and ewe lambs were purchased each year. In 1934 they were obtained in Monroe County, Missouri, and in 1935 on the St. Louis market. The lambs purchased the first year were of good quality and thrift, while those in 1935 were of medium quality, and lacked somewhat in thriftiness.

Treatment of Lambs for Parasites.—The lambs were given worm treatment each year before the experiment started by drenching with bluestone-Blackleaf 40 solution. Additional treatments were administered as deemed necessary throughout the feeding period—none being necessary in 1934 and several in the early part of the experiment conducted in 1935.

Weights of Lambs.—The method described in Part I for obtaining initial and final weights was used. Bi-weekly individual weights were taken.

Feed Used.—The grain fed each year was No. 2 shelled yellow corn 10 parts and cottonseed cake (43% protein) 1 part by weight. Locally grown alfalfa hay of good quality composed the dry roughage. The pasture was Korean lespedeza each year until fall sown barley became available.

Sale of Animals.—All lambs, except those grazed and then full-fed, were sold on the St. Louis market in October, 1934 and December, 1935. These remaining lambs were fed during a later period each year and consequently marketed at later dates—December, 1934, and February, 1936.

Carcass Grades.—Carcasses of the lambs, except those marketed at later date, were graded individually each year by a U. S. D. A. meat grader.

Data and Discussion.—A summary of the data obtained in 1934 is given in Table 4:

TABLE 4.—METHODS OF FATTENING LATE NATIVE LAMBS—AUG. 1-DEC. 17 INCL. (139 DAYS) 1934.

Lots	I	II	III	IV	
	Aug. 1 - Oct. 9, 1934 70 Days			Aug. 1 - Dec. 17,1934 139 Days	
				*112 Days	*27 Days
Rations	Sh. Corn 10 C.S. Cake 1 Alfalfa Hay	Sh. Corn 10 C.S. Cake 1 Korean Les. & Barley Pasture	Korean Les. & Barley Pasture	Korean Les. & Barley Pasture	Sh. Corn 10 C.S. Cake 1 Alfalfa Hay
No. lambs in lot	10	10	10	10	
Avg. initial wt. (lbs.)	61.40	61.60	61.76	61.76	93.76
Avg. final wt. (lbs.)	90.63	87.16	83.30	93.76	110.30
Avg. gain per head (lbs.)	29.23	25.56	21.54	32.00	16.54
Avg. daily gain per head (lbs.)	.417	.365	.307	.285	.612
Avg. total feed consumed per head:					
Shelled corn (lbs.)	85.29	68.63	Pasture	Pasture	36.81
(Bushels)	1.52	1.22	....	....	.66
C. S. Cake (lbs.)	8.53	6.86	....	....	3.68
Alfalfa Hay (lbs.)	114.23	Pasture	....	....	54.29
Avg. daily ration in lbs.:					
Shelled corn	1.22	.98	Pasture	Pasture	1.36
C. S. Cake	.12	.09	....	....	.14
Alfalfa hay	1.63	Pasture	....	....	2.01
Feed (lbs.) required per 100 pounds gain:					
Shelled corn	291.78	268.50	Pasture	Pasture	222.55
C. S. Cake	29.18	26.85	....	....	22.25
Alfalfa hay	390.80	Pasture	....	....	328.23
Average carcass grade.....	Middle Choice	Middle Choice	Low Choice	(Not Graded)	
Selling price per cwt.	6.40	6.40	6.10	....	7.75

Feed Prices: Corn (shelled) .70c per bushel
C. S. Cake 43% $40.00 per ton
Alfalfa hay $12.00 per ton
Pasture .25c per head per month

*Grazed without grain for 112 days then full fed in dry lot for 27 days.

Rates of gain, feed consumed per unit of gain, carcass grades and selling price are items to consider in comparing methods of management.

At the beginning of the experiment the lambs full-fed grain and alfalfa hay in dry lot weighed about 61 pounds per head and reached a final average weight of approximately 91 pounds having gained at the daily rate of .417 pounds. To make this gain each lamb consumed an average of 1.22 pounds of shelled corn, .12 pounds of cottonseed cake and 1.63 pounds of alfalfa hay per day.

The appetite of the lambs was good in spite of extremely hot weather during the first part of the experiment. Toward the close of the test, the lambs ate as much as 2.2 pounds of grain and 1.8 pounds of alfalfa hay per head daily. The length of time that the lambs would have continued to consume feed at this rate was problematical since they were becoming "shaky" on their legs when the test closed. The yolk in the fleeces of these lambs was particularly abundant. It required 291.78 pounds corn, 29.18 pounds cottonseed cake and 390.80 pounds alfalfa hay per 100 pounds gain which collectively cost $6.94 when 1934 feed prices were applied.

The carcasses ranged in grade from "good" to "choice," the average for the lot being "middle choice."

The average initial weight of the lambs fed grain on pasture was about the same as for those fed in dry lot. However, the final weight was slightly less (87 pounds compared with 91 pounds) and the average daily gain was correspondingly smaller (.365 pounds compared with .417 pounds). The average daily feed per head in addition to pasture was .98 pounds shelled corn and .09 pounds cottonseed cake. For each 100 pounds gain 268.5 pounds shelled corn and 26.85 pounds cottonseed cake plus pasture were consumed. At the prices obtaining at the time, these feeds were worth $5.64. At the close of the test each lamb was eating an average of 1.60 pounds of grain daily. It was rather difficult to keep these lambs on full feed, probably because on some days they consumed more grass than on others, depending on the weather conditions. The average carcass grade was "middle choice."

The lambs grazed without grain made an average daily gain of .307 pounds per head. Their final average weight, 83 pounds, was somewhat less than that of the lambs fed grain. No feeding difficulties were experienced and the cost of the feed was relatively low, being $2.70 per hundred weight. The average carcass grade was "low choice."

Lambs grazed and then grain-fed averaged approximately 62 pounds per lamb at the beginning of the experiment and after being on pasture 112 days averaged almost 94 pounds per head. This gain of 32 pounds made on pasture alone was at the average rate of .285 pounds daily. While being full-fed grain and hay in dry lot for the following 27 days, the lambs gained .612 pounds per head daily. Weather conditions were ideal for feeding in the latter period, and the lambs' appetites were good. Each consumed an average of 1.36 pounds shelled corn, .13 pounds cottonseed cake and 2.01 pounds alfalfa hay per day. Two hundred twenty-two and 55 hundredths pounds of

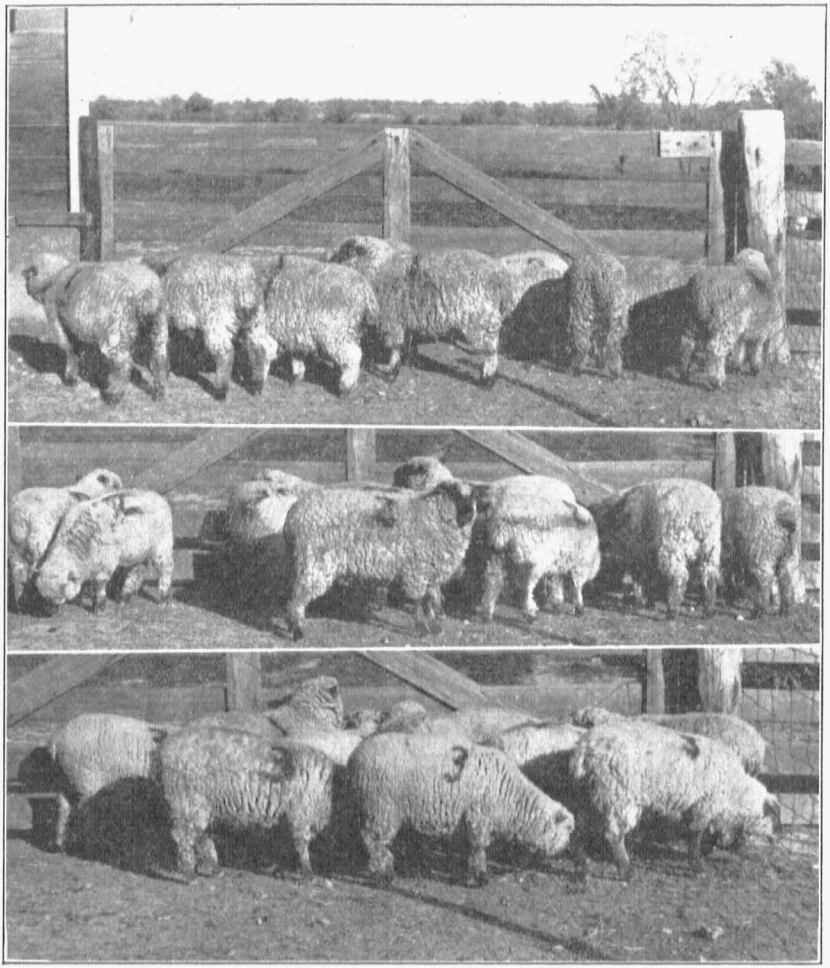

Fig. 2.—(Upper) Lot I, late lambs full-fed in dry lot, at the close of the experiment, 1934. (Center) Lot II, late lambs fed grain on pasture, at the close of the experiment, 1934. (Lower) Lot III, late lambs, pasture only, at the close of the experiment, 1934.

corn, 22.25 pounds cottonseed cake and 328.23 pounds alfalfa hay were eaten for each 100 pounds gain. During the time the lambs were on pasture their cost per 100 pounds gain was $2.91 and while in dry lot it was $5.21. Selling prices indicate the relative finish of the lambs marketed at the same time. All grain-fed lambs sold for $6.40, the top of the day's market, while those which had grazed without grain brought $6.10 per hundred weight. The lambs grazed and then full-fed 27 days were marketed about ten weeks later at $7.75 per hundred weight which was also the top price on fat lambs the day they were marketed.

TABLE 5.—METHODS OF FATTENING LATE NATIVE LAMBS—SEPT. 19, 1935 TO FEB. 3, 1936 (137 DAYS).

Lots	I	II	III	IV		V
	Sept. 19, 1935 to Dec. 11, 1935 84 Days			Sept. 19, 1935 to Feb. 3, 1936—137* Days		Sept. 19, 1935 to Dec. 11, 1935 84 Days
				84 Days	53 Days	
Rations	Sh. Corn 10 C.S. Cake 1 Alfalfa Hay	Sh. Corn 10 C.S. Cake 1 Korean Les. & Barley Pasture	Korean Les. & Barley Pasture	Korean Les. & Barley Pasture	Sh. Corn 10 C.S. Cake 1 Alfalfa Hay	Sh. Corn 10 C.S. Cake 1 Korean Les-pedeza & Barley Pasture
No. lambs in lot	10	10	10	10		10
Avg. initial wt. (lbs.)	63.23	63.78	62.52	63.13	77.85	64.50
Avg. final wt. (lbs.)	106.40	86.58	77.13	77.85	105.96	84.92
Total gain (lbs.)	43.17	22.80	14.61	14.72	28.11	20.42
Avg. daily gain (lbs.)	.514	.271	.174	.175	.530	.243
Avg. total feed consumed per head:						
Shelled corn (lbs.)	129.94	86.03	Pasture	Pasture	103.00	93.04
Shelled corn (bus.)	2.32	1.54	....	....	1.84	1.66
C. S. Cake (lbs.)	12.99	8.60	....	....	10.30	9.30
Alfalfa hay (lbs.)	142.12	Pasture	....	....	130.39	Pasture
Avg. daily ration in lbs. per head:						
Shelled corn	1.55	1.02	Pasture	Pasture	1.94	1.11
C. S. Cake	.15	.10	....	....	.19	.11
Alfalfa hay	1.69	Pasture	....	....	2.46	Pasture
Feed (lbs.) required per 100 pounds gain:						
Shelled corn	301.02	377.34	Pasture	Pasture	366.42	455.50
C. S. Cake	30.10	37.73	....	....	36.64	45.55
Alfalfa hay	329.24	Pasture	....	....	463.83	Pasture
Average carcass grade	Top Choice	Top Choice	Low Choice		Top Choice	Top Choice
Sale price per cwt.	$11.00	$10.50	$9.50		$10.25	$9.50

Feed Prices: Shelled Corn 70c per bushel
C. S. Cake 43% $40 per ton
Alfalfa hay $12.00 per ton
Pasture 25c per head per month

*Grazed without grain 84 days, then full-fed in dry lot 53 days.

Table 5 contains a summary of the data obtained in 1935.

The average initial weight of the lambs in each lot was about 63 pounds per head. The lambs full-fed in dry lot made an average total gain of 43.17 pounds per head at the rate of .514 pounds per day. An average of 1.55 pounds corn, .15 pounds cottonseed cake and 1.69 pounds hay was consumed daily per head. It required approximately 300 pounds corn, 30 pounds cottonseed cake and 329 pounds alfalfa hay for 100 pounds gain. The average carcass grade of the lambs was "top choice."

The lambs full-fed on lespedeza and barley pasture made an average daily gain of .271 pounds per head which was approximately 53% of that made by those fed in dry lot. This resulted in an average final weight about twenty pounds less (86.58 pounds compared to 106.4 pounds). Average daily grain consumption was approximately 1 pound per head. In addition to pasture, for 100 pounds gain, 377.3 pounds corn and 37.7 pounds cottonseed cake were required. The average carcass grade for this lot was also "top choice."

The final average weight of the lambs grazed on Korean lespedeza and barley without grain feed was approximately 77 pounds per head which was 29 pounds less than the average of those full-fed grain in dry lot and 9 pounds less than the average of those full-fed grain on pasture. Average daily rate of gain per lamb was .174 pounds. Carcasses of this lot had an average grade of "low choice."

The lambs that were grazed 84 days, then full-fed in dry lot 53 days, reached an average weight of about 78 pounds per head at the end of their period on grass alone having gained at the rate of .175 pounds daily. For the next 53 days in dry lot they made .53 pounds daily gain per head, reaching a final average weight of 105.96 pounds. Appetites of the lambs through the dry lot period were good, and each lamb consumed an average of approximately 2 pounds of grain and 2.5 pounds of hay daily. It required 366.4 pounds corn, 36.6 pounds cottonseed cake and 463.83 pounds hay for 100 pounds gain.

Although the sheared lambs consumed more grain daily than the unshorn lambs in the corresponding Lot 2, the daily gains were not as rapid nor as economical. They gained at the average rate of .243 pounds daily to reach a final average weight of approximately eighty-five pounds. In addition to pasture these shorn lambs required 455 pounds corn and 45.5 pounds of cottonseed cake for 100 pounds gain while the unshorn lambs similarly fed required approximately 377 pounds corn and 37.7 pounds of cottonseed cake. These lambs sold for $1.00 per hundred less than the unshorn lambs although the average carcass grade was the same. This is the usual occurrence in regard to difference in selling price.

TABLE 6.—METHODS OF FATTENING LATE NATIVE LAMBS—AVERAGE 2 YEARS RESULTS—1934 AND 1935.

Avg. No. Days	76 Days			138 Days		84 Days
				98 Days	40 Days	
Lots	I	II	III	IV		V*
Rations	Sh. Corn 10 C.S. Cake 1 Alfalfa Hay	Sh. Corn 10 C.S. Cake 1 Korean Les. & Barley Pasture	Korean Les. & Barley Pasture	Korean Les. & Barley Pasture 112 days	Sh Corn 10 Alfalfa Hay	Sh. Corn 10 C.S. Cake 1 Korean Les-pedeza & Barley Pasture
No. lambs in lot	10	10	10	10		10
Avg. initial wt. (lbs.)	62.31	62.69	62.14	62.44	85.80	64.50
Avg. final wt. (lbs.)	98.51	86.87	80.21	85.80	108.13	84.92
Total gain per head (lbs.)	36.20	24.18	18.07	23.36	22.33	20.42
Avg. daily gain (lbs.)	.465	.318	.240	.230	.571	.243
Avg. total feed consumed per head:						
Shelled corn (lbs.)	85.66	77.33	Pasture	Pasture	69.90	93.04
Shelled corn (bus.)	1.53	1.38	....	....	1.25	1.66
C. S. Cake (lbs.)	8.57	7.73	....	....	6.99	9.30
Alfalfa hay (lbs.)	128.17	Pasture	....	....	92.34	Pasture
Avg. daily rations in pounds:						
Corn	1.38	1.00	Pasture	Pasture	1.65	1.11
C. S. Cake	.14	.10	....	....	.16	.11
Alfalfa hay	1.66	Pasture	....	....	2.23	Pasture
Feed (lbs.) required per 100 pounds gain:						
Corn	296.41	322.92	Pasture	Pasture	295.15	455.5
C. S. Cake	29.64	32.29	....	....	29.51	45.5
Alfalfa hay	360.02	Pasture	....	....	397.01	Pasture
Avg. carcass grade	Middle to Top Choice	Middle to Top Choice	Low Choice	Not Graded		Top Choice
Sale price per cwt.	$8.70	$8.45	$7.80	....	$9.00	$9.50

*Lot 5 data are for one year only—see Table 5, page 12.

Table 6 summarizes the data for two years, 1934 and 1935.

All lambs except those grazed 84 days then full-fed were sold on the St. Louis market the same day and brought from $9.50 to $11.00 per hundred weight. The price obtained for lambs full-fed in dry lot was the highest paid for fat lambs that day. The lambs which were grazed and then full-fed were marketed later and sold at $10.25 per hundred weight, the top market price that day.

When the results obtained in 1934 and 1935 are compared several differences are noticed. In spite of the fact that the daily and total consumption of grain and hay was larger in all lots in 1935, the gains in all lots, with the exception of those full-fed in dry lot were smaller. More grain was required for each 100 pounds gain in all the lots during the 1935 test. This may have been due, in part at least, to the lack of thrift of the lambs used for the 1935 test. The average market finish of lambs full-fed in dry lot and on pasture were practically the same in 1934, but in 1935 those fed in dry lot were considerably fatter than those fed on pasture.

SUMMARY

1. Late lambs given a full feed of grain and hay in dry lot, after weaning, gained more rapidly and reached a higher degree of finish than late lambs full fed grain on lespedeza and barley pasture or late lambs which grazed lespedeza and barley pasture and received no grain. However, late lambs full fed for a relatively short time in dry lot after an extended grazing season gained more rapidly when on full feed and acquired as high finish as the lambs full fed in dry lot in the fall.

2. Lambs full-fed grain and hay in dry lot gained 46% faster than lambs full-fed grain on pasture and 95% faster than those which had only pasture to eat. This more rapid gain on lambs for a period of 76 days in dry lot resulted in 12 pounds greater weight per head than was gotten on lambs full-fed grain on pasture and 18 pounds per head more weight than was made by lambs which consumed only pasture.

3. Lambs full fed grain and hay in dry lot after grazing all fall made 24% faster daily gain over a 40 day feeding period than lambs full-fed in dry lot for 76 days in early fall.

4. Lambs grazing on pasture alone made good gains and developed reasonably good market finish.

5. Unthriftiness and low quality in the lambs used in 1935 as compared with the lambs used in 1934 appears to have been partly responsible for the relatively large amounts of feed required to produce 100 pounds gain on lambs in 1935.

6. Feed lot performance of sheared lambs did not differ greatly from unshorn lambs.

EXPERIMENTS AT OTHER STATIONS

In 1927-1928-1929 King and Harper, at the Indiana Experiment Station fed grain to lambs nursing their mothers. Starting at a weight of 35 pounds and eating an average of .19 pounds grain daily for 79 days the lambs reached a market weight of 82.9 pounds and sold for $13.83 per cwt. Similar lambs receiving no grain but otherwise treated the same made practically the same gain and sold at about the same price. They conclude that good pastures and liberally milking ewes produce market lambs at less cost when no grain is fed the lambs.

Since the grain consumption was light and there was question as to the desirability of the protein, more work was done in 1930.

This work included four lots of lambs running on pasture with, and suckling their dams, three of the lots getting grain. The lambs gained from .5 pounds to .65 pounds daily and sold for $10.00 to $10.25 per cwt. Results indicated no significant difference in rate of gain or selling price between the lambs fed grain and those which received no grain. Lambs which did not receive grain made the cheapest gain while those fed shelled corn ranked next in economy of production. Increasing the protein in the ration increased the rate of gain in one case but not in the other, and cost of gains increased with the increase of protein in the ration. Lambs finished on rations relatively high in protein sold slightly higher than the others but not enough to offset the increased cost of gain.

At the Mississippi Experiment Station, lambs nursing their mothers on pasture and fed grain from about 3 months of age until marketed, dressed slightly higher and sold at somewhat higher price than similar lambs that had no grain. Daily gains were about the same.

Experiments at the Tennessee Experiment Station in 1932-33-34 with nursing lambs running on good pasture with their mothers showed little or no difference in gain, finish or price of lambs at marketing time. Daily gains were .55 to .6 pounds.

In 1930 and 1931 the Alabama Experiment Station fed grain to early spring lambs while they ran on pasture with, and nursed their mothers. No advantage resulted from the use of the grain.