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AGRICULTURAL EXPERIMENT STATION

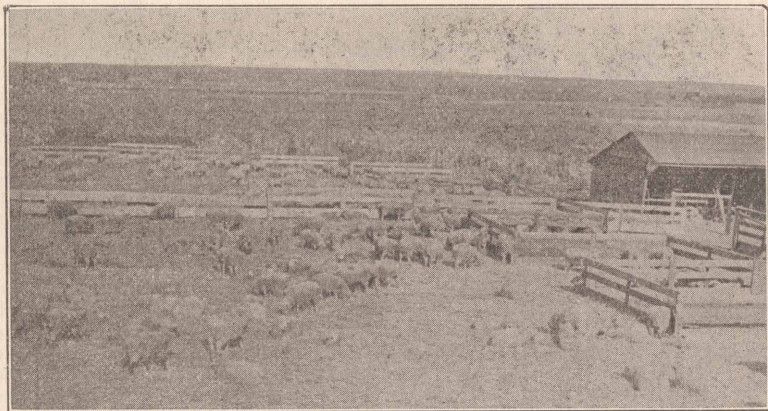
DEPARTMENT OF ANIMAL HUSBANDRY

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LAMB AND SHEEP FEEDING  
EXPERIMENTS

BY E. J. IDDINGS



General View of Caldwell Feeding Yards

BULLETIN NO. 89

MAY, 1916

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Published by the University of Idaho, Moscow





# LAMB AND SHEEP FEEDING EXPERIMENTS

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By E. J. Iddings

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## INTRODUCTORY

In Bulletin 77 of the Idaho Experiment Station there are reported the Caldwell lamb feeding experiments of 1910-11, and 1912-13. This bulletin is prepared to report lamb and sheep feeding work completed in 1914, consisting of an experiment in feeding 511 lambs and 223 ewes and wethers at Caldwell and a feeding test with 27 lambs at Moscow.

## ACKNOWLEDGMENTS

The lambs and ewes were selected for the work at Caldwell and later marketed by E. F. Rinehart, then field animal husbandman. The work was directed by Mr. Rinehart and the writer. The feeding there was done by C. B. Hampson, foreman of the sub-station farm at Caldwell. The work at Moscow was directed by the writer and the feeding done by G. A. Scott and S. J. Jensen, then senior students in animal husbandry.

## PURPOSE

The feeding work at Caldwell was initiated to secure further data regarding the fattening of sheep on alfalfa hay and locally grown grains. A special object was to secure data regarding the comparative feeding value of such grains as corn, barley and oats when fed in various combinations to different lots of sheep. The need of a market for a large quantity of alfalfa hay grown on the sub-station farm and the fact that good use could be made of the sheep manure were additional reasons for undertaking the work. The lambs were fed at Moscow to determine the relative efficiency in feeding lambs for market of different combinations of grain, when fed with the mixed hay commonly grown in Latah and neighboring counties.

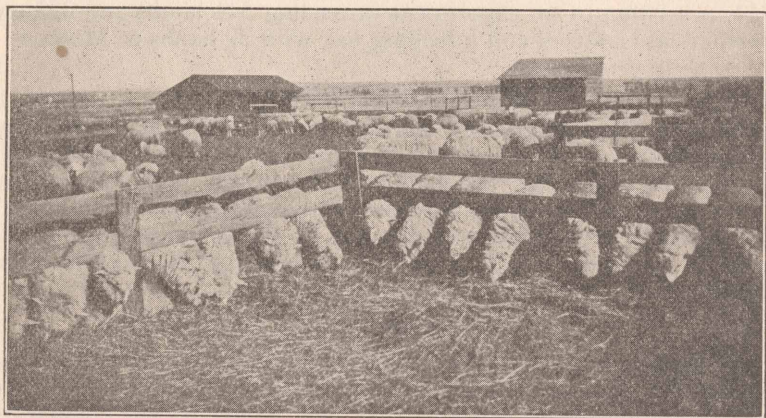
## CALDWELL EXPERIMENTS

### METHODS AND EQUIPMENT

The lambs of this feeding trial, as well as those in previous tests at Caldwell, were fed in the open without protection of any kind from the weather. A tight board fence built to keep out prevailing winds and storms in fall and early winter gave considerable protection from high winds and severe rain and snow storms.

In order to make clear to the prospective feeder the methods followed and equipment used these will be briefly outlined. The lambs

were kept in lots made of panels set "zig-zag" so that each pair of panels met at a right angle and the total number of panels used was so arranged as to form three separate yards. An extremely large feed lot is not desirable since, when the space is sufficient to encourage it, the lambs gather in groups and do considerable running and playing, thereby getting too much exercise for most economical feeding. The general rule used is to provide approximately one foot of outside panel space per head of lambs in the enclosure. And in providing this space the "zig-zagging" of the panels should be such as to make the yard as small as possible while still providing the amount of linear space mentioned.



Showing method of feeding hay to lambs

The hay was fed on the outside of the panels, the lambs reaching through the lower openings in the panel to obtain it. In good weather hay for two to five days feeding can be arranged in shocks at convenient intervals around the enclosure. From these piles the lambs are provided with fresh hay morning and night. At noon no new supply is given, but that left from the morning feeding is turned, enabling the lambs to get the desirable portions beyond reach or covered up. Stems refused or hay spoiled in the stack or made unpalatable by rain or snow should be removed each four to ten days.

The panels or hurdles that are used for enclosing the Caldwell Station feed yards are fourteen feet long and three feet one inch in height. Ready cut material for making each panel is as follows:

- 1 piece of 1x12<sub>8</sub>, 14 feet long
- 2 pieces of 1x6, 14 feet long
- 3 pieces of 1x6, 3½ feet long
- 25 to 30 6d nails.



This provides for three horizontal boards, and a vertical binding slat at each end and one in the middle of the panel. The 1x12 is used for the bottom horizontal board; the vertical slats should be extended five inches below it. In erecting the panels into a fence these 5-inch lengths are sunk into the ground to make the enclosure more firm. Above the 1x12 is an eight-inch space through which the lambs reach in eating hay, and then in turn are a 1x6, a five-inch space and another 1x6, making the total height of hurdle before mentioned.

The three enclosures mentioned above were made contiguous. On the dividing lines were placed water troughs fourteen feet long and salt troughs fourteen feet long. Two lots used the same troughs for water and salt.

Grain was fed in a small separate enclosure into which each of the three groups of lambs could be turned by opening a gate-panel arranged conveniently for the purpose. By feeding each lot in turn, one small enclosure and a minimum number of troughs were made to serve the three bunches of lambs.

The trough for feeding grain that has been used at Caldwell is fourteen feet long, one foot wide and four inches deep. It is carried on a frame consisting of a 2x4 fourteen feet long over the trough, supported at each end by a V made of two 2x4s each two and one-half feet long. Each V is kept from spreading and each end of the trough carried by a 2x4 nailed horizontally between the 2x4s making the V.

It is important that the trough swing free on a bolt or spike at each end. This permits the trough to be turned over after each time of feeding to empty out the refuse matter from the feed and to protect the trough during the interval between feeding periods from rain, dust, or snow. Lambs do much better if given hay, grain, and drinking water in the cleanest manner possible. A bill of material of various sizes and length to build a grain-feeding trough of size to accommodate twenty lambs, follows:

- 1 piece of 2x4, 14 feet long
- 4 pieces of 2x4, 2½ feet long
- 2 pieces of 2x4, 10 inches long
- 1 piece of 1½x12, 14 feet long
- 2 pieces of 1x4, 14 feet long
- 2 pieces of 1x4, 14 inches long
- 2 bolts ¾x6.

The enclosures should be bedded with straw when the lambs are put in and fresh straw supplied as often as necessary to keep the lambs clean and dry. At the end of from 90 to 120 days, this straw and the droppings will be found to make a compact covering for the entire yard space of from six to ten inches of very rich manure. The panels should be removed and piled up after each year's feeding. This makes it more convenient to remove the manure, helps preserve the hurdles, and enables the space to be used for the greater portion of the year for other purposes.

**SELECTION OF SHEEP AND RATIONS FED**

The feeding work at Caldwell was with 511 head of lambs, 203 old ewes and 20 wethers. The ewes and wethers were Rambouillets. The lambs were of mixed breeding with Cotswold blood prominent. The ewes, wethers and 311 lambs were bought of Andrew Little at Emmett and 200 lambs were bought of E. Short of Payette. The ewes and wethers were thrifty and of good size. Good mouths prevailed. The lambs had been dropped late and many of them were evidently twins, orphans, and others cut back from summer and early fall shipments.

The ewes and wethers averaged 82 pounds when purchased and delivered at the sub-station farm Nov. 23rd. They were given a feed lot and were fed cut mixed grain hay and whole alfalfa. A self-feeder was constructed for feeding the cut hay. The alfalfa was offered on the outside of the panels that made the enclosure and the sheep secured it by reaching through the panels. Jan. 20th oats were offered in the troughs and a few days later the grain ration was increased in amount and changed from oats to a mixed ration consisting of one-third barley, one-third wheat and one-third corn, all ground. These sheep took on high finish reaching market at an average weight of 101.1 pounds. Details as to feed consumed, and grains made are found in table I below.

The Little lambs averaged 51.5 pounds and the Short lambs 48.75 pounds. After a preliminary period on alfalfa and other meadow pasture all were weighed and placed in a feed lot. Hay was fed on the outside of the panels used in making the enclosure as in previous work at Caldwell. Adequate provisions were made for each lot reaching a separate enclosure where grain was fed. The lambs were divided as evenly as possible into three bands, each kept and fed in a separate lot.



Showing three lots of lambs used in experiments completed in 1914



Lot 1 was fed whole alfalfa hay and a grain ration made up of one-fourth corn and three-fourths barley. The lambs in this lot were started on a grain at the rate of one-eighth pound per head daily and were gradually led up to one and one-half pounds per head daily, which was the approximate full feed for a lamb in each of the three lots. The grains for these three lots were grown on the farm or purchased locally. The corn was grown on the station farm. The lambs in lot 1, averaged 57.2 pounds, when placed in the feed lot and came out weighing 87.3 pounds, having gained 30.1 pounds in 109 days.

There is a feeling among feeders that with alfalfa hay at \$5.00 to \$8.00 per ton the hay should enter largely into economical lamb feeding and should be fed alone from four to eight weeks. The lambs in lot two were selected to secure data as to the advisability of this practice. They were fed alfalfa alone for one month of the entire period and then were given a grain ration made up largely of barley but consisting in addition of varying amounts of corn and oats. The grain ration averaged 60 per cent barley, 33 per cent corn, and 7 per cent oats. These lambs went into the feed lot averaging 59.3 pounds and came out averaging 85.4 pounds having gained 26.1 pounds per head in 109 days.

The lambs in lot 3, were fed alfalfa hay and grain from the start, as in lot 1. For 25 days the grain consisted of one-fourth oats, and three-fourths barley, and thereafter of straight barley. They weighed in at an average of 57.8 pounds and out at 88.4 pounds, having gained 30.6 pounds per head in 109 days.

The experiment was closed and both sheep and lambs sold to the Union Meat Company of Portland, Oregon, April 1, 1914. The ewes and wethers sold at \$5.50 and the lambs at \$7.25, the former exceeding and the latter equalling the highest price of the year up to that time. Scale of feed prices, table 1, giving summarized data regarding weights, gains, amount and kinds of feed consumed, and cost of grain and financial statement follow:

#### FEED PRICES

Alfalfa hay whole .....	\$5.00	per ton		
Alfalfa hay cut .....	6.00	"	"	
Mixed grain hay cut .....	6.00	"	"	
Barley whole .....	1.00	per hundred weight		
Barley ground .....	1.10	"	"	"
Oats whole .....	1.00	"	"	"
Oats ground .....	1.10	"	"	"
Corn whole .....	1.40	"	"	"
Corn cracked .....	1.50	"	"	"
Wheat ground .....	1.20	"	"	"

**TABLE 1**  
**SHEEP FEEDING OF 1913-14**  
**Summarized Results**

	220 Ewes and Wethers	Lot 1—167 Lambs	Lot 2—171 Lambs	Lot 3—169 Lambs
Information Column	Fed—Mixed grain hay cut; alfalfa hay whole; grain ration— $33\frac{1}{2}\%$ wheat; $33\frac{1}{2}\%$ barley; and $33\frac{1}{2}\%$ corn.	Fed—Alfalfa hay at pleasure and $75\%$ corn.	Fed—Alfalfa hay alone for one month; thereafter alfalfa at pleasure and a grain ration of $60\%$ barley, and $33\%$ corn and $7\%$ oats.	Fed—Alfalfa hay at pleasure, and $75\%$ barley and $25\%$ oats for 25 days; thereafter alfalfa hay and barley.
	Wt. in lbs.	Wt. in lbs.	Wt. in lbs.	Wt. in lbs.
Total weight, Dec. 12 . . . . .	* 18039	9550	10138	9762
Average weight, Dec. 12 . . . . .	* 81.9	57.2	59.3	57.8
Total weight, April 1 . . . . .	22015	14580	14600	14935
Average weight, April 1 . . . . .	100.1	87.3	85.4	88.4
Total gain . . . . .	3972	5030	4462	5173
Gain per head . . . . .	18.2	30.1	26.1	30.6
Days fed . . . . .	128	109	109	109
Average daily gain . . . . .	0.14	0.28	0.24	0.28
Barley fed . . . . .	3588	14895	9475	19780
Wheat fed . . . . .	3588	.....	.....	.....
Oats fed . . . . .	.....	.....	1157	325
Corn fed . . . . .	3588	5000	5268	.....
Whole alfalfa fed . . . . .	10623	35915	32262	34995
Cut alfalfa fed . . . . .	16585	.....	.....	.....
Mixed hay fed whole . . . . .	4020	.....	.....	.....
Mixed hay fed cut . . . . .	40440	.....	.....	.....
Total grain fed . . . . .	10764	19895	15900	20105
Total hay fed . . . . .	71668	35915	32262	34995
Grain for 100 lbs. gain . . . . .	271	395	356	388
Hay for 100 lbs. gain . . . . .	1802	714	723	676
Cost of grain fed . . . . .	\$136.34	\$218.95	\$180.07	\$201.05
Cost of hay fed . . . . .	\$207.70	\$ 89.78	\$ 80.65	\$ 87.48
Cost of each 100 lbs. gain . . . . .	\$ 8.62	\$ 6.14	\$ 5.85	\$ 5.58

\* Initial weights for the ewes were taken on November 23.

**FINANCIAL STATEMENT**

	Ewes and Wethers	Lot 1 Lambs	Lot 2 Lambs	Lot 3 Lambs
Receipts—Ewes at \$5.50 per cwt. and lambs at \$7.25 per cwt. . . . .	\$1116.31	\$ 920.83	\$ 922.09	\$ 943.25
Expenditure — purchase price, sheep, hay, grain, miscellaneous supplies and expenses . . . . .	1061.89	806.84	787.49	797.70
Cost additional equipment . . . . .	37.10	14.70	14.70	14.80
Net profit after deducting all expenses . . . . .	13.72	99.29	119.90	130.74
Net profit per head . . . . .	.08	.59	.70	.77
Sale price of hay per ton after deducting all expenses . . . . .	6.40	10.53	12.42	12.47
Sale price of hay per ton charging equipment to permanent improvement . . . . .	7.43	11.34	13.34	13.32



### DRESSING PERCENTAGE

The Union Meat Company of Portland killed 99 of the lambs, taking weights off cars as live weight. The yield was 47.2 per cent. The pelts weighed 15 pounds each and each lamb carried 2 pounds of caul fat.

A record of carcass weights was taken with the ewes and wethers giving a yield of 44.7 per cent, with 18 pounds pelts and 4 pounds of caul fat. Live weight as with the lambs was off cars.

### FILL

The sheep and lambs were sold on the basis of off-car weights. For securing information on this particular problem test was made at Portland to ascertain the fill under usual conditions. They were weighed off the cars Sunday afternoon, April 5th. Hay and water were kept before them continually until Monday at 11 a. m. Weights were taken at that time. Four hundred and six head of the lambs ate 890 pounds of hay and gained 1050 pounds. Two hundred and seventeen head of sheep ate 230 pounds of hay and gained 480 pounds. Figuring the gains on the sheep and lambs at market prices and the hay at the stock yards price of \$30.00 per ton the profit from the fill on the lambs would have been \$62.77 and on the sheep \$22.95 making a total profit from the fill of \$85.72. The approximate profit per head from the fill would have been 14 cents.

### RESULTS

The sheep and lambs consumed practically all the product of the station farm and furnished an excellent market for the same. The ewes and wethers were more effective in making use of roughage, such as mixed hay, made up of cereals, and legumes and first cutting alfalfa. They failed, however, to make adequate increase in weight and take on proper finish until offered grain in addition to the roughage. Good results were had late in the feeding period, when the supply of mixed hay was exhausted, by cutting a part of the alfalfa allowance and offering it in the self-feeder. Old ewes offer the feeder advantages especially when plenty of roughage is available for the earlier days of feeding but must be bought well, and there must not be too large a percentage of badly broken mouths or the margin of possible profit is narrow.

As before indicated, the lambs when sold topped the market, but the purchaser complained of 10 per cent of thin ones. This was evidently due to the fact that the lambs did not average the best of feeders in the beginning.

Lot 1 gave medium returns only, the entire showing of this lot ranking lower than that of the other two. The results with lot 2 were most interesting. These lambs started, due to the accident of sorting, 2.1 pounds heavier than the lambs in lot 1, and 1.5 pounds heavier than the lambs in lot 3. They were given all the hay they would clean up, but no grain, and in 29 days of hay-alone-feeding, gained but 0.4 pounds per head, the amount that lambs in other lots eating grain and hay gained in less than two days. During this hay feeding period, however, they

seemed to develop assimilative power, inasmuch as they made much more rapid gain in the period immediately following. This lot came second from the point of view of economy of gain, producing each 100 pounds at a cost of \$5.85 per hundredweight as compared with \$5.58 in lot three.

To lot 2 corn and oats were fed to supplement the barley. Approximately one-third of the ration consisted of corn. Comparing lot 2 with lot 1, fed barley three-fourths and corn one-fourth, the gains in lot 2 were cheaper, each 100 pounds costing \$5.85 as compared with \$6.14 in lot 1. The lambs in lot 3 were fed oats and barley early in the period and later barley alone. Here the gains were a little more rapid than in the other lots. The cost of feeding lot 3 was quite a bit less, due to using barley at \$1.00 per hundredweight and oats at \$1.00, as compared with corn introduced into the ration in lots 1 and 2 at \$1.40 per hundredweight.

### CONCLUSIONS

No. 1. Old ewes offer the farmer and feeder a good means of disposing of farm feeds, but must be bought reasonably, and need quite a bit of grain for proper finishings.

2. Barley alone fed whole is highly efficient as a grain in fleshing lambs for market as the results from lot 3 indicate.

3. An introductory period of feeding with hay alone resulted in very small gain but seemed to prepare for very efficient gains later, when grain was introduced into the ration. The corn used in feeding lot 2 cost two-fifths of a cent more per pound than the grains used with lot three. If equally good results could have been had with lot 2 by using additional barley to replace the corn, a result indicated by gains in lot 3, the cost of gain would have been reduced sufficiently to make lot 2 the most efficiently fed of the three lots. Could an equal amount of barley have replaced 5268 pounds of corn fed lot 2, the gains there would have cost \$5.37 per hundredweight, as compared with \$5.58 in lot 3, and \$6.14 in lot 1. This is evidence in justification of the initial hay-alone-feeding period.

4. As indicated in bulletin 77, our local feeds are used with economy and produce high finish in fattening lambs. The results have been particularly good from using alfalfa hay and barley.

5. The use of corn costing 40 per cent more than barley is not justified in lamb feeding when used as a 25 per cent supplement to the barley made the basis of the ration. Judging from lots 1 and 3, fed the same, except that lot one received one pound of corn to three of barley, while lot 3 was fed straight barley except for 325 pounds of oats fed during the first 25 days, corn is scarcely equal to barley in lamb feeding. Lot 3 required 7 pounds less grain and 38 pounds less hay for each 100 pounds of gain compared with lot 1. One hundred pounds of gain in lot 1 cost \$6.14 as compared with \$5.58 in lot 3, an increase of 10 per cent in cost of gain with lot 1 over lot 3, and with the principal difference in feeding consisting in the substitution of one pound in four of corn to replace barley.



### MOSCOW EXPERIMENT

This work was with farm-grown lambs secured through the Hagan and Cushing Company of Moscow. The greater portion of the farmer's lamb crop comes to market without having received grain. This experiment was undertaken to determine the feasibility of giving such lambs a grain finish, since grain-fed lambs yield the packer and consumer more mutton of higher quality, as compared with the practice of sending the lamb direct from grass to slaughter. A further object of the experiment was to determine the comparative values of various nitrogenous concentrates as supplements to a basic cereal such as barley in lamb feeding.

The lambs, 27 head in all, were well bred, 22 of them showing marked evidence of Lincoln blood and 5 were close-wooled with Rambouillet characteristics predominating. All were lambs of large frame, averaging 101 pounds when started on grain. There was quite a variation in size and for that reason the lots were not even in average weight.

The experiment was carried on under the direction of the Animal Husbandry department as before indicated thru Messrs. Scott and Jensen. The feeding tests extended from November 22nd, 1913, to January 16, 1914, using buildings on the Latah County fair grounds for shelter. Barley and mixed hay formed the basis of the ration. An additional concentrate was used for each lot of nine lambs. The rations for the three lots are indicated below:

- Lot 1. Mixed hay at pleasure, barley 3 parts, field peas 1 part.
- Lot 2. Mixed hay at pleasure, barley 3 parts, bran 1 part.
- Lot 3. Mixed hay at pleasure, barley 3 parts, oil cake 1 part.

Feed costs were as follows: Hay \$8.00 per ton, barley \$1.20 per hundredweight, bran \$1.00 per hundredweight, oil cake of pea size \$2.10 per hundredweight, and field peas \$1.50 per hundredweight.

Table 2, giving results in detail and financial statement follows:

**TABLE 2.**  
**LAMB FEEDING AT MOSCOW**  
**Summarized Results**

Information Column	Lot 1—fed barley 3 parts peas 1 part	Lot 2—fed barley 3 parts bran 1 part	Lot 3—fed barley 3 parts oil cake 1 part
	Wt. in lbs.	Wt. in lbs.	Wt. in lbs.
Total weight, beginning .....	938	919	872
Average weight, beginning .....	104.2	102.1	96.8
Total final weight .....	1077	1055	1028
Average final weight .....	119.7	117.2	114.3
Total gains .....	139.0	136.0	156.0
Average gain per lamb .....	15.5	15.1	17.5
Days fed .....	55	55	55
Average daily gain per lamb .....	.281	.274	.318
Total barley fed .....	541	521	546
Total peas fed .....	166	...	...
Total bran fed .....	...	165	...
Total oil cake fed .....	...	...	170
Total hay fed .....	907	873	868
Grain for 100 lbs. gain .....	508.6	504.4	458.9
Hay for 100 lbs. gain .....	652.6	641.1	556.4
Cost of grain .....	\$ 8.98	\$ 8.07	\$10.12
Cost of hay .....	\$ 3.63	\$ 3.49	\$ 3.47
Total cost of feed .....	\$12.61	\$11.56	\$13.59
Cost of 100 lbs. gain .....	\$ 9.07	\$ 8.50	\$ 8.71

**FINANCIAL STATEMENT**

	Lot 1	Lot 2	Lot 3	Total
Cost of lambs at 5c per lb. ....	\$46.90	\$45.95	\$43.60	\$136.45
Cost of feed—Preliminary period ....	1.50	1.39	1.46	4.35
Cost of feed—Experiment proper ....	12.61	11.56	13.59	37.76
<b>TOTAL COST</b> .....	<b>\$61.01</b>	<b>\$58.90</b>	<b>\$58.65</b>	<b>\$178.56</b>
Sold @ 6c per pound .....	64.62	63.30	61.68	189.60
Profit .....	\$ 3.61	\$ 4.40	\$ 3.03	\$ 11.04
Average profit per head .....	\$ 0.40	\$ 0.49	\$ 0.34	\$ 0.41

As before indicated the hay was mixed. Alsike and red clover made up a part of the mixture, but overly ripe timothy predominated. As a result the lambs did not take readily to the hay and there was much waste. Another result of the kind of hay fed seemed to be a heavy grain consumption and rather high cost of gains as compared with lamb feeding where a palatable legume like alfalfa is used for roughage.

During the last eight days of the feeding period alfalfa hay was fed and eagerly consumed by the lambs with but little waste. It will be noted that the cost of gains was high in comparison with the costs at Caldwell. The cost of 100 pounds of gain at Caldwell, averaging the three lots, was \$5.86, as compared with \$8.76, averaging the costs of 100 pounds of gain on the three lots at Moscow, an increase at Moscow of 40%. The hay was certainly a factor. The grains fed at Moscow were ground or rolled, probably without compensating economy since the lamb grinds his own feed well. The nitrogenous supplements used, with the exception of bran, were expensive, the pea size oil meal costing \$2.10 per hundredweight, and the field peas costing \$1.50.



The heaviest gains and the gains second in point of economy were made by the lot fed the oil cake. The oil cake and barley made a combination well adapted to the production of rapid gain and high finish. The bran-fed lot made slower gain but due to low cost of bran, \$1.00 per hundredweight, made a good showing from the point of view of economy. In the financial statement it will be noted that the lambs made a reasonable profit in each lot with a spread of one cent between the buying and selling price. A spread of this amount, and proportionately more as transportation and selling charges increase, is necessary to insure success in lamb feeding operations, either on a small or a large scale.

Interesting results were found when dressing percentages were determined as follows:

	Lot 1	Lot 2	Lot 3
Live weight 7 lambs after 24 hours shrink .....	842	828	780
Carcasses 7 lambs .....	411	386	377
Dressing percentage .....	48.8	46.6	48.3

It will be noted that the bran-fed lot did not dress out favorably as compared with the others and the carcasses from these lambs carried less fat. The pea-fed lambs dressed one-half per cent higher than those fed oil cake. Upon slaughter 21 of the lambs showed parasitical infection with sheep tape work in the cyst stage, or *cysticercus ovis*. This is an unusually high percentage of infection for sheep grown under western conditions and was no doubt a factor in increasing the cost of gain.

#### CONCLUSIONS

1. In using nitrogenous supplements to grains in fattening lambs a concentrated feed such as oil cake results in more rapid gain, and higher finish and dressing percentage in comparison with a bulky supplement like bran.
2. Mixed hay with timothy and other grasses prominent in the mixture is not eaten readily and results in waste and high cost of feeding when used in fleshing lambs for market.
3. Even in so short a period as 55 days the grain mixture used has a direct and pronounced effect on the amount of fat produced and on dressing percentage.
4. Farm-grown lambs can ordinarily be profitably fed mixed hay and grain in finishing them for market on the basis of one cent per pound increase in price for grain finish as compared with grass fed animals.

#### SUGGESTIONS TO THOSE PLANNING TO FEED RANGE LAMBS

- I. The feed lot and plan of equipment should be definitely decided upon before lambs are purchased. The site should be well drained with a southern exposure if possible. A sandy area is best. The cheapest equipment is such as is outlined in the earlier pages of this bulletin. Self-feeders for hay will pay for themselves in from two to three years, and are especially to be desired with alfalfa hay at from \$8.00 to \$10.00 per ton, a common price during early spring this year. The self-feeders are

made to accommodate four lambs per each linear foot, two on each side of the feeder, and the cost of the feeder used at Caldwell was approximately \$ .80 per linear foot.

- II. It doesn't pay to buy a poor bunch of lambs simply because they can be secured at a low figure. Your feeders should be thrifty, having evidence of good breeding and should be as uniform as possible. Thrift makes for rapid economical gains. Uniformity has a real value when the lambs are sold on the city market.
- III. Lambs well bought are generally profitably sold. One should not permit himself to be stampeded by the eagerness of others and as a result pay more for lambs than good judgment dictates if the investment is to become a profitable one from a feeding standpoint. A good rule is to buy at a reasonable price and plan on the basis of selling with a spread of at least one and one-half cents per pound between the buying and the selling price, depending on distance to markets and other factors.
- IV. Alfalfa hay and grain should be provided in sufficient quantities to take care of lambs for a 90 to 110 day period. There will be needed from ten to fourteen tons of alfalfa hay and from four to six tons of grain for each one hundred lambs fed. Barley has been found to be our most satisfactory grain, all things considered, for use in feeding in Idaho. Alfalfa hay alone can be fed for a short period, but our experience advises against an attempt to finish lambs for the market on alfalfa hay alone.
- V. Lambs can be used to clean up the aftermath from hay fields. This method of feeding must be used carefully, however, since there is much danger of bloat and must not be depended upon too strongly since weather conditions often prevent grazing on meadows and other fall pastures to any great degree.
- VI. Feeder lambs should be neither heavy nor light. Below fifty pounds indicates lack of thrift and that the lambs have for some reason not done well. Lambs seventy pounds and above are too heavy for market demands after a one hundred day feeding period. The 55 lb. average is most satisfactory.
- VII. Range lambs have never tasted grain and some will not eat it for many days. For the reason that some of the lambs hold back permitting others to get more than their share and that the lambs are easily foundered the grain must be given sparingly at first. The Idaho Station's practice is to start with one-eighth pound per head daily and gradually increase the allowance, taking from six to eight weeks to reach the full feed of one and one-half pounds daily.
- VIII. Pure water should be before the lambs at all times and salt should be provided for them. The feeder must watch the lambs closely. They will respond closely to the interest and intelligent oversight of a careful feeder.



## AVAILABLE PUBLICATIONS

The following Publications may be obtained, without cost, by addressing the Agricultural Experiment Station, Moscow, Idaho:

### Bulletins

60. Conditions Affecting the Production of Denatured Alcohol in the Northwest.
65. Alaska Wheat Investigations.
72. A Report on the Milling Properties of Idaho Wheat.
73. A Study of Idaho Butter with Suggestions for Improvement.
75. Composition of Irrigated and Non-Irrigated Fruits.
76. Tomato Culture in Idaho.
77. Lamb Feeding and Sheep Husbandry in Idaho.
78. Irrigation Practice.
79. Potato Culture.
81. Soils of the Cut and Burned-Over Areas of North Idaho.
84. The Annual Report of the Experiment Station for year Ending June 30, 1915.
85. The Use of Lime-Sulphur as a Summer Spray for Apple Scab.
86. Some Poisonous Plants of Idaho.
87. Insect Pests of the Orchards and Gardens of Idaho, and their Control.
88. The Milling Values of Dry-Farmed and Irrigated Wheat.
89. Sheep and Lamb Feeding Experiments.

### Circulars

- No. 1, Spray Calendar.
- No. 2, Field Peas.
- No. 3, Feeding for Egg Production.

The list below may be obtained, also without cost, by addressing the Department of Agricultural Extension, Boise, Idaho:

### Bulletins

3. Measurement of Irrigation Waters.
5. Hog Cholera in Idaho.
6. Rural School Lunches.
7. The Alfalfa Weevil.
8. Directory of Idaho Pure-Bred Breeders.
9. The County Agriculturist Movement.
10. Batters and Doughs.
11. Third Year Sewing-Girls' Club Work.
12. Instructions for Canning Fruits and Vegetables.
13. First Year Sewing-Girls' Club Work.
14. First Year Cooking—"Bread."
15. General Club Announcement.
16. Meat.

### Circulars

1. Weeding Out Poor Orchard Varieties.
10. Home Economics Schools.
11. Farmers' Schools.
14. How to Keep Fowls Healthy.
15. Fitting Fowls for Exhibition.

### Idaho Farm Hints

20. Help Fight Hog Cholera.
21. Warning. Look Out for Potato Diseases.