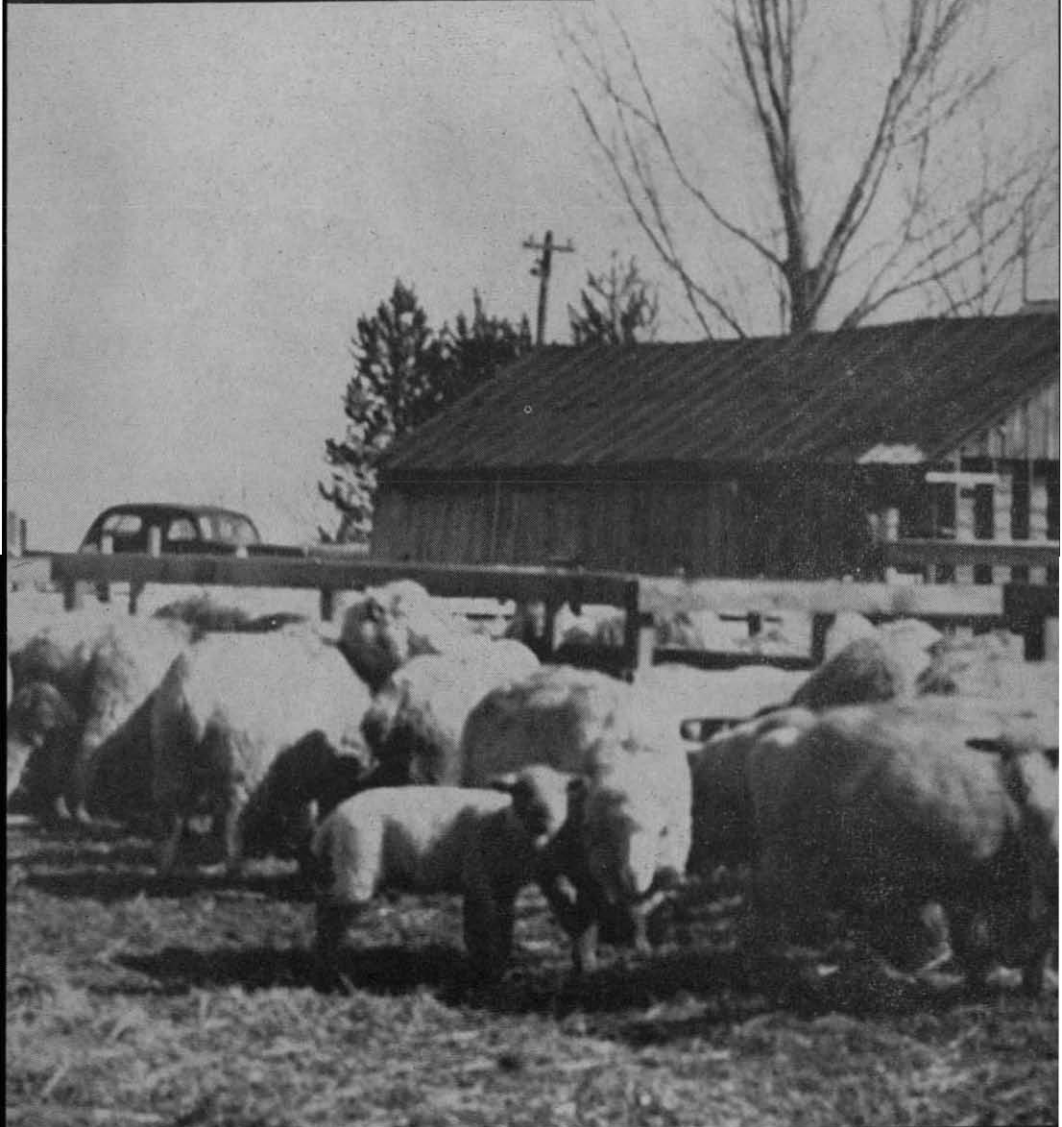


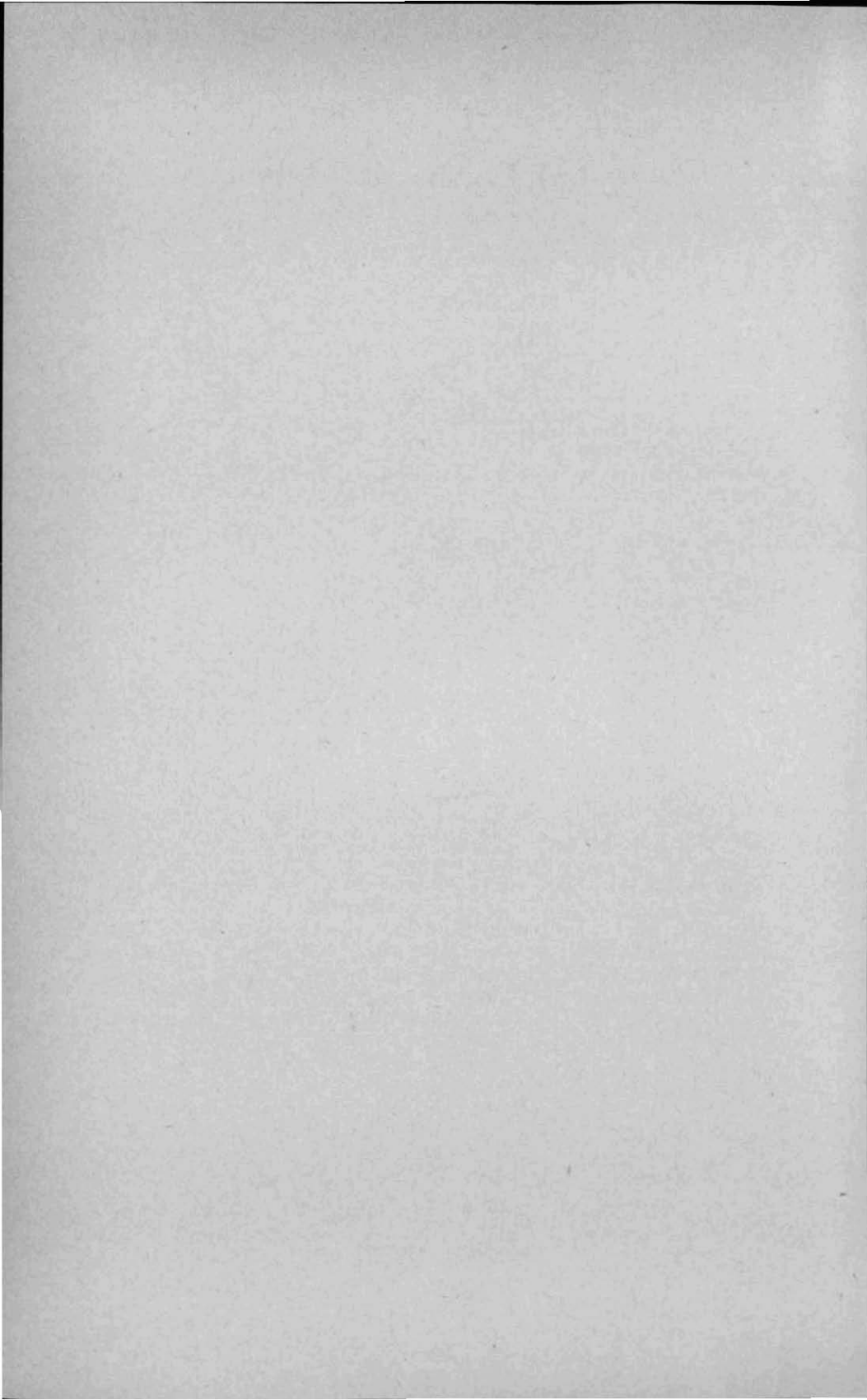
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Early Spring Lamb Production on Irrigated Farms of Idaho



University of Idaho Agricultural Experiment Station



Early Spring Lamb Production On Irrigated Farms of Idaho

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INTRODUCTION

The production of early spring lambs is of considerable importance on many irrigated farms of southern Idaho. While lamb production does not represent a major part of the farm income, it does provide an important sideline. The number of ewes in farm flocks usually runs from 40 to 100 head. Except for purebred flocks, most of the farm lambs raised in southern Idaho are the offspring of whitefaced or crossbred type ewes mated to either a Hampshire or a Suffolk ram. The entire lamb crop goes to market and the grower buys ewe replacements from whiteface breeders. Farmers occasionally breed all or part of their ewes to a crossbred ram of Panama or Columbia breeding to raise their own replacements.

In addition to providing a market for home-grown feeds, farm sheep help to make use of several by-products such as cull potatoes, alfalfa and clover chaff, cull beans, and beet tops. Sheep are quite useful in cleaning up fence rows and ditchbanks. Many farmers like to pasture or "sheep off" clover and alfalfa fields intended for seed production. Such pasturing usually ends about June 1 to 15.

Most Idaho farm lambs are born in January or February and reach market before July 1. Several factors favor the production of early lambs. More farm labor is available during the early lambing season; there is a favorable market for lambs before the big run of range lambs; and the lambs make better gains while the weather is cool. And it is frequently true that pasture conditions on many farms are more favorable before the first of July.

Since the early 1930's, a flock of some 130 crossbred ewes has been maintained on the Aberdeen Branch Agricultural Experiment Station farm for the purpose of studying methods of producing early spring lambs. They have been large, thrifty ewes, averaging 160 to 170 pounds live weight. The ewes are generally bred to Hampshire or Suffolk rams so as to lamb in January or February. Occasionally some of the better ewes are bred to a Panama ram to raise replacements. In 1947 they were bred to lamb in December, instead of January and February, 1948.

After the lambs are marketed the ewes are normally pastured on ditch banks and on a low, wet, alkaline pasture, unfit for farming. Following the crop harvest the ewes run on aftermath and stubble fields until shortly before lambing. From then until lamb-

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Most early farm lambs in southern Idaho are the result of crossing either Hampshire or Suffolk rams on crossbred white-faced ewes. At weaning time these lambs will leave the dry lot for an early market.

ing time they feed on alfalfa hay or alfalfa hay and clover chaff in about equal amounts, and usually have a small allowance of barley or oats during this period.

Animal husbandmen have studied two phases of early lamb production at Aberdeen. One phase dealt with rations for ewes during the lactation period. The second phase was concerned with creep-feeding rations and pastures for lambs through the suckling period. During the first part of the second phase, the scientists compared several different creep-feed rations. During the second part, the performance of lambs continued in dry lot was compared to that of lambs turned out to graze when pasture became available in the spring. Results were measured in terms of gains in lamb weights, feed requirements, wool production, and in the maintenance of the ewes in a vigorous, thrifty condition. Workers made every effort to have the lots as nearly alike as possible in all respects except for the factor being studied. This applied to number of twins and performance of lambs previous to the beginning of the experimental period. Oats and barley were fed whole. Lambs were full-fed on the rations offered. The ewes were given all the roughage they would eat, but other feeds in the rations were fed only in limited amounts.

As is the common practice of early lamb producers in southern Idaho, the third, or last cutting, of alfalfa hay was reserved for the lambs. The last cutting usually has finer stems and a higher percentage of leaves, and this makes an excellent feed for lambs. Some farmers have difficulty with bloat when ewes feed on the

leafy third cutting, but few producers have reported such trouble with spring lambs.

Rations for Ewes During the Lactation Period

During this phase of the experiment the lambs were creep-fed until the pasture season and had all the alfalfa hay and grain (either barley or oats) they would eat.

The ewes were bred to lamb in January, 1936. After lambing they were divided into 3 comparable lots. The ewe rations for the lots were: Lot I, alfalfa hay and barley; Lot II, alfalfa hay and oats; and Lot III, alfalfa hay ($\frac{1}{2}$), clover chaff ($\frac{1}{2}$) and oats. The ewes were continued on this ration until they went to pasture on April 24.

Table 1. A comparison of alfalfa hay and barley, alfalfa hay and oats, and alfalfa hay ($\frac{1}{2}$), clover chaff ($\frac{1}{2}$) and oats as rations for lactating ewes, 1936.

	Lot I	Lot II	Lot III
	Alfalfa and barley	Alfalfa and oats	Alfalfa, clover chaff and oats
No. days on test (March 11-Apr. 24)	41	41	41
No. ewes	33	33	33
Av. total gain per ewe, lb.	4.4	-0.2	-3.1
Av. wool production per ewe, lb.	10.7	11.3	11.8
Av. daily feed per ewe (including waste), lb.:			
Alfalfa hay	6.52	6.59	3.09
Clover chaff	.....	.....	3.88
Barley	.70	.....	.....
Oats	.....	.69	.66
Percent feed wasted:			
Alfalfa	9.2	8.7	12.5
Clover chaff	.....	.....	13.3
No. lambs	45	42	43
Av. daily gain for lamb (birth to April 24), lb.	.559	.566	.552
Av. daily feed eaten per lamb, lb.:			
Alfalfa hay	.95	.96	1.06
Barley	.27	.26	.25

The results of this experiment are given in Table 1. There was very little difference in the average daily gain made by the lambs in the different lots. The ewes in Lot I made a small gain, those in Lot II just about held their own, while those in Lot III (receiving clover chaff as part of the roughage) lost an average of 3.1 lb. per head during the feeding period. The results indicate that either oats or barley is satisfactory as a grain supplement for lactating ewes and that clover chaff may be used as part of the roughage.

In 1944 the ewes and lambs were divided into 2 lots after lambing. The ewes in both lots were fed 2 lb. of potatoes per head daily and all the alfalfa hay they wanted. In addition, the ewes in Lot I received approximately 1 lb. of oats per head daily while those in Lot II were given about one-half this amount of oats.

Table 2 shows that there was very little difference in the results

from these two ewe rations. Similar results were obtained during 1943. These studies indicate that lactating ewes in thrifty condition will do about as well on $\frac{1}{2}$ lb. of oats as on 1 lb., when receiving a small amount of cull potatoes and all the good alfalfa hay they will eat.

Table 2. One lb. and $\frac{1}{2}$ lb. of oats compared as a supplement to a ration of alfalfa hay and cull potatoes for ewes during lactation, 1944.

	Lot I	Lot II
	Alfalfa hay, potatoes and 1 lb. oats	Alfalfa hay, potatoes and $\frac{1}{2}$ lb. oats
No. days on trial (Feb. 1-May 3)	92	92
No. ewes	46	46
Av. total gain per ewe, lb.	-2.0	0.0
Av. wool production per ewe, lb.	12.5	11.9
Av. daily feed per ewe (including waste), lb.:		
Alfalfa hay	6.27	6.15
Potatoes	2.00	2.00
Oats	1.08	.51
Percent feed wasted:		
Alfalfa hay	6.3	6.1
No. lambs	63	62
Av. daily gain per lamb, lb.	.669	.680
Av. daily feed eaten per lamb, lb.:		
Alfalfa hay	1.31	1.59
Oats	.67	.62

Three lots of ewes and lambs were used in the 1945 experiments. The ewes were allowed all of the alfalfa hay they wanted. Supplements were fed as follows: Lot I, $\frac{1}{2}$ lb. of oats and 3 lb. of potatoes; Lot II, 3 lb. of potatoes; and Lot III, no supplement. The experiment was repeated in 1946.

Table 3 gives the results of these two years' study. The lambs in Lot I made slightly greater gains than those in the other two lots, but these extra gains were not enough to offset the extra cost of feeding grain to the ewes. Feeding potatoes to the ewes did not increase the rate of gain made by the lambs but did aid in maintaining the ewes' weights. These results show that when the ewes are in good flesh at lambing time and receive all of the good alfalfa hay they will eat, a grain supplement is not always necessary during the lactation period. Cull potatoes may be used to advantage but are not essential for satisfactory results.

The experiment in 1947 was a slight modification of that in progress during the previous two years. In addition to alfalfa hay, the ewes in Lot I received 3 lb. of potatoes and .87 lb. of oats, those in Lot II, 3 lb. of potatoes and .57 lb. of oats, while those in Lot III were fed 3 lb. of potatoes but no grain. As shown in Table 4, there was little advantage in feeding oats to ewes so far as lamb and wool production were concerned. Ewes receiving oats during the lactation period gained slightly more body weight than those fed no grain.

Table 3. A comparison of alfalfa hay, potatoes and oats; alfalfa hay and potatoes; and alfalfa hay alone as rations for lactating ewes, 1945 and 1946.

	Lot I	Lot II	Lot III
	Alfalfa, potatoes and oats	Alfalfa and potatoes	Alfalfa
1945			
No. days on test (Feb. 6-May 8)	91	91	91
No. ewes	31	31	31
Av. total gain per ewe, lb.	9.8	3.3	2.3
Av. wool production per ewe, lb.	13.4	13.2	13.3
Av. daily feed per ewe (including waste), lb.:			
Alfalfa hay	7.49	7.79	7.57
Potatoes	3.00	3.00	.....
Oats	.53	.....	.....
Percent feed wasted:			
Alfalfa hay	9.7	9.5	11.5
No. lambs	48	48	48
Av. daily gain per lamb, lb.	.730	.700	.710
Av. daily feed eaten per lamb, lb.:			
Alfalfa hay	1.40	1.51	1.45
Oats	.55	.44	.53
1946			
No. days on test (Feb. 6-April 30)	84	84	84
No. ewes	26	24	24
Av. total gain per ewe, lb.	4.9	5.6	-8.3
Av. wool production per ewe, lb.	12.8	12.1	12.2
Av. daily feed per ewe (including waste), lb.:			
Alfalfa hay	8.57	8.14	8.37
Potatoes	3.00	3.00	.....
Oats	.53	.....	.....
Percent feed wasted:			
Alfalfa hay	10.5	9.1	10.4
No. lambs	39	40	40
Av. daily gain per lamb, lb.	.701	.677	.690
Av. daily feed eaten per lamb, lb.:			
Alfalfa hay	1.65	1.66	1.81
Oats	.48	.46	.48

Table 4. The value of different amounts of oats in supplementing a ration of alfalfa hay and potatoes for ewes during lactation, 1947.

	Lot I	Lot II	Lot III
	Alfalfa, potatoes and .87 lb. oats	Alfalfa, potatoes and .57 lb. oats	Alfalfa and potatoes
No. days on test (Feb. 18-May 1)	72	72	72
No. ewes	30	30	29
Av. total gain per ewe, lb.	7.4	4.5	.4
Av. wool production per ewe, lb.	13.4	14.5	13.4
Av. daily feed per ewe (including waste), lb.:			
Alfalfa hay	9.72	10.42	10.26
Potatoes	3.00	3.00	3.00
Oats	.87	.57	.....
Percent feed wasted:			
Alfalfa hay	17.8	14.4	16.9
No. lambs	39	39	39
Av. daily gain per lamb, lb.	.688	.658	.649
Av. daily feed eaten per lamb, lb.:			
Alfalfa hay	1.72	1.72	1.84
Oats	.30	.27	.19

Feeding Early Lambs for Market

A second phase of the experiment was to compare rations for creep-feeding lambs and to compare lambs turned on pasture with those lambs continued in dry lot until market time. Throughout these studies the lambs were given all of the particular ration offered that they would eat.

In 1934 there were 3 lots containing 9 ewes and 12 lambs each. On April 13 the ewes and lambs of Lot I were put on red clover pasture and those of Lot II on sweet clover pasture. Lot III was continued in dry lot. The average daily ration consumed by the lambs in Lot III during the experimental period (April 13-May 31) was .93 lb. of barley and 1.11 lb. of alfalfa hay. During the same period the ewes in Lot III ate an average of .75 lb. of barley and 6.70 lb. of alfalfa hay per head daily. Taking into consideration the total feed eaten by both ewes and lambs, there was a daily feed charge against each lamb of Lot III of 1.49 lb. of barley and 6.13 lb. of hay. Table 5 shows that the lambs failed to gain as rapidly on pasture as in the dry lot during the first part of the study period. However, after the lambs had been on pasture for a few weeks, their average daily gains were quite comparable to those made by the lambs which remained in the dry lot.

Table 5. Lamb gains on red clover and sweet clover pastures compared with those in dry lot, 1934.

	Lot I On red clover pasture	Lot II On sweet clover pasture	Lot III Continued in dry lot
No. of lambs	12	12	12
Av. daily gain April 13-May 8, lb.	.427	.490	.590
Av. daily gain May 8-May 31, lb.	.488	.513	.522

There were 3 lots of ewes and lambs with 13 lambs in each lot during 1935. The experimental period extended from May 2 to May 29. Lot I was on red clover pasture, and Lot III was continued in the dry lot on hay and grain. Lot II was on red clover pasture but also had access to alfalfa hay and barley. During the first 18 days the lambs in the dry lot made an average daily gain nearly twice that in the other two lots (Table 6). However, the lambs on pasture gained a little faster than those in the dry lot during the latter part of the experimental period.

Table 6. A comparison of red clover pasture, red clover pasture plus alfalfa hay and barley and the dry lot for spring lambs, 1935.

	Lot I Red clover pasture	Lot II Red clover pasture plus hay and barley	Lot III Dry lot
No. lambs	13	13	13
Lamb gains, lb.:			
Av. daily gain May 2-May 20	.350	.393	.705
Av. daily gain May 30-May 29	.718	.769	.615
Av. daily gain for the entire period (May 2-29)	.501	.518	.675



Range herds are a fine source of ewe replacements for the farm lamb producer's flock. The University's Aberdeen station selected ewe lambs from this range band in south central Idaho.

In 1942 one lot of ewes and lambs was put on red clover and alfalfa pasture. In the second lot the ewes were allowed to graze a grass pasture during the daytime, but the lambs remained at all times in the dry lot. The ewes and lambs were together at night. Both the ewes and lambs of Lot III were kept in the dry lot. Table 7 gives the results of this study. The average daily gain in weight made by the lambs on pasture was decidedly below those made by the lambs in the dry lots during the first 2 weeks of the study period. The lambs on pasture gained as rapidly as those in the dry lots during the second half of the period. However, the average daily gain for the entire 30-day period was considerably in favor of the lambs that were continued in dry lot. Turning the ewes out to graze during the day or leaving them in dry lot continuously had little influence on the rate of gain made by the lambs provided the lambs were kept in dry lot.

Table 7. Ewes and lambs on pasture, ewes on pasture during day but lambs in dry lot, and both ewes and lambs in dry lot, 1942.

	Lot I	Lot II	Lot III
	Ewes and lambs on red clover and alfalfa pasture	Ewes on grass pasture and lambs continued in lot on oats and alfalfa hay	Ewes and lambs continued in lot on oats and alfalfa hay
No. lambs	33	28	30
Av. daily gain made by lambs, lb.:			
May 1 to May 15	.100	.478	.502
May 15 to June	.605	.647	.504
For the entire period (May 1-June 1)	.369	.568	.503

Only two groups were used in 1943. The ewes of Lot I were turned on pasture during the day, but the lambs were kept in dry lot and fed all the alfalfa hay and grain they would eat. Both the ewes and lambs of Lot II were on pasture continuously. Table 8 shows that the lambs kept in dry lot made greater average daily gains than did those on pasture. The difference in favor of those in dry lot would undoubtedly have been greater at the end of the first two weeks of the experimental period.

Table 8. Ewes and lambs on pasture compared with lambs in dry lot but ewes allowed to graze during the day, 1943.

	Lot I	Lot II
	Ewes on pasture during the day. Lambs continued in dry lot.	Ewes and lambs on pasture
No. of lambs in each lot	47	45
Av. wt. of lambs at start of experiment (April 28), lb.	75.3	73.9
Av. wt. of lambs at end of experiment (June 1), lb.	97.4	92.5
Av. total gain per lamb, lb.	22.1	18.6
Av. daily gain per lamb, lb.	.650	.547
Av. daily feed allowed per lamb in dry lot, lb.:		
Barley	1.28	.....
Alfalfa hay*	3.92	.....

* Estimated about 25% of this hay was wasted.

This series of experimental studies comparing spring lambs on pasture with those kept in dry lot shows a low rate of gain for pastured lambs during the first two or three weeks they are on pasture. Therefore, it appears advisable to continue them in dry lot when only a short period remains before market time. The ewes could be turned out to graze during the day and the lambs allowed to nurse at night, thereby greatly reducing feed costs. Light, thin lambs requiring more time to finish may be put on pasture as soon as sufficient forage is available.

For two years, 1934 and 1936, different types of pastures were compared for ewes and early lambs. Table 5 (page 8) shows that in 1934 the lambs on sweet clover pasture (Lot II) made slightly greater gains than those on red clover pasture (Lot I). This difference was greatest during the early part of the grazing season.

During 1936 (Table 9), when the ewes and lambs were on alfalfa pasture, the lambs gained a little more rapidly during the first part of the grazing season than did similar lambs on red clover pasture. However, during the last three weeks the lambs on red clover gained more than those on alfalfa. In spite of this later trend, the average daily gain for the entire experimental period was in favor of those on alfalfa pasture. There were approximately 50 lambs in each lot. Some ewes and lambs were pastured on alkali weed from June 15 to July 10, 1946. These lambs made an average daily gain of .586 lb. for the period.

Table 9. A comparison of red clover and alfalfa pastures for early spring lambs, 1936.

	Lot I On red clover pasture	Lot II On alfalfa pasture
Lamb gains, lb.:		
Av. daily gain April 24-May 27	.540	.609
Av. daily gain May 27-June 15	.303	.243
Av. daily gain for entire period (April 24-June 15)	.410	.464

For five years, 1937-1941, several different rations were compared for creep-feeding lambs. In 1937 there were 3 lots of ewes and lambs. From February 17 to May 7 they were all kept in the dry lot. The ewes received the same ration of alfalfa hay and barley, while the lambs were fed as follows: Lot I, alfalfa hay and barley; Lot II, alfalfa hay; and Lot III, alfalfa hay and a commercially prepared concentrate for creep-feeding lambs. The results of this trial are presented in Table 10. As was expected, the lambs in Lot II, which received no concentrate, made the lowest average daily gain. Those on the commercial concentrate gained considerably faster than those on barley. This may have been due, in part at least, to the fact that the lambs consumed greater quantities of the commercial concentrate than of barley.

Table 10. Early lamb gains made on alfalfa hay and barley, alfalfa hay, and alfalfa hay and a commercial concentrate, 1937.

	Lot I Alfalfa and barley	Lot II Alfalfa	Lot III Alfalfa and commercial concentrate
No. of lambs	51	45	40
Av. wt. when test began, lb.*	17.6	17.8	17.5
Av. wt. at end of test (May 7), lb.	62.9	58.9	68.9
Av. gain, lb.	45.3	41.1	51.4
Av. daily gain, lb.	.582	.534	.672
Av. daily feed consumption in creep, lb.:			
Alfalfa hay	1.45	1.10	1.45
Barley	.43	.....	.....
Commercial concentrate	.....	.....	.67

* All lambs born prior to February 13 were put on test February 17.

On May 7 each lot of ewes and lambs was divided about equally. One-half of each lot was continued on the same ration and the other half was put on red clover pasture until the experiment was closed on June 9. The average daily gains made by the lambs during this part of the experiment are shown in Table 11. Lot IV came from Lot I, Lot V from Lot II and Lot VI came from Lot III. During the first 17 days the lambs which remained in the dry lots outgained those on pasture, while the reverse was true during the last part of the period. This conforms with results discussed earlier in this bulletin. The average over-all gain made by the lambs continued on hay alone was rather low as compared with the gains made by lambs in the other lots. That indicates that lambs should receive a concentrate in the creep if they are to be kept in dry lot until weaning.



Many early farm lambs in southern Idaho are marketed through local lamb pools. Prices for such animals as these at the Aberdeen pool are usually good on the early market.

Table 11. Dry lot vs. pasture, May 7-June 9, 1937.

	Lot I	Lot IV	Lot II	Lot V	Lot III	Lot VI
	Alfalfa and barley	Pasture	Alfalfa	Pasture	Alfalfa and commercial concentrate	Pasture
No. of lambs	25	26	23	22	24	25
Av. daily gain May 7-24, lb.	.647	.329	.471	.435	.612	.265
Av. daily gain May 24-June 9, lb.	.350	.625	.181	.606	.488	.644
Av. daily gain during entire period (May 7-June 9), lb.	.502	.472	.326	.521	.550	.448

During 1938 the lambs in Lot I were given alfalfa hay and barley; those in Lot II alfalfa hay, barley and wheat bran; and those in Lot III alfalfa hay and the commercial concentrate. Table 12 gives the results of this experiment. The lambs in all lots made satisfactory gains. However, those on the commercial concentrate again outgained the other lambs, while those receiving wheat bran as part of the concentrate made the smallest gains.

Table 12. A comparison of alfalfa hay and barley; alfalfa hay, barley and wheat bran; and alfalfa hay and commercial concentrate as rations for early spring lambs, 1938.

	Lot I	Lot II	Lot III
	Alfalfa hay and barley	Alfalfa hay, barley and wheat bran	Alfalfa hay and commercial concentrate
No. of lambs	45	48	47
Av. wt. when test began, lb.	19.9	19.9	19.4
Av. wt. when test ended, lb.	63.9	62.2	66.1
Av. gain, lb.	44.0	42.3	46.7
Av. daily gain, lb.	.628	.607	.661
Av. daily feed consumption in creep, lb.			
Alfalfa hay	1.88	1.75	1.84
Barley	.31	.30	.....
Commercial concentrate	.....	.....	.52

The experimental feeding period in 1939 extended from February 21 to May 31. Creep rations for the lambs were as follows: Lot I, alfalfa hay and barley; Lot II, alfalfa hay and commercial concentrate at the start with the commercial concentrate gradually replaced with barley; and Lot III, alfalfa hay and commercial concentrate. The greatest average daily gain was made by the lambs receiving the commercial concentrate throughout the test period (Table 13). The lambs in Lot I, which were on barley throughout the period, made somewhat smaller gains than those which had been started on the commercial concentrate and gradually changed to barley. It will be seen that the average daily consumption of concentrate was greatest on the commercial concentrate and lowest on barley. This may help to explain the differences in rates of gain made by the lambs in the respective lots.

Table 13. Lamb gains made on alfalfa hay and barley, alfalfa hay and commercial concentrate at the start with a gradual change to barley, and alfalfa hay and commercial concentrate, 1939.

	Lot I	Lot II	Lot III
	Alfalfa and barley	Alfalfa, started on commercial concentrate and gradually changed to barley	Alfalfa and commercial concentrate
No. of lambs	54	53	56
Av. wt. when test began (Feb. 21), lb.	18.0	17.9	17.9
Av. wt. when test ended (May 3), lb.	57.0	58.9	60.7
Av. gain, lb.	39.0	41.0	42.8
Av. daily gain, lb.	.564	.590	.650
Av. daily feed consumption in creep, lb.			
Alfalfa hay	1.31	1.17	1.19
Barley	.31	.47*	.....
Commercial concentrate	.....	.....	.73

* Includes commercial concentrate used in starting lambs.

Four different rations were fed to the lambs during 1940. Lot I received alfalfa hay and barley; Lot II alfalfa hay, syrup and barley; Lot III alfalfa hay and oats; and Lot IV alfalfa hay and commercial concentrate. The results are presented in Table 14. The lamb gains corresponded with those made on similar rations in previous years. The addition of syrup to a ration of alfalfa hay and barley resulted in greater feed consumption and in gains that equaled the rate made by the lambs receiving the commercial concentrate.

Table 14. Lamb creep rations consisting of alfalfa hay and barley; alfalfa hay, syrup and barley; alfalfa hay and oats; and alfalfa hay and commercial concentrate, 1940.

	Lot I	Lot II	Lot III	Lot IV
	Alfalfa hay and barley	Alfalfa hay, syrup and barley	Alfalfa hay and oats	Alfalfa hay and commercial concentrate
No. of lambs	14	14	15	15
Av. wt. when test began (April 24), lb.	62.2	64.7	62.5	70.2
Av. wt. when test ended (May 29), lb.	82.9	88.1	82.6	92.0
Av. gain, lb.	20.8	23.3	20.6	23.2
Av. daily gain, lb.	.592	.665	.589	.663
Av. daily ration, lb.:				
Alfalfa hay	2.94	3.35	3.09	3.68
Barley	.85	.90	-----	-----
Oats	-----	-----	1.21	-----
Syrup	-----	.30	-----	-----
Commercial concentrate	-----	-----	-----	1.13

The following lamb-creep rations were fed in 1941: Lot I, alfalfa hay and barley; Lot II, alfalfa hay, barley and syrup; and Lot III, alfalfa hay and oats. In Lot II the syrup was mixed with the barley when placed in the feed trough. Chopped hay was fed this year. Unfortunately, it was impossible to feed some additional lots on long hay to check the results against those receiving chopped hay. When feeding long hay in previous years in V-shaped racks, it appeared that the lambs could not get enough leaves even when the hay was turned two or three times daily and new hay added. It was thought that by feeding choice chopped hay, good hay would be available to the lambs at all times. At the start, enough hay was placed in the feed racks to last several days. The coarse material was removed twice daily, and the balance of the hay was stirred. This proved to be very unsatisfactory, and the lambs did very poorly until all the hay that remained was removed every day before adding new hay. These results substantiate the observations of sheepmen that young lambs do better on green, leafy, long hay than on chopped hay. The desirability of cleaning the feed racks daily and keeping fresh hay before the lambs is also emphasized.

The results of the experiment are given in Table 15. While there was not a great difference in the average rate of daily gain made



Good breeding stock, good feed, and good management produced this car-load of early spring lambs. Shipping time is the pay-off in lamb production.

by the lambs in the different lots, those receiving oats gained the fastest and those on barley without syrup made the lowest average gain. The lambs on straight barley ate the least amount of concentrate but slightly more hay than those in the other lots. By the end of the test period the lambs in Lots I and II were taking nearly 1 lb. of barley, and those in Lot II about 1½ lb. of oats per head daily.

Table 15. A comparison of gains made by lambs creep-fed on alfalfa hay and barley; alfalfa hay, barley and syrup; and alfalfa hay and oats, 1941.

	Lot I	Lot II	Lot III
	Alfalfa and barley	Alfalfa, bar- ley and syrup	Alfalfa and oats
No. of lambs	48	47	49
Av. wt. when test began (February 6), lb.	18.2	17.8	17.7
Av. wt. when test ended (May 2), lb.	70.1	70.4	70.8
Av. gain, lb.	51.9	52.6	53.1
Av. daily gain, lb.	.610	.619	.625
Av. daily feed consumption in creep, lb.:			
Alfalfa hay (chopped)	.97	.91	.76
Barley	.35	.41	.....
Syrup	.....	.19	.....
Oats	.....	.....	.58

The most rapid gains in lamb weight result from a high daily intake of concentrates. Lambs which make high daily gains reach the desired market weight and finish earlier than those which gain more slowly. This is advantageous from the standpoint of saving feed and labor and in reaching the early market. Heavy shipments of spring lambs tend to lower the market price later in the summer.

SUMMARY AND CONCLUSIONS

During the years 1934-1947 experimental studies concerned with the production of early spring lambs on irrigated farms of southern Idaho have been in progress at the Aberdeen Branch Experiment Station. Two phases of the problem were investigated. The first phase dealt with rations for ewes during the lactation period, and the second phase involved methods of feeding the lambs themselves during the suckling period. A flock averaging about 130 crossbred, whitefaced ewes and their lambs (from either Hampshire, Suffolk, or Panama rams) were used in the experimental tests. The lambs were usually born in January and February and were normally marketed as fat lambs during the late spring or early summer.

Results of the studies indicate that, when ewes are in good flesh at lambing time, a daily ration consisting of all the good alfalfa hay they will eat plus about $\frac{1}{2}$ lb. of grain, either oats or barley, will be satisfactory. From the standpoint of lamb gains the grain could have been omitted, but the ewes lost some weight when the grain was left out of the ration. Cull potatoes were used with good results at the rate of about 3 lb. of potatoes per ewe daily.

A good lamb-creep ration consisted of all the high quality long alfalfa hay and oats or barley that the lambs would eat. Lambs made poor gains for the first 2 or 3 weeks on spring pasture. It seems advisable to continue them in the dry lot when only 2 or 3 weeks remain before market time. The lambs did make satisfactory gains, however, when the ewes grazed during the day and were put in the dry lot with the lambs at night. Light lambs requiring several weeks to finish after the pasture season starts should be turned out to graze as soon as enough forage is available.