Oregon Agricultural College

Experiment Station

Umatilla Branch Experiment Station

Fattening Lambs for the Late Winter Market

By

H. K. DEAN

and

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Lambs marketing alfalfa at the Umatilla Branch Experiment Station.

CORVALLIS, OREGON

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SUMMARY

From October until April the average increase in the Portland lamb market is 52 cents per hundred pounds per month.

Average range lambs will fatten in 60 to 90 days with one pound of grain per day and all the alfalfa they wish.

Lambs to be marketed in March and April should be fed alfalfa alone until 60 to 90 days before the time they are to be marketed, and then given grain at the rate of one pound per head per day.

Small lambs on hay alone will eat about 80 pounds a month.

Lambs on hay alone will make but very little gain, but the increase in market during the winter months will usually pay a fair price for the hay.

Feeding lambs hay alone for a while before beginning the grain feeding makes it possible to market twice as much alfalfa on a given investment in lambs and grain.
AVERAGE MONTHLY TOP PRICES OF LAMBS
AT NORTH PORTLAND, 1910-1924

Jan. 9.93
Feb. 10.41
Mar. 10.94
Apr. 11.36
May 10.34
June 9.47
July 8.81
Aug. 8.49
Sept. 8.75
Oct. 8.75
Nov. 8.59
Dec. 9.45
Fattening Lambs for the Late Winter Market

By
H. K. Dean
and
E. L. Potter

The object of the tests described in this Bulletin was to study methods of fattening lambs for the March and April market, partly to take advantage of the better prices which normally prevail during the late winter months, and partly to market a larger quantity of alfalfa.

Excessive Investment Required for Short Feed

The usual method of fattening range lambs is to feed about 75 days on a daily ration consisting of one pound of grain to three pounds of alfalfa. To the alfalfa raiser who is fattening lambs primarily as a means of marketing hay, this method of fattening takes too many lambs and too much grain to market a ton of hay. Eight to ten lambs are required to market a ton of hay, and these lambs will cost approximately $6.00 a head. With this ton of hay, 600 to 750 pounds of grain will be required which, if purchased, will cost $10.00 to $15.00. This means an investment of $45 to $75 in order to market one ton of hay. To an alfalfa grower of limited financial resources, this large investment is a serious and often insurmountable obstacle.

Lambs Ready for Market Too Early

A second drawback is that if the lambs are put on feed when they come off the range, they will be ready too early for the best market. The price of lambs normally increases from the time the last lambs come off the range in October or November until the time the earliest spring lambs come onto the markets from Southern Oregon.

Prices Increase 52 Cents Per Month

During the last fifteen years, or since the Portland Stock Yards were established, the average increase in price of lambs from October until April has been 52 cents per hundred pounds per month, as is shown on the accompanying chart. This chart should be understood as an average of the fifteen years good and bad. Some years the market does not go up at all during the winter, while other years the increase is over $1.00 a month. Most of the feeder lambs come off the ranges in October, and if put on a grain ration at once will be ready to market in January; whereas the best price is not usually obtainable until April.

New Method Necessary

This situation naturally raises several questions. First, could the lambs be fed for a longer period than 75 days, using the same grain but more hay, and figuring that the increased price obtained by holding the
lambs for a later market would afford a reasonable return for the additional hay used? Second, how much more hay would be necessary? Third, will a lamb gain in either weight or finish on hay alone? Fourth, would it be better to feed a little grain each day for a longer time, or to feed hay alone for a while and then give a heavier ration of grain for finishing?

Tests Planned at Umatilla

The tests conducted at the Umatilla Experiment Station during the winter of 1923-24 were intended to throw light on these matters. A car of average feeder lambs was used. All lots were to receive 75 pounds of grain per head, and all were to be fed for 150 days. Circumstances made it necessary to reduce the feeding period to 136 days, but each lamb received the 75 pounds of grain as was planned. The lambs in Lot 1 received their 75 pounds of grain evenly distributed throughout the entire time. Lot 2 received their 75 pounds of grain at the rate of \( \frac{3}{4} \) pound per day during the last 100 days. Lot 3 received their 75 pounds of grain at the rate of one pound per day during the last 75 days, while Lot 4 received their grain at the rate of \( \frac{1}{2} \) pounds during the last 50 days. All lots had all the hay they would eat all the time.

### TABLE I. AVERAGE OF 1923-24 AND 1924-25 TESTS.

<table>
<thead>
<tr>
<th>Plan of feeding.</th>
<th>Lot 2</th>
<th>Lot 3</th>
<th>Lot 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HAY ALONE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days fed</td>
<td>143</td>
<td>102</td>
<td>78</td>
</tr>
<tr>
<td>Wt. at beginning</td>
<td>60.9</td>
<td>63.7</td>
<td>64.7</td>
</tr>
<tr>
<td>Wt. at close</td>
<td>85.8</td>
<td>87.5</td>
<td>90.4</td>
</tr>
<tr>
<td>Gain per head</td>
<td>24.9</td>
<td>23.9</td>
<td>24.8</td>
</tr>
<tr>
<td>Gain per head per day</td>
<td>1.7</td>
<td>1.23</td>
<td>3.2</td>
</tr>
<tr>
<td>Hay per day</td>
<td>.53</td>
<td>.75</td>
<td>.99</td>
</tr>
<tr>
<td>Feed cost per day</td>
<td>.0187</td>
<td>.0221</td>
<td>.0246</td>
</tr>
<tr>
<td><strong>Total cost per day</strong></td>
<td>.0276</td>
<td>.0310</td>
<td>.0335</td>
</tr>
</tbody>
</table>

| **HAY AND GRAIN** |      |      |      |
| Days fed          | 143  | 143  | 143  | 143  |
| Gain per head     | 24.87| 26.7 | 29.22| 25.5 |
| Gain per head per day | .17 | .19 | .2 | .18 |
| Hay per day       | 2.67 | 2.68 | 2.55 | 2.45 |
| Grain per day     | .53  | .53  | .53  | .53  |
| Feed cost per day | .0186| .0187| .0183| .0178|
| **Total cost per day** | .0275| .0276| .0272| .0267|
| Feed cost per 100 lbs. gain | $10.71| $9.96| $8.97| $10.10|
| **Total cost per 100 lbs. gain** | $16.10| $14.98| $13.56| $13.35|

*On account of weather and other conditions, the length of the periods varied slightly from the schedule, but each lamb received exactly 75 pounds of grain.

**The total cost includes the feed cost plus the following items: Labor, $0.05 per head per day; miscellaneous, including dip, salt, equipment and interest, $0.033 per head per day; and death loss, $0.006 per head per day.
Tests Repeated

In the winter of 1924-25, this test was repeated, except that it was possible to feed the full 150 days as scheduled. The results of the two tests were practically the same, and the averages of the two are shown in Table I. From this table we are able to obtain quite conclusive answers to our original questions.

Preliminary Hay Feeding Successful

First, we find that these small lambs were fed 2.63 pounds of hay a day, or about 80 pounds a month. This was all they would consume without undue waste. Other tests have shown that larger lambs will consume a larger quantity of hay. Second, the gain on hay alone was very small, averaging .06 pound a day, or about two pounds a month. This gain is so small that it might be all fill. Of course, with so small a gain, the lambs did not fatten. In other words, they were merely marking time while they were fed hay alone. The two pounds of gain a month will about pay for the labor and the incidentals, and we would, therefore, have to look to the increased price to pay for the hay. We have already seen that the normal increase during the winter months is 52 cents per hundred pounds, which, on an 85-pound finished lamb would amount to 44 cents a head. This would pay $11.00 a ton for the hay.

One Pound of Grain Best Ration

In answer to the final question of whether the grain should be fed in large quantities during a short time, or in small quantities during a longer time, these two tests indicate that the standard practice of one pound of grain per head per day is better than either a larger or a smaller amount of grain, and it would therefore be our recommendation that the grain be fed at the rate of one pound per day beginning approximately 75 days before the time it is intended to market the lambs, unless the lambs are especially small and thin, in which case the grain feeding should cover 90 to 100 days. Likewise, if the lambs are already in good condition, the length of the grain feed can be reduced to 60 days. The lambs used in these tests were quite thin and did not reach a prime condition on 75 pounds of grain. The kind of grain, as shown in Oregon Station Bulletin 198, may be either barley, wheat, oats, or corn, or any mixture of these, and should be fed unground.

Long Feed Practical

Taking all factors into consideration, we believe that it is quite practical for the alfalfa farmer to feed lambs for a while on hay alone, depending upon the increased market price to pay for the hay, and in the meantime postponing the feeding of grain until from 60 to 100 days of the time when he intends to market the lambs. The length of time which the lambs are fed on hay alone is entirely optional with the feeder, providing that the grain feeding begins at such time as will make the lambs ready for market not later than the middle of April. Early spring lambs may come at any time after this date and break the market. The length of time to feed grain depends partly upon the condition of the lambs.
and partly upon their size. A good fleshy feeder will fatten in 60 days, getting one pound of grain per day. A medium feeder will fatten in 75 days; while a thin feeder will require 90 days. Since the lambs should put on about \( \frac{1}{2} \) pound of gain a day while on grain, it is easy to figure what the size will be when finished. Lambs that weigh 90 pounds or more (stock-yards weight) always sell at a discount. It is better to sell the lambs before they are finished, than to risk keeping them until they are overweight.

**Lambs Must Be Small**

We must warn the feeders, therefore, that only small lambs should be used for a long feed, and if they go much above 60 pounds in weight before the grain feeding is begun, by the time they are fat they will be too heavy to sell well.

**Fair Profits for Fifteen Year Average**

Theoretically, if a lamb is bought for 10 cents a pound and kept for five months, we should expect the price to increase 52 cents a month, or a total of $2.60, making the probable selling price of the lamb $12.67 per hundred pounds. Lambs bought and sold on this basis and fed after the manner of Lot 3 of these tests, would return $8.00 a ton for the hay and $30.00 a ton for the grain, in addition to current wages for labor, incidentals, and interest on investment. In actual practice, the increase in price during the winter in good years is more than this, and in bad years less.

**Large Profits in Last Two Years**

The two years in which these tests were conducted were good years. The first year, the lambs were bought at $10.00 per hundred at Pilot Rock and sold at Portland at $14.48 per hundred. The second year, the lambs were bought for $10.25 per hundred at Stanfield and sold at Portland for an average of $15.12 per hundred. The returns were, of course, proportionately larger. The actual price received for the hay in the first test was $17.87 for all the lambs on test, and $20.93 for Lot 3. In the second test the returns for the hay for all the lambs including some inferior lots not described in this Bulletin were $11.24. The returns on Lot 3 were $18.20. The first test was the more profitable in spite of a lower price, because the grain in that test cost $29.00 a ton and in the second test $43.75 a ton, and also because the lambs in the second test gained a little better. In planning for the future, it would seem wiser to base our estimates on the average increase in price for the past fifteen years rather than upon the price of the last two years.

**Waste Hay and Manure Add to Profits**

In addition to the cash returns, there will be about 50 tons of manure for each car-load of lambs. There will also be the waste hay. From 10 to 20 percent of the hay will be refused by the lambs, but may be fed to stock cattle or horses. For this purpose, it has about one-half the value of good hay. In these experiments, 17 percent of the hay was refused in the first test and 15 percent in the second. The lambs are charged, however, with the total amount offered.
FATTENING LAMBS FOR THE LATE WINTER MARKET

Long Feed Requires Smaller Investment

Comparing this long feed with the short feed, we find the profits on the long feed less in the good years and more in the bad years, but averaging about the same. As a practical business proposition for the alfalfa farmer, however, the long feed is very much the safer and better on account of the lower investment and less risk. On a short feed it will take eight to ten lambs and 600 to 750 pounds of grain to market one ton of hay. This involves too much investment and too much risk for any farmer who does not have his farm free of debt and some ready cash on hand. On a long feed, however, the number of lambs and the amount of grain needed to market a ton of hay is cut in half. This halves both the investment and the risk and puts the business within the reach of any alfalfa farmer who is in reasonably sound financial condition.

Long Feed Better for Bankers

A bank may safely lend the entire purchase price of the lambs on a five months feed, and if the feeder is an exceptionally good man, the banker may even furnish the money for the grain. He can not, however, on a short feed safely lend the price of the lambs, to say nothing of the price of the grain.

Farmers Can Compete with Commercial Feeders

A large proportion of the lambs fattened in the Northwest are fattened by commercial feeders at Portland and other central points. These feeders get their grain at as cheap a rate as the alfalfa farmer, but their hay is baled and shipped to them and is, therefore, much more expensive. These feeders have a considerable advantage over the alfalfa farmers in crowding lambs through rapidly for an early market. On the other hand, the alfalfa farmer has a decided advantage in feeding for the late market.

Fall Pasture for Fattening Lambs

It is a rather common practice in some localities to run lambs on the last cutting of alfalfa, meadows, stubble fields, etc., as long as weather will permit before putting them in the feed lot. As a check on this practice, a fifth lot of lambs similar to the four already described were kept on such pasture for 57 days, and then fattened on grain the same as were Lot 3. These lambs on pasture made a little better gain than those on hay, but not very much, and they did not get fat. Such pasture should be considered in the same light as feeding hay alone; that is, it will hold the lambs for a later market and returns for such pasture will be obtained only from an increased price. If the lambs are weighed when they come off good pasture, care should be taken not to be deceived by the fill.

Pasture Gains Small but Profitable

Our lambs gained only 7.3 pounds per head during the 57 days they were on pasture and it is probable that some of that was fill. The normal increase of 44 cents a head in market value would be a reasonable price for the pasture. The customary rental of such pastures is considerably less than this, but there is always some danger of loss from bloat.
Lambs Fatten Only on Grain

The use of such fall pastures for holding lambs for a later market is a desirable practice, providing the feeder realizes that it is only a holding proposition and that the lambs will not begin to get fat until they are fed grain.
Fifty tons of hay on way to market. Lambs fed at Umatilla Branch Experiment Station enroute to railroad.

Finished lambs at Portland stock-yards.