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Lamb's Fed Sorghum Grain Rations
Maurice Shelton
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Physcial form is a problem in high-concentrate rations fed in drylot particularly if the ration is composed largely of sorghum grain. A feeding trial was conducted in the fall and winter of 1963-64 in which a single basic ration was fed in 5 different forms. The ration used was as follows:

Ground sorghum grain, 73.00%; ground alfalfa hay, 12.00%; cottonseed meal, 7.50%; urea, 0.75%; molasses, 6.00%; trace mineral salt, 0.50%; dicalcium phosphate, 0.25%; 15 mg. aureomycin per pound of feed.

The ration forms used were: lot 1--Ground form; lot 2--Pelleted (complete ration); lot 3--Steam-rolled sorghum grain; lot 4--Steam-rolled sorghum grain and pelleted supplement; lot 5--Whole sorghum grain and pelleted supplement.

The sorghum grain and alfalfa hay had been ground through a hammer mill and, as is usually the case with these 2 feeds, were fine to dusty in nature. In the case of lots 4 and 5, all of the ingredients of the ration, except the sorghum grain and molasses, were put into a ¼-inch pellet. This supplement was then mixed with the appropriate amount of grain and molasses to equal the basal ration. The ¼-inch pellets were prepared in error in processing the feeds, as smaller size pellets were intended in planning. The molasses didn't satisfactorily bind the supplement and grain, thus, these ingredients tended to separate out in the feed trough. Each lot or treatment group was sub-divided into A and B groups with the latter having access to long alfalfa hay free-choice. At the outset there were 10 lambs in each sub-group, or a total of 100 in the entire experiment. The experiment was continued for 70 days. The results are shown in Table 1.

Several lambs were lost or removed for reasons not considered pertinent to the experiment except to point out that some increase in death losses are expected in self-feeding rations of this type.

As has been observed in previous experiences with rations of this type, animal gains were erratic because of a considerable amount of digestive disturbances among the lambs. However, significant differences were obtained and these appear to fit a trend or pattern. Those lots which received the ground ration, or the ration containing whole sorghum grain, performed less satisfactorily than the remainder. Although the poor performance of lot 4B receiving steam-rolled grain and pelleted supplement plus long hay cannot be explained, in general the lots receiving steam-rolled sorghum grain were distinctly superior in performance. Animals receiving the complete pelleted ration were intermediate in performance between those receiving the ground rations and the steam-rolled grain. In this series of studies, those lambs having access to long hay did not gain as fast or as efficiently as those receiving only the basal ration. However, fewer lambs were lost from those lots receiving the long hay. In the B lots, long hay comprised 29.4% of the total feed intake.
TABLE 1--Influence of Ration Forms on Lamb Performance

<table>
<thead>
<tr>
<th>Lot Number</th>
<th>Average daily gain</th>
<th>Feed per pound gain*</th>
<th>Lot Number</th>
<th>Average daily gain</th>
<th>Feed per pound gain*</th>
<th>Lot Number</th>
<th>Average daily gain</th>
<th>Feed per pound gain*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>.394</td>
<td>7.30</td>
<td>1B</td>
<td>.401</td>
<td>7.20</td>
<td>.398</td>
<td>7.25</td>
<td></td>
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<tr>
<td>2A</td>
<td>.421</td>
<td>5.68</td>
<td>2B</td>
<td>.400</td>
<td>7.16</td>
<td>.411</td>
<td>6.42</td>
<td></td>
</tr>
<tr>
<td>3A</td>
<td>.464</td>
<td>6.47</td>
<td>3B</td>
<td>.459</td>
<td>6.66</td>
<td>.462</td>
<td>6.56</td>
<td></td>
</tr>
<tr>
<td>4A</td>
<td>.456</td>
<td>7.09</td>
<td>4B</td>
<td>.383</td>
<td>8.23</td>
<td>.420</td>
<td>7.66</td>
<td></td>
</tr>
<tr>
<td>5A</td>
<td>.387</td>
<td>6.90</td>
<td>5B</td>
<td>.390</td>
<td>7.85</td>
<td>.389</td>
<td>7.37</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>.424</td>
<td>6.69</td>
<td></td>
<td>.406</td>
<td>7.42</td>
<td></td>
<td>4.15</td>
<td>7.05</td>
</tr>
</tbody>
</table>

*Several lambs were lost or removed during the progress of the experiment, and feed efficiency figures do not account for feed consumed by animals which died.

Summary

This work has shown that lamb performance can be improved by steam rolling sorghum grain, and that pellets are preferred over the finely ground form. For best results, whole grain sorghum probably should not be used unless provision can be made to prevent its separation from the remainder of the fed mixture. Final decision on ration form would depend on availability and cost of processing which would be expected to vary widely under different conditions.

Two clinical cases of urinary calculi were observed at the termination of this experiment. Thus, the ration used here is potentially calculo-genic in nature. Other work has shown that this may have been prevented by the addition of either ammonium chloride or potassium chloride to the ration.
**Stilbestrol Increases Lamb Gains 15%**

Research at Iowa State University and elsewhere indicates that feeder lambs respond to stilbestrol with increased gains and efficiency much the same as fattening cattle, according to Tom Wickersham, extension sheep specialist at Iowa State University.

Wickersham said that use of stilbestrol can be of economic importance to lamb feeders. It is one thing they can do to help realize more profit. Use of stilbestrol has given a 15% increase in rate of gain and a 7% increase in feed efficiency.

Use of stilbestrol in lamb feeding has long been known to increase gains and efficiency, but has been criticized for undesirable side-effects that often occur. The present research showed that lowered levels of stilbestrol gave good results in the feedlot without causing problems.

The only problems associated with stilbestrol were 3 cases of urinary calculi and 1 case of rectal prolapse. But these were in lambs receiving a higher than recommended level of stilbestrol.

There was a tendency for a lowered carcass grade. This can be avoided by feeding to the desired grade rather than to a predetermined weight. When stilbestrol is used, lambs gain faster. The shorter feeding period means that lambs given stilbestrol will grade lower at a given weight than lambs without stilbestrol.

There are some practical problems involved in using stilbestrol. Ewe lambs don’t show as much response as wethers, especially when stilbestrol is fed rather than implanted. This means it might be desirable to separate ewe lambs and wethers for more efficient feeding. Wethers could then be fed stilbestrol and ewe lambs either implanted or fed without stilbestrol.

As lambs approach one year, a few more may be classed as yearling carcasses when stilbestrol is used.

Recommended stilbestrol levels are 2 milligrams per lamb daily when feeding, or use of a 3-milligram implant. Best results are obtained when stilbestrol is used with a well-balanced, completely mixed, high-energy ration of at least 11% total protein. Rations using dehydrated alfalfa and urea as a protein source are well adapted for use with stilbestrol.