Western South Dakota Sheep Demonstration Project

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Table 6. Vitamin A Concentrations in Blood and Tissues of Sheep

<table>
<thead>
<tr>
<th>Days after administration</th>
<th>Carotene injected (IM)b</th>
<th>Carotene drenched (IR)c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>Blood serum, mcg/100 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>10.29 (11)</td>
<td>12.49 (11)</td>
</tr>
<tr>
<td>6</td>
<td>15.39 (10)</td>
<td>18.22 (11)</td>
</tr>
<tr>
<td>13</td>
<td>15.75 (8)</td>
<td>17.06 (8)</td>
</tr>
<tr>
<td>27</td>
<td>11.23 (4)</td>
<td>10.64 (4)</td>
</tr>
<tr>
<td>Liver, mcg/g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.355 (4)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1,994 (3)</td>
<td>1.944 (3)</td>
</tr>
<tr>
<td>13</td>
<td>1.078 (4)</td>
<td>.816 (4)</td>
</tr>
<tr>
<td>27</td>
<td>.721 (4)</td>
<td>.879 (4)</td>
</tr>
<tr>
<td>Heart, mcg/g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.137 (4)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>.202 (3)</td>
<td>.143 (3)</td>
</tr>
<tr>
<td>13</td>
<td>.137 (4)</td>
<td>.142 (4)</td>
</tr>
<tr>
<td>27</td>
<td>.162 (4)</td>
<td>.181 (4)</td>
</tr>
<tr>
<td>Kidney, mcg/g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.254 (4)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>.235 (3)</td>
<td>.215 (3)</td>
</tr>
<tr>
<td>13</td>
<td>.220 (4)</td>
<td>.244 (4)</td>
</tr>
<tr>
<td>27</td>
<td>.219 (4)</td>
<td>.234 (4)</td>
</tr>
</tbody>
</table>

a Values in parentheses indicate number of observations used to calculate average.
b IM = intramuscular.
c IR = intraruminal.

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A sheep demonstration unit has been recently utilized to combine various successful research techniques and management practices to illustrate to current and potential producers the merit and profitability of a modified confinement system.

This project involved Cheyenne Feeders, Edgemont, South Dakota, as the demonstration unit. The unit utilized 1,000 ewes and unlimited housing consisting of old army buildings, several thousand acres of rangeland, predator-proof fencing around the perimeter and personnel who have experience and interest in the sheep industry.

Robert Cator, DVM, the manager and part owner of Cheyenne Feeders, was interested in increasing their sheep production and management. In cooperation with South Dakota State University personnel, a program was designed to increase the overall efficiency of their lamb production.

The main objectives of this project were to determine:

1. The capital required for animals and expected returns from a well managed sheep enterprise.
2. The manpower required for a sheep enterprise.
   a. As related to a family operation.
   b. As related to an operation in which lamb production is the primary enterprise.
3. Production level to be expected utilizing a relatively large flock under commercial management.
4. The effectiveness of predator control utilizing a complete confinement system.

**Procedure**

The following management calendar was presented to the demonstration farm during the 1975-76 production year:


1 Extension Sheep Specialist, Assistant Professor and Manager, Cheyenne Feeders, respectively.
Management Calendar - Cheyenne Feeders

August 21
- Wean remaining lambs off ewes.
- Sort and cull ewes to desired flock size.

September 5
- Worm ewes and vaccinate for vibrio (1st shot).
- Worm rams, check for epididymitis and breeding soundness, trim feet if needed.
- Start flushing ewes with 1/2 lb corn, fed on pavement.
- Start rams on 1/2 to 1 lb of grain supplement.

September 19
- Turn rams out with ewes.

October 3
- Stop flushing treatment.
- Vaccinate for vibrio (2nd shot).

October 24
- Remove rams from breeding pastures.

October-November-December-January
- Maintain ewes in thrifty condition on range with supplemental feed as necessary, i.e., up to 2 1/2 to 3 lb hay plus 1/2 lb corn.

February 1
- Bring ewes into sheds.
- Vaccinate ewes for C and D (1st shot).
- Shear.
- Continue on 1/2 lb grain plus 3 to 4 lb ground hay.
- Sort off heavies into first lambing pen area.

February 14
- Start lambing.
- Vaccinate ewes for C and D (2nd shot).
- Sort off second bunch of heavies.

Lambing Management
1. Jug lambs and iodine navels as they are dropped.
2. Dock as lambs leave jugs. Castrate ram lambs if they are not to be finished rapidly.
3. Separate ewes with twins from those with singles as they leave jugs.
4. Feed ewes with singles 1/2 lb grain plus ground hay free choice. Feed ewes with twins 1 lb grain plus ground hay free choice.
5. Pen ewes lambing prior to March 4 separate from those lambing after March 4.
6. Place orphans, triplets, weak lambs, etc. on bum feeder at 2 days or less of age.

March 21
- Lambing should be completed.

March 23a
- Vaccinate lambs born before March 4 for D (1st shot).

April 6
- Vaccinate lambs born before March 4 for D (2nd shot).

April 8a
- Vaccinate lambs born after March 4 for D (1st shot).

April 20
- Stop feeding grain to ewes lambing before March 4.

April 22
- Vaccinate lambs born after March 4 for D (2nd shot).

May 4b
- Wean lambs born prior to March 4 and turn ewes out to range.
- Stop feeding grain to ewes lambing after March 4.

May 18b
- Wean lambs born after March 4 and turn ewes out to range.

Finish lambs on high concentrate rations and sell as they reach appropriate weight.

Management Considerations for Artificial Rearing of Lambs
1. Mix dry milk replacer in small amount of warm water. Bring to desired dilution with cold water with final temperature of 35 to 40°F.
2. Add 1 cc of 37% formalin solution per gallon of milk.
3. Each lamb will consume 1/2 to 3/4 pound of milk replacer per day (2 to 4 pints of liquid milk).
4. Provide well ventilated, draft-free pens with heat lambs if necessary.
5. Provide bunks for dry feed and water facilities in each pen.

6. Vaccinate lambs for sore mouth if needed. If baby lamb pneumonia or coccidiosis is a problem, treatment with sulfon medication in the feed or water may be necessary.

7. Separate ram and ewe lambs at weaning.

7. Vaccinate lambs within the first 10 days with clostridium perfringes type C and D antitoxin if the lambs did not receive colostrum from immunized ewes.

8. Vaccinate for clostridium perfringes type D at 3 weeks.

9. Never let the milk run out. If this happens, it may cause overeating and scouring problems.

10. If lambs start to scour, use 250 mg tetracycline pills to counter scouring.

11. Clean utensils two times per week.

12. No more than 25 lambs to a lunch box unit. A light over the box will attract lambs to drinking.

13. Lambs should be weaned at 30 days of age weighing 25 pounds.

**Tips for Starting and Training Lambs**

1. Place on milk replacer at as early an age as possible. Younger lambs train easier.

2. Small pens (6' x 8'), well bedded, under heat lambs are desirable.

3. When Lamb-Bar nipples are used, keep the liquid near nipple level for easy suckling.

4. Allow lambs to become hungry before introducing them to cold milk (6 hours after last colostrum feeding).

5. Presence of one or two trained lambs will help others to learn to suckle.

6. Assist untrained lambs every 6 hours until trained.

**Results**

On September 19, 1975, 986 aged western, white-faced ewes were exposed to the rams. Nine hundred ten of these ewes lambed. This represents 91% of the ewes exposed, which is lower than would be expected. However, these were old ewes, of which 81 died during the year.

The 910 ewes that lambed had 1299 live lambs at 48 hours after birth. A 143% lamb crop was alive at 48 hours after birth for ewes lambing, or a 132% lamb crop for ewes exposed. Sixty lambs were raised as orphans with a total of 1266 lambs marketed. From the ewes that lambed, a 135% lamb crop was marketed, with a 128% lamb crop marketed from the ewes exposed.

Lambs marketed averaged 84 pounds per head. The average selling price was $49.64 per hundredweight, with an average price per lamb of $41.80.

Ewes were shorn 2 weeks before lambing with a wool clip of 12.16 pounds per ewe. The wool was marketed at $.60 per pound grease price.

Feed for the ewes represented the largest single cost for the year. Ewes were flushed starting September 15, 1975, with .5 pound of corn per day per ewe. This level of grain was then fed during the gestation period. The ewes were in excellent condition prior to lambing.

On January 1, 1976, the ewes were brought into the sheds and maintained until weaning. While in the sheds, the ewes received (in self-feeders) dehy, corn, molasses and beet pulp with a high level of salt to control consumption. Ewes were in confinement for a period of 109 days (February 1 to May 20). Average feed consumption during this time was about 6 pounds of feed per ewe per day. Hay was hand-fed during this time. The ewes consumed 658,340 pounds of total feed while in the sheds (this also includes the corn fed during flushing and gestation) for a cost of $29,902.31.

Lambs were provided a 13% protein creep ration when they were about 1 week of age. The creep ration was composed of 23.25% oats, 5% corn, 25% dehydrated alfalfa, 60% beet pulp and 6.75% of a commercial 32% protein supplement. The lambs were finished on a series of rations starting with a 12.5% protein level that decreased to 10.6% protein at the time lambs were marketed. Lambs consumed an average of 2.01 pounds of ration per day from the time they were started on creep until marketing. Average daily gains for this period were 1/3 pound.

Labor costs in the operation amounted to $9,501. This included four men alternating 12-hour shifts during the lambing period (46 days). One man was figured on a 70% basis for 11 months. In a family situation consisting of a husband and wife with several children, this cost could be decreased considerably.

Following is the listing of cash receipts and expenditures:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lambs sold</td>
<td>$52,918.80</td>
</tr>
<tr>
<td>Wool</td>
<td>7,228.78</td>
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<tr>
<td>Wool incentive</td>
<td>3,598.20</td>
</tr>
<tr>
<td>Ewe feed</td>
<td>23,902.31</td>
</tr>
<tr>
<td>Lamb feed</td>
<td>14,517.88</td>
</tr>
<tr>
<td>Labor</td>
<td>9,501.00</td>
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<tr>
<td>Medicine</td>
<td>355.70</td>
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<tr>
<td>Shearing</td>
<td>838.10</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$54,759.29</strong></td>
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