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Loose-Housing for Dairy Calves

Purdue University Cooperative Extension Service

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Loose-Housing for Dairy Calves

Dairy calves can be raised in open sheds during cold winter months. Reports of successful farm operations in Indiana are backed by conclusive research reports from the Washington State Agricultural Experiment Station.  

Research Results

Calves were successfully raised in open sheds located at the western Washington Experiment Station, Puyallup and at the main station at Pullman.

During winters of 1949 and 1950 researchers used conventional barn facilities and open sheds to raise calves. Of 34 calves housed conventionally, 24 percent were lost (8 of 34). In the open shed, only 2 percent of 57 calves died (1 out of 57). In addition, calves housed in the open sheds had practically no respiratory ailments (colds and pneumonia) and scours were reduced to a minor problem.

During the entire 13 year experiment (1948 to 1961) 527 heifer calves were placed in open shed housing at 3 days or less of age. Of these calves, 514 survived to 5 months--

![Image](Figure 1. Open sheds like this one were used in experiments at the Washington State Agricultural Experiment Station.)

Table 1. Death losses, heifer calves housed in open sheds, Washington State Agricultural Experiment Station, 1948 to 1961

<table>
<thead>
<tr>
<th>Breed</th>
<th>Calves living at 3 days</th>
<th>Deaths by end of one month</th>
<th>Deaths from 1-5 months</th>
<th>Survival percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jersey</td>
<td>142</td>
<td>4</td>
<td>2</td>
<td>95.8</td>
</tr>
<tr>
<td>Guernsey</td>
<td>141</td>
<td>3</td>
<td>1</td>
<td>97.2</td>
</tr>
<tr>
<td>Holstein</td>
<td>244</td>
<td>2</td>
<td>1</td>
<td>98.8</td>
</tr>
<tr>
<td>Total</td>
<td>527</td>
<td>9</td>
<td>4</td>
<td>97.5</td>
</tr>
</tbody>
</table>

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Washington State Cooperative Extension Service Circular 211, Raising Dairy Calves in Open Sheds, October 1952.

Dairy Section • Animal Sciences Department

Cooperative Extension Service, PURDUE UNIVERSITY, Lafayette, Indiana
Figure 2. Calves were fed and watered at the front of their individual pens inside the open shed.

an amazingly low death loss of 2.5 percent (see Table 1). Mortality figures generally quoted for raising dairy calves range from 15 to 20 percent.

Temperatures in these 13 years dropped as low as -21°F. and heavy fog and high humidity were common during the milder periods.

The heifers in open sheds outgained those housed in barns. At 24 months, Holsteins in open sheds were 5 percent heavier and Jerseys were 11 percent heavier than the controls in conventional barns.

Effect of Temperature

Calves under 2 weeks of age gained slower when temperatures were lowest. During the coldest weather calves over 8 weeks of age outgained those housed in the conventional barn.

Feed Consumption

Calves housed in the conventional barn ate less hay and grain per pound of gain during all seasons of the year. Some additional feed was used by calves in the open shed to keep warm. Also, these calves had more room to exercise and they took full advantage of it. They were more muscular and more solidly fleshed than calves housed in the conventional barn. Considerable extra feed was undoubtedly consumed to supply the extra energy for exercise.

Building Precautions for Open Shed

1. Face the open side to the south-east or south, or away from prevailing winds.

2. Keep calves in individual pens to prevent sucking as long as they are being fed milk.

3. Construct the closed side, the ends, and the ceiling solidly to avoid passage of air. The ceiling should be approximately 8 feet at the highest point.

4. The eave on the open side should provide a low clearance. Too much wind blows into the calf pens if this eave is higher than 4 to 5 feet.

5. Do not have solid partitioning on the outside runways—otherwise sunlight will be cut out.

6. Build calf pens a minimum of 11 feet long under the roof so that calves can get out of drafts.

7. Do not tie calves. Let them exercise freely when housed in an open shed.

8. Use sufficient bedding to keep the pen dry.
Figure 3. Details of construction of an open shed similar to those used in the Washington experiments.