

Calving Ease

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By Sam Leadley of Attica Veterinary Associates



Bedding Calves for Cold Weather

Summary

Clean. Dry. Draft-free environment. Enough.

Ideal housing for preweaned calves is described as clean, dry and draft-free. Bedding contributes to all three of these essential characteristics.

What is ideal bedding?

Clean. When added to hutch or pen it is as free of soil, mold, and pathogens as we can maintain it. The first two of these contaminants can be assessed visually. It is especially important if using sawdust that you check for soil contamination. Soil, or more commonly "dirt," mixed with sand, sawdust, straw, corn stalks or soybean trash can carry high loads of Klebsiella bacteria. I see a huge variation from "bright and clean" to "loaded with dirt" among on-farm bedding supplies.

Chopping bedding and blowing on top of calves and heifers can be a dusty business. However, when the bedding is "loaded with dirt" I believe this is especially risky for lung health. When I have been in barns where this is being done the suspended particle load appears almost beyond measurement! I have to run for my life or else risk coughing up black stuff for several days.

When bedding is in a hutch or pen cleanliness can be assessed visually. My goal is to have at the very minimum one clean area that is at least 6 to 9 square feet; a clean place for the calf to lie down.

Dry. As added to the pen or hutch the bedding should feel dry. This includes sand, straw, corn stalks, paper, wood shavings and sawdust bedding. Bedding materials that often contain undesirable moisture level are those baled damp and those stored out-of-doors.

If you are in doubt before the product is used for calves you can use your farm's equipment for doing dry matter testing for corn silage and/or haylage. I use a Koster Crop Tester and a scale. I take a grab sample and put it into the crop tester. I like to use an even amount to make easy figuring. Relatively dry bedding may only take 15 minutes before repeated weights show no decrease. Damp samples make take half an hour or longer until the weight no longer goes down.

I check my sample after 15 minutes and record the weight. I let it run 10 minutes more and check weight again. I repeat this until I get two weights that are very close. Then I stop and figure my moisture level.

When bedding is already in a hutch or pen, use the "knee-drop" test for bedding. You should be able to remain on your knees for 15 seconds or longer without having damp knees. Don't be surprised to find

very wet bedding underneath a thin layer of clean dry bedding. The moisture will wick up and quickly soak your knees within moments after you kneel.

Remember, with calves lying down 18 or more hours a day the reason we are concerned about wet bedding is that calves lose heat rapidly down through it. I recall reading recently that the heat transfer can be 60 percent greater down through wet bedding compared to that which is dry. [See also at www.atticacows.com, click on Calving Ease and select November 2006.]

Draft-free. Does the bedding contribute to a stable pocket of air immediately around the calf? Think of a calf on a slatted floor as the least stable air environment. Think of a calf up to her ears in a nest of bedding as the most stable pocket of air.

In a research report dry hardwood shavings and straw bedding materials were compared. Temperatures averaged 20°F in the naturally ventilated calf barn. Calves were fed to gain at least one pound of gain per day. Enough bedding was added to keep the pens dry. Success was measured as amount gained in 56 days. In two trials calves on straw bedding gained between 5 and 9 more pounds than those bedded on hardwood shavings. We may speculate that the major factor involved was the ability of straw-bedded calves to "nest" in their bedding. This nesting provides an insulating stable air environment. Perhaps nesting cut down body heat losses and left more energy for growth. Think about it!

Several experts have suggested a standard for a cost-effective amount of straw bedding. They say bedding should be enough so that you cannot see calves' feet when they lie down.

Enough. While not a characteristic of bedding type, having enough bedding to act as insulation is important. By kneeling on the bedding for between one and two minutes you can sense how adequately the bedding is protecting calves from the cold pen base.

Reference: T.M. Hill and Others, "Effects of feeding rate of milk replacers and bedding material for calves in a cold, naturally ventilated nursery," *The Professional Animal Scientist* 23:656-664 (October, 2007).

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