

CALVING EASE

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Try Sleeping on Concrete!

- **Concrete is always hard; no soft spots in which to get comfortable.**
- **Concrete is the same temperature as its environment; in the winter the concrete floor in a barn is just about as cold as the air in the barn.**
- **The insulation value of bedding depends on the material itself (R value), thickness and moisture content.**
- **Simple on-farm testing can assure the calf care person that calves will be warm and comfortable.**

Well, maybe it is a bit of exaggeration to start this article with a focus on just concrete. I really mean to refer to the base underneath either individual or group pens for preweaned calves. In addition to concrete it could be some other kind of paving, crushed stone or gravel or even just plain dirt.

Hard is hard is hard!

If I have calves on pasture in warm weather and they have a choice in the shade of where to lie down, either on concrete or grass, which place do you think most of them will lie down? Yes, you are right – on the grass.

Thus, one of the purposes of pen bedding is to buffer the hard, unforgiving surfaces of the pen base (regardless of the material). Remember that young calves lie down a lot. Approaching 95 percent of the time at first and slowly decreasing as calves approach weaning age. We can manage stress associated with lying comfort by using enough bedding to buffer the typical hard pen base.

Cold is cold is cold!

When is the last time during the winter you voluntarily sat outdoors on a concrete curb or post? How long did it take for your body warmth to leach down out into the concrete?

If you doubt how cold the concrete is under the calves look in the alley. If water is frozen on the concrete in the alley you can bet that the temperature of the concrete in an empty calf pen is plenty cold enough to freeze water also.

Insulate, insulate, insulate!

Thus, another purpose of pen bedding is to insulate the lying-down calf from the cold pen base. In the summer we are not worried about this because the ambient air temperature is usually above the point where calves are trying to get rid of excess body heat. Once that surrounding air temperature drops below about 60° calves begin to burn body resources in order to maintain their core body temperature at about 102°.

Just for reference, poured concrete has an R value of 0.08 - transmits heat easily. Dry sawdust is somewhat higher than R=1/inch. Dry shavings R value is about the same. Long wheat straw R estimates fall between 1.5 and 3/inch – compaction seems to be a factor here.

With my calves I used one bale of dry shavings (insulation and high capacity to absorb moisture) under a small square bale of long wheat straw per pen (one calf). I admit that for the first day when calves laid down they seemed to disappear into the straw.

My goal on adding more bedding to this base was: (1) to keep things clean enough so that hair coats stayed pretty clean, and (2) to keep the calf dry.

Simple, on-farm testing

Moisture testing is very straight forward. Starting with dry fabric on one's knees, just kneel in the pen for 30 seconds or more. If as you stand back up the fabric at your knees show wetting, not enough new bedding is being added. R values of both straw and wood shavings plummet when they get wet.

Temperature testing requires a bit more time in my opinion. When working with calves in hutches in the 1980's I noticed that when I crawled into a hutch in the winter to treat a calf my knees would get quite warm. After a few years of observations I concluded that there was significant variation among hutches. Sometimes my knees got colder; sometimes my knees got warmer.

My recommended protocol is to kneel in a hutch or pen for about two minutes. Think about temperature at your knees. Up or down? Now, if you are wearing long-john's, lined jeans, and insulated overalls your kneeling time probably should be longer to get a valid response.

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