

LOOK AT YOUR WET CALF PROGRAM through their eyes to find ways to improve both comfort and daily gain.

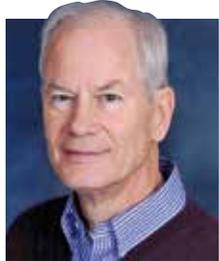


Calves need comfort, too

Three factors, bedding, ventilation and space, play a significant role in how calves turn out.

by A.F. Kertz

PREVIOUSLY, I had suggested that we need to recognize the two weeks before and after weaning as somewhat analogous to the transition period that cows undergo before and after calving. It recently occurred to me that there is another analogous situation to cow comfort factors — calf comfort factors.



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I had this revelation while doing consulting work in other countries. That does not necessarily mean this is more of an issue in other countries but a reflection that often we recognize something in a very different environment or location than when we see it in familiar places. So what are these calf comfort factors?

Sand when warm; straw when cool

The first one is **bedding**. Research in this area is somewhat spotty. It seems that sand may be better in the summer because it is cooler for calves, does not foster bacteria growth, and should be drier provided that there is some drainage and sufficient quantity used.

On the other hand, straw should be better in cold weather if enough is used to create “fluffiness.” This helps trap air so that, when calves lie down, insulation value is maximized. There is even a nesting scoring system developed for this by Ken Nordlund and associates at the University of Wisconsin School of Veterinary Medicine. In an extensive field study with 13 calf barns in Wisconsin during winter from

mid-January to mid-March, a nesting score of 3 was only assigned to pens with deep, long-straw bedding, while a score of 1 was assigned to sawdust or sawdust on sand.

By being able to nest deeply in straw, calves are able to create a microenvironment, trapping a boundary layer of warm air around them, which reduces their lower critical temperature. However, they also found that the average moisture content of bedding in these barns was about 50 percent. Just think, a major reason to use bedding is to keep calves dry and to minimize heat loss and respiratory problems.

Wet bedding wicks body heat from calves. You do not need a moisture tester to determine the wetness of bedding. Use the wet knee test, and kneel in the bedding. If your knee gets wet, more dry bedding is needed. On the other hand, do not use moldy or particularly dusty bedding because that can also contribute to respiratory problems.

Two sides to solid sides

A second issue in calf comfort is **ventilation**. Again, Ken Nordlund and associates have done key work in this area. He has found that you should target a minimum of four air exchanges hourly. Often, especially in winter, there is a tendency to restrict airflow around a calf to prevent drafts. But in so doing, air will become more humid and bacteria laden.

In taking numerous air samples for bacterial levels, they found that the more solid sides that enclosed a calf, the greater bacterial levels were. Calf respiratory diseases became elevated with greater bacterial concentrations in the pens and dropped with the presence of solid dividers between pens. This supports the fairly standard recommendation of solid dividers between young calves to help reduce the exchange of airborne pathogens and prevent nose-to-nose contact.

Addition of solid barriers at the ends of

pens or as a solid roof, however, elevated pen bacterial counts. Bacterial counts were significantly higher in pens than in alleys. While there was also a significant association between alley and pen bacterial counts, this reflects that the main sources of airborne bacteria in barns are the animals themselves and the bedding materials.

However, they also found that air quality was quite different in the alleys compared to in the calf pens, indicating a poor mixing of air within the barn. Pens can become microenvironments within the barns. Rising air temperatures within the calf pens were also associated with higher bacterial counts. While straw bedding was associated with a rise in bacterial counts compared to either sawdust or wood shavings, their study suggested that the benefits of nesting in deep straw outweighed the former negative effect. It also reinforced the need to use plenty of dry straw for bedding to minimize bacteria growth.

I have seen situations where roofed barns in hot weather were not ridge ventilated. The overriding concern was for when it rained, which is only a small portion of the total time; but that exception then becomes the rule because of not wanting wetness inside the barn. We need a creative method to shut an open ridge just during times of rain so that it can be open the rest of the time.

On the other hand, do not forget the related issue of hot weather. The basic requirement is to provide shade. Lack of it for dry cows will negatively affect their production and reproduction in the subsequent lactation. It will also shorten the pregnancy, lead to lower calf birth weights and get the calf off to a poorer start.

In a California study, yearling heifers had 0.4 pound more daily gain and nine fewer breaths per minute when shaded versus sprinkled. In a Washington state summer study, propping up the bottom back of hutches with a concrete block reduced respiration rates of calves from 58 to 44 per minute (normal is 24 to 26). Providing shade cloth over hutches on one Michigan dairy farm reduced interior temperature by 5 to 7°F.

Room to move essential

The third factor is **amount of square feet per calf**. The recommended minimum is 24 square feet per calf, enough so that the calf can turn around in its stall. If a preweaned calf does not have this much space available, it will eat less starter than it should as it grows larger. Unless there is some measure of starter intake, this may not be evident.

With a good feeding program, and a good texturized starter, intake should approximately double each week through weaning. In one case where starter intake was measured, I saw that, after the first three weeks, the rate of starter intake slowed down because calves only had one-half the space needed. This was truly a calf comfort issue that affected intake and correspondingly reduced daily gain.

These three factors are not the only ones affecting calf comfort, but they do have a major impact on calf performance. The starting point in this arena is to look at your own operation and try to take a calf's-eye view of these and other factors that affect calf health and behavior. This may necessitate measuring intake and daily gain, at least for some calves, to establish the baseline for your operation. 🐄