

CALVING EASE

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Sam Leadley, Attica Veterinary Associates

At what price crowding?

One stressor for transition calves is too little resting space. Resting space is defined as that space used exclusively for calves to lie down. It excludes feed alleys and three feet next to any waterer or feeder. For practical purposes for confinement rearing it makes sense to also exclude areas with no bedding.

Why be concerned about stress?

Stress takes two forms. One form is the single event stress. For example, receiving a vaccination. Most of the immunosuppressive effects are concentrated in the first 3 to 5 days after the event. Although, we should be aware that lingering immunosuppression may last as long as 2 weeks.

The other form of stress is sustained stress. In addition to too little resting space, other examples are wet bedding, elevated ammonia levels, too little feed, subclinical coccidiosis, and frequent changes in pen population.

Both kinds of stress are undesirable. The negative consequences including both weakened immunity and less efficient feed conversion are constant. However, with event stress there is light at the end of the tunnel. The downside gradually gets less and less with both immunity and feed conversion level rebounding to prestress levels.

Unfortunately with sustained stress we often find that the compromised immunity and the feed conversion levels lead to a downward spiral in health and general wellbeing.

So, what constitutes crowding?

When are transition calves stressed from having too little resting space? The first thing to remember is that the “minimum stress” standard is a variable number. To the extent that calves have places to eat, drink, stand around and circulate that are in addition to the resting space the lower the “standard” can be. To the extent that everything has to happen in one restricted space then the higher the standard.

One reference, Penn State Housing Plans for Calves and Heifers, uses the figure of 35 square feet per transition calf. That is their standard for a low stress resting environment. As the amount of space per calf goes down the level of stress goes up. My field observations suggest that this is not a simple linear relationship. That is, for every decrease of 5 square feet the stress level does not go up the same amount.

The relationship between space and stress is more complicated. The decrease from 35 to 30 does not seem to generate very many extra cases of treatable respiratory illness. In contrast, the drop from 25 to 20 square feet per heifer seems to push the animals into a pretty high stress environment. Cases of treatable respiratory illness are much more common.

At levels below 20 square feet of resting space per calf the treatment rates may approach 100 percent. When absolutely no other housing option is feasible in the short run many managers have to incorporate feed-grade antibiotics in the heifers' rations. As levels fall below 15 square feet per heifer even constant antibiotic feeding will not prevent treatment rates in excess of 25 percent.

Is there anything we can do?

Clearly the solution is to buy, build, or rent more space. Short of those options, what else can we do to manage our way of this kind of a space bind? The first option is to have strong, healthy calves coming out of the individual pens. That means having an excellent rather than just good colostrum management program. In addition, calf nutrition is at a level well above maintenance needs. Calves have grown close to their genetic potential (for example, they have gained between 90 and 100 pounds in the first 50 days).

Second, in consultation with the herd veterinarian set up and follow an aggressive vaccination program. For example, by the time calves move into the overcrowded transition pen they have received two modified-live vaccines. Depending on the individual farm pathogen profile, additional vaccines may be desired.

Third, manage the transition pen to reduce pathogen exposure. On most farms this means doing things like cleaning scrape alleys more often, bedding to a positive "knee-drop" level [when you kneel on the bedding your knees do not get wet], and ventilating so that the air exchange rate is high enough to discharge airborne pathogens regularly.

Avoid additional forms of stress. For example, minimize the number of feed changes, avoid any more vaccinations, be sure the coccidiostat is being fed at the appropriate level, and do not dehorn in this pen. If the heifers must be handled use enough gates and people so the heifers do not get run around [No Rodeo Event!].

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