

CALVING EASE

April 2006

Sam Leadley, Attica Veterinary Associates

Too Many Stresses

Many stresses occur in the first few months of a calf's life. Just being born is a huge stress. We have only limited control over that one.

Other stresses, however, are the result of management decisions. Managed one way, too many stresses can be too large and occur too close to each other. Better management has the potential to reduce these stresses and, certainly, spread them out over time.

Why is stress undesirable?

During a presentation to the calf raisers' group in northwestern New York, David Hale, DVM, made these points about stress.

"When a calf is stressed the brain signals the adrenal glands to begin making a steroid hormone, cortisol. Five of the main effects of cortisol are:

1. Blood pressure increases.
2. Strength of heart muscle contraction increases.
3. Blood is diverted from peripheral organs to vital ones (for example, from feet to heart and lungs).
4. Blood sugar goes up and sugar use by body cells goes down.
5. Acute reactions of tissue cells to trauma and/or toxins is prevented or inhibited.

We usually see these five effects of cortisol as positive. That is, they are critical for survival in live threatening situations. But! There is always a downside to cortisol, too. It decreases the body defense mechanisms in at least four ways:

1. Cortisol decreases white blood cell movement to infection sites. It also decreases destruction of foreign material by body cells (phagocytosis).
2. Cortisol decreases interferon production (interferon is the body's alarm system for viral infections).
3. Cortisol decreases production of two types of white blood cells (eosinophils and lymphocytes).
4. Cortisol decreases antibody production.

All this adds up to the body turning off the immune system defenses in an attempt to survive crisis situations. On one hand, this may increase short-term survival. On the other hand, the result is often overwhelming infection and death.

Reducing stresses and spreading them out

Start with a low-stress environment for prefresh cows.

Overcrowded resting areas, too little bunk space, inadequate bedding and poor air quality all add to stressful conditions for prefresh cows. The stress induced cortisol release in these cows will negatively effect the calf even before birth.

Pathogen load in the calving area

The cleaner the calving area the lower the chances of adult cow manure getting into a newborn's mouth. As soon as a calf can stand up is the time to get her in a clean place. Some dairies have a place where the mother can lick the calf but the calf cannot reach the dam's contaminated hair coat.

Adequate nutrition

All calves should have enough to eat to meet not only their maintenance needs but also to grow. If dry matter intake from milk, milk replacer and/or calf starter grain falls below maintenance levels, the calf is under a lot of stress. Most often, this occurs in below freezing weather.

Moving calves from one place to another

Loading calves on and off a stock trailer is a stressful event. Even moves of less than ten minutes still involve the "on-off" event. Best management suggests that we plan housing to minimize the number of these events.

Weaning calves

Weaning -induced stress may result in cortisol release for as long as a week. What are the cumulative effects of this extended suppression of the immune defenses? Look for at least reduced rates of gain for the week post-weaning. Alternatively, we may see pneumonia in calves five to seven days after weaning.

Moving from individual to group housing

Just moving from individual to group housing is stressful. This change may be separated from a move to a new barn by having pens that convert from individual to group size. Nevertheless, being in a group is still a stress. In addition, every subsequent group change will add stress among transition heifers.

Management tasks such as dehorning and vaccinating each add more stress although for a relatively short time

Stacking stresses is the granddaddy of all mistakes. Alone each of the items above is a threat to calf health and growth. When events happen at the same time, the risk is much higher for respiratory illness and lower growth rates.

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