

Calving Ease

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Fall Weather and Newborn Calves: Part 2

What does fall weather “volatility” have to do with managing newborn calves? Regardless of our housing (indoor barns, outdoor hutches) our calves face many of the same challenges. These challenges include:

- Maintaining a constant body temperature in variable environmental conditions. (Part 1- September issue)
- **Defending against pathogen challenges.**
- **Developing the gut capacity to digest food.**
- **Eating enough easily digestible food to meet maintenance and growth requirements.**

Defending against pathogen challenges.
Developing the gut capacity to digest food.

Much of the weather volatility associated with the fall season includes rain. When combined with cooler temperatures the outdoor calf housing is challenged by mud. Indoor calf housing is challenged by high humidity conditions. In both situations the level of pathogen exposure for newborn calves is high, especially compared to dry hot summer conditions.

Feeding an adequate amount of clean, high quality colostrum as soon as possible after birth is the gold standard for defending newborn calves against pathogen challenges. It's a well-established fact that breakdowns in colostrum feeding routines leave calves unable to defend themselves when exposed to bacteria, viruses and parasites.

ACTION ITEM: Regularly check on colostrum management effectiveness by drawing blood on calves and assessing blood serum total protein levels. We want to see 90% at 5.0 and above, 75% at 5.5 and above.

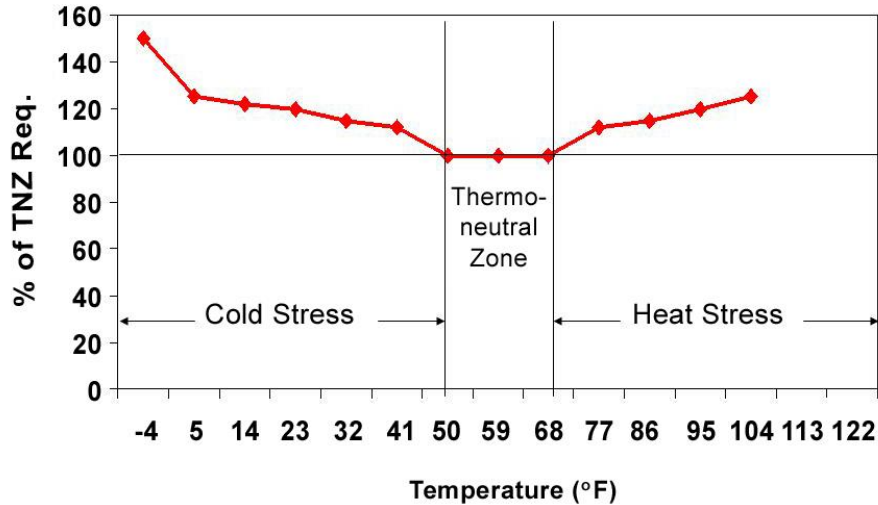
Of special importance is providing colostrum that is low in bacterial contamination. When introduced to the gut bacteria in colostrum, especially coliforms, bond to the gut surfaces and establish colonies. These colonies may release significant amounts of toxins that may increasingly interfere with “normal” digestion over the first two weeks of life.

Not so well known is the role of colostrum in the development of the gut (gastro-intestinal system). Feeding colostrum encourages the rapid maturation of gut tissues. Even if colostrum is not available beyond the first feeding, feeding transition milk (2nd, 3rd, and 4th milkings) can further support the development of tissues lining the intestinal track. As these tissues mature they are more capable of digesting nutrients, especially the proteins and fats in milk.

Eating enough easily digestible food to meet maintenance and growth requirements.

It is known that colder conditions require greater energy from calves to maintain their constant body temperature. See the figure below (TNZ = thermal neutral zone)

Figure 1. Effect of ambient temperature on calf maintenance requirements.



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Feeding more energy is the key to keeping growth rates steady as temperatures fall. One choice is to just feed a greater volume. Another choice is to increase the dry matter concentration of milk or milk replacer – for example, bump up from 12.5% solids to 15% solids. A more expensive and complex solution is to increase the energy by adding fat to the milk ration.

A series of tables showing estimated rates of gain for both whole milk and selected milk replacers are available at www.atticacows.com in the section “Calf Facts.” Choose “Est.GainsPrewaned Calves” to go to the table inventory. Scroll through the selections until you find the product closest to what you are feeding. The tables provide estimates of gain at selected daily feeding rates at 20, 40 and 60°F.

ACTION ITEM: For feeding in weather in the cold stress zone, remember to feed milk at calf body temperature (102°F). If we feed any liquid (either milk or water) below her body temperature she will have to use precious body energy stores to warm the liquid up to 102°F.

By providing free-choice water and a palatable calf starter grain we can also encourage early development of the rumen. Even a large handful of grain daily can provide a significant amount of the energy needed to meet maintenance needs in cooler weather.

References: Quigley, J., “Calf Note#59 – Environmental Effects on Calf Feeding – Basic Concepts” at www.calfnotes.com. Broadwater, Neil, “Caring for calves in cold climatic conditions.” Accessed 8/26/16 at <http://www.extension.umn.edu/agriculture/dairy/calves-and-heifers/caring-for-calves-in-cold-climatic-conditions/> Penn State University, “Minimizing Calf Stress in Winter Months” accessed 8/26/16 at <http://extension.psu.edu/dairy/news/2012/minimizng-calf-stress-in-winter-months>

Remember to search for “Calves with Sam” blog for profit tips for calf rearing.