Calving Ease

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By Sam Leadley of Attica Veterinary Associates

Fall Weather and Newborn Calves: Part 1

Many of my memories of fall weather are captured by the word "volatile." Weather apt to change quickly, somewhat unpredictably and sometimes creating undesirable living conditions for newborn calves. Think of thirty degree swings in temperature from night to mid-day, clear and sunny T-shirt weather one day changing to cold driving rains for the next two days.

What does 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. (this issue)
- Defending against pathogen challenges. (Part 2)
- Developing the gut capacity to digest food. (Part 2)
- Eating enough easily digestible food to meet maintenance and growth requirements. (Part 2)

Maintaining a constant body temperature

Newborn calves have a "thermal-neutral zone" of environmental temperature within which they use energy to neither warm nor cool themselves. That is, when outside temperatures are between 50°F (10°C) and 68°F (20°C) healthy newborns can easily maintain their "normal" 102°F (39°C) internal body temperature.

What are the conditions that increase the energy demands even if fall season temperatures are not consistently below 50°?

- **Wet hair coats** – a dry fluffy hair coat acts as an insulating layer between the calf's skin and the environment. Think of a calf with a wet hair coat as similar to yourself stepping out of shower – chilly even in summer weather. Ever take a shower in an unheated campground building in early fall? Around 50°? Shiver city! Can't get toweled off quickly enough.

  ACTION ITEM: Plan for drying off newborns before they get moved to permanent housing. A resource on drying off calves is available by clicking HERE.

- **Inadequate bedding** – the two primary ways bedding reduces energy demands for newborn calves are slowing down losses due to (1) conduction and(2) convection. When bedding is thick and dry, heat losses from a calf's body are reduced.

  ACTION ITEM: Test your bedding for insulation value (conduction heat loss potential) – kneel on the bedding for a full minute – if the bedding is protecting your knees from the concrete

or ground during fall weather your knees should begin to get warmer because they are no longer exposed to cool or cold air. When you stand back up look at your knees – do they look wet? If "yes" that's a clue why insulating value is low. If they are still dry and you did not feel any warming maybe the layer of bedding is too thin.

During fall weather convection heat losses may not seem important. But, try sitting on a concrete step in September or October. Unless it is in direct sun at high noon your butt will get uncomfortably cold fairly quickly. Newborn calves lie down more than ninety percent of the time. Even at two weeks of age calves typically lie down as much as 80 to 85 percent of the time. Get the picture? Bed well enough to insulate these babies from cold ground or concrete.

ACTION ITEM: Convection heat loss is due to excessive air movement around the calf. Bedding helps reduce this by providing a "nest" for the calf. A generally accepted standard for "adequate" bedding is a nest deep enough for a newborn so that an observer cannot see the calf's feet when she is lying down. **What proportion of your newborns are bedded well enough so you cannot see their feet?**

What if our bedding does not "nest?" This is a problem for sawdust and somewhat also for wood shavings and certainly for sand. My suggestion is to start using calf blankets for newborn calves earlier in the fall when using these types of bedding compared to housing using long straw bedding. For example, if your farm location indicates starting to blanket newborns in early November with long straw bedding, then maybe with bedding that does not provide nesting it would be a good practice to begin blanketing newborns four to six weeks earlier.

- **Excessively high air movement** (that's a fancy way of saying drafty) – during volatile fall weather we may need to turn off fans over stalls housing newborn calves. Sometimes temporary solid panels may be placed to slow down air movement next to newborn calves. Or, when placing newborns in hutches we need to close rear hutch vents and place the hutches tight to the ground. In group housing I have seen large square bales of straw placed in pens to provide temporary shelter from drafts.

Volatile Fall Weather and Calf Blankets

Always remember that the cleaner and drier the blankets the better they insulate the calves. Any morning when you have to wear a long-sleeve shirt at 6:00 AM to check calves start thinking about using blankets on newborn calves. If fall weather continues to be warm it's fine to take them off by the end of the third week.

References: University of Minnesota, "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 Ollivett, T.L. and Others, "The effect of respiratory disease on lying behavior in Holstein calves." Journal of Dairy Science 97 (E Suppl. 1):17 (Abstr.) Overvest, M. A. and Others, "Time budget and rumen development of dairy calves around time of weaning." Journal of Dairy Science 97 (E Suppl. 1):399-400. (Abstr.)

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