



# DECEMBER 2020 NEWSLETTER

## For Calf's Sake – What are the energy requirements of my calves in winter?

You either enjoy WI winters, or you don't! A better question you need to ask is...do your calves enjoy WI winters? As the holiday's role around, we know the thermometer starts falling and nights start feeling cold. Now is a good time to assess your current calf program and make necessary changes to improve calf health before things get cold.

Every winter, it is common for us vets to necropsy a sick/dead calf and find a complete lack of fat deposits in their abdomen and chest. These are calves that were in a negative energy balance or starved to death. Sometimes we say these calves died of "a-groceriosis." Basically, we did a poor job getting groceries/calories into that calf to keep up with its physiological needs. It's important for us to understand the energy requirements of calves in winter to help prevent this scenario.

Every calf has a thermoneutral zone (TNZ). This is the temperature range where the calf's environment does not affect its nutritional needs. The calf does not have to expend energy to maintain its body temp. For a 1-week old calf, it's TNZ is roughly 60 to 75°F. As the temperature moves outside that range, the calf starts utilizing energy from its diet (calories from milk) to maintain body function. The lower the thermometer drops, the more calories the calf needs to consume (see table below). If a calf is not consuming enough calories each day, they will start utilizing the calories they've stored internally (fat and muscle). A calf can only keep this up for so long. A calf starts to starve when one of the following scenarios happen:

- We limit/underfeed calories in the milk diet
- We have underlying disease challenges (calf utilizes significantly more calories when its immune system is responding to pathogens that cause disease)
- We poorly manage the calf's environment

Amount of milk a 100# calf needs to consume to meet maintenance requirements and grow 1.5# per day						
Ambient Temp (°F)	68	32	15	5	-5	-20
#'s milk solids fed/day	1.75	2.1	2.2	2.4	2.5	2.6
Qts / day (12.5% total solids)	6.6	7.6	8.0	8.8	9.2	9.5
Qts / feeding (feeding 2x/day)	3.3	3.8	4.0	4.4	4.6	4.75
Qts / feeding (feeding 3x/day)	2.2	2.5	2.7	2.9	3.1	3.2
% Increase in caloric needs compared to same calf in TNZ	-	20%	26%	37%	43%	49%

Here are some points to consider with your calf program moving into the colder months:

- Are you feeding enough milk calories to keep your calves healthy and growing? If you need to get additional calories into your calves, what is your plan?
  - Can you offer an additional feeding of milk each day? My preferred method of getting additional calories into calves is to offer a 3<sup>rd</sup> feeding. It is important to attempt to evenly space the 3 feedings throughout the day (7-8 hours between meals).
  - If 3x/day feeding is not possible, can you increase the volume of milk being fed at each feeding? Increasing meal size by 1-3 pints of milk, will help considerably.
  - If those two options aren't possible and you feed milk replacer or add a nutritional additive to waste milk (balancer)...can you increase the % solids per unit of volume fed? An example would be mixing milk replacer at 14.5% solids instead of 12.5% solids. This will get an additional 0.18 pounds of milk solids into your calves per gallon of milk fed.

- Calf starter does not provide substantial energy when calves are on milk. A calf can't utilize the energy in starter until it's rumen is properly developed. This usually doesn't happen until shortly before or during the weaning process.
- My preferred bedding in winter is wheat straw. Bed newborn calves with dry straw so they can "nest" their legs and chest into the bedding. If you are short on straw, bed newborns for the first 3-4 weeks with straw. Then top dress their bedding with sawdust or corn stover. Calves less than 4 weeks old are the ones we are most concerned with so plan accordingly.
- Shelter your calves from the prevailing wind. I've worked on dairies where calf hutches sit exposed on the side of a hill and don't move between seasons. This is great in summer when a breeze helps us dissipate heat stress. However, in winter, this can lead to frostbite.
- The first 24 hours of your calf's life becomes exponentially more critical when it's cold outside:
  - After birth, we need to get the calf dried down ASAP. Mom tends to do the best job with this, but we risk exposing the calf to pathogens from her and from the calving pen. If you remove the calf immediately from mom, get it into a warming room/hutch ASAP. You can accelerate the drying/warming process by vigorously wiping the calf down with old beach towels. Wash and dry them after each use.
  - Get that 1<sup>st</sup> meal of colostrum into the calf within 1 hour of birth and at 105°F. As an industry, we tend to associate colostrum with antibodies. We forget to realize how energy dense colostrum is. Colostral fat is the major energy source for newborn calves. The quicker we get that 1<sup>st</sup> meal into newborns, the faster they can start digesting these calories to help maintain body temp and prevent hypothermia.

The Farmer's Almanac long-range forecast has predicted the WI winter of 2020-21 to have a "cold winter with normal to below normal temperatures" and "above average snowfall". For your calf's sake, let us hope this winter isn't one for the record books and dairies are well prepared. - Dr. Nick Mayer

### **Research on Calf Pain**

I want to give you, the producer, an update on research into pain management with cattle. A recent research project compared the pain from dehorning with caustic paste vs. disbudding with a butane dehorner. This was done at a very young age, the calves received a lidocaine injection for short term anesthesia, and they received Meloxicam for longer term pain relief. The results concluded that the disbudding with a butane dehorner or burning created less pain and negative long-term memories than the paste. Two quick thoughts: 1. I would have expected the caustic paste to be the least painful. 2. Whether we like it or not and whether we like the way research study is conducted, production systems are going to be affected by research. Even if it's poorly done research, it will be used in welfare audits like "FARM", where farmers are going to get told how to conduct 'on farm management practices'.

#### **State of Maryland regulatory proposal; This should scare you:**

Maryland has a regulatory proposal to ban the blanket use of dry cow treatment. Dry cow treatment will be allowed if a producer does one of the following:

- Cultures the cow and there is a positive (the proposal is not broken down to individual quarters)
- Has a CMT test that is positive
- The cow has a SCC test above 200,000 during the most recent lactation.

This is the basic description of a selective dry cow program. This is actually a good program for many producers. Teat sealants aren't mentioned. One interesting note is that in proposing the regulation, the state has to estimate the economic impact on small businesses. In this case State of Maryland estimates that this program will have no economic impact on small businesses. Are dairy farms not small businesses? This regulation will at the very least mandate more record keeping for farmers.

Although I very much support selective dry cow treatment, I am very concerned with the precedent of a state regulating how a dairy farmer and their veterinarian institute the use of legally available prescription drugs used according to label. The state is trying to decrease the use of antibiotics on your farm, which again, is always a good idea...but should the state make these demands? How can a state regulate a product the FDA has approved?