Herd Health Bulletin

Calf Care

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When is the most important time to consider the health of a newborn calf? The last three months of gestation is where it all starts. The better the dry cow nutrition the healthier the calf. This is an absolute, direct correlation that I've witnessed many times in practice. When you encounter a calf problem where the calf is getting sick and dying within 48 hours or shortly thereafter, you should examine the dry cow ration.

There are three cardinal things that I rule out in new born calves. These three items are all relevant to scours. It so happens that scours is the very first problem that the majority of calves encounter when firstborn:

1. Temperature of the milk is very critical. What temperature is mom? Normal body temperature is 101.4 to 101.8. That is the temperature Mother Nature has provided that new born calf to accept milk at. So what happens when milk is fed at 70-80 degrees? The milk will normally go down the esophagus, bypass the little undeveloped rumen where roughage is digested and go into the abomasum. The rumen has not started work yet as the calf has to start producing amylase, the enzyme needed for starch digestion. This does not happen until the calf is about three weeks old. This little calf has a defense mechanism in the esophageal lining that says this 70 degree stuff isn't mom; she is 101-102 degrees, so we will divert it into this undeveloped rumen. What happens when is most of the milk is diverted, is that the calf will go into a hypoglycemic (low blood sugar) state and basically go into a 12 hour starvation mode. This is major stress on that little undeveloped immune system. What about the two quarts of cold milk that is sitting in the rumen? What happens there? Nothing good. It turns into a yellow mass of coagulated cheese-like mass that is indigestible and can't be good for the digestive system. Milk feeding temperature is so important. Buy a thermometer. Don't trust your hand. Men with their beat up, calloused hands have no idea what 101 degrees feels like. Know the temperature or don't feed it. On a postmortem of a scouring calf, the first organ I open is always the rumen. If I find a big old clotted mass of milk in there, I won't prescribe any medicine until feeding temperature is corrected.
2. Position of the head while drinking is the second rule of feeding a young calf. Where is the udder in Mother Nature's world? It's under cow's legs. This means that as a calf nurses, a calf's esophagus is at least horizontal or higher. If you take milk, put it in a pail and set it on the ground, a calf has to put its head down to drink. What does that mean? That's not mom folks! Mom is up,

so this must be grass. The natural defense mechanisms that have developed over centuries of natural selection says that this goes to the rumen, not the simple stomach (abomasum) where it is supposed to go. The esophagus only has to be horizontal and that doesn't take much for the average calf. If you set the pail on a block or hang it (all it takes is about 5 inches off the ground) the esophagus will be horizontal.

3. The third important, non-medical factor to be aware of is timing. By that I mean feeding at regular intervals. If you feed at 7:30 in the morning, stick as close to that time as possible. Don't let it be 6:30 one day and 8:30 the next. These little baby stomachs are sensitive to timing. The organisms that live normally in the gut, that are there for a purpose, need to be fed regularly to keep them in check and balance. An observation I make in practice was the Monday morning dead calf. Enterotoxemia is a disease in young calves where the clostridium bacteria migrates forward and causes gas production and produces an endotoxin. The veal industry that pushes a lot of milk replacer for fast growth has been plagued by this. It is called overeating disease and always happens to one of the best calves. It happens very quickly and is a very painful and violent death. This good calf will die overnight and looks like they struggled and almost choked themselves, and are bloated. That is enterotoxemia from clostridium. An uneven time schedule aggravates this problem. Why do I say Monday morning is a common time to find dead calves? Sunday is the common day when the schedule may vary. You went to the mall, to Grandma's house, etc. and ran an hour late on Sunday night. On Monday morning you have a dead calf.

Correct these three areas, or make sure you are not violating them. If you get into a scours problem, they will only make things worse. Also, you can correct all three of these areas without spending a nickel, it's just management involved. What a bargain!

Let's say all the above are fine, you are organic and need to feed whole milk. What should you consider next?

The next item of long-term success is to not spread Johne's in the milk to the newborn calf. How do you do this? Test your herd so you know who is positive and who is negative. If you don't save bulls for breeding stock, you can feed them anyone's milk since they won't be around long enough to incubate the disease anyway. If you sell the bulls for breeding stock, then treat them like a heifer calf and only use milk from Johne's negative cows, as Johne's can be spread through milk and colostrums. Let's say you have 60 cows and you are lucky enough to have 30 heifer calves, and you are not seasonal in freshening. This means you would want to have 5-6 gallons of colostrums frozen. If you are seasonal, you would not need to freeze as much colostrum as you would probably have an old negative cow freshening quite often. Never use colostrum from your heifers that freshen, as the blood test doesn't pick up Johne's accurately until they are three years old.

After being aware of breaking the Johne's chain, the next item to control is cryptosporidium. This is a one-celled little critter that is spread via the fecal/oral route and is omnipresent. It reproduces very fast. If a newborn calf picks up a little spec of fecal material off the udder while playing and sucking as they do, that little spec of dried manure is enough to inoculate that calf so that in 24 hours you can have a massive infection in the GI system. The first sign of crypto infection is a transitory grey/green watery scours that may not even be evident in the bedding. In another 12 hours your crypto calf will become an E coli calf with yellow scours and a very sick calf. If you are really unlucky, you may even have a salmonella calf. They die quickly.

I fell that much of our scours today is precipitated by cryptosporidium. The best product line I have found to prevent this are the compounds that contain Alicin, which comes from garlic. This has to be in a lyophilized form made in a vacuum. The product I am most familiar with is “Calf Shield”. I recommend to my crypto clients to feed a small amount night and morning as a preventative in the whole milk for the first three weeks of life.

A second nutritive addition that I like a newborn calf on for the first three weeks of life is a wonderful product from Mother Nature called Aloe Vera. Cold processed, undiluted Aloe Vera has a very positive effect on the immune system. This helps the calf fight invaders by having its immune system at full speed. I recommend one ounce into the milk twice a day for 14-15 days.

When treating scours, always try to keep feeding the whole milk, as the calf does need nutrition and energy. Withholding milk during scours was common when milk replacers were used, as most of them are 20% fat with some having a very poor quality fat. This did aggravate scours, so it was withheld. With whole milk, this isn’t a problem, as the fat in whole milk is very stomach friendly.

Treatments for scours would be another entire article, which I may cover in a later issue. A sequel to scours unfortunately is pneumonia, which for some reason seems to follow in about two weeks after scours. As a rule; the more severe the scours, the more severe the pneumonia.

My observation is that scours in the Organic Valley dairy world tends to be less of a problem. I think feeding whole milk is a major part of the reason for this. It is tough to improve upon Mother Nature.