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24 Hour Emergency Vet Service

## MARCH 2011 NEWSLETTER

### Clinic News

Thanks to those who stopped by the Linwood Community Centre on Ag Day in February. We hope you found friends, food, and food for thought from the many vendors and their displays. We welcome any feedback you might have.

### Announcements

**6<sup>th</sup> Annual Waterloo Wellington Beef Tour - April 13<sup>th</sup> 2011 at 11:00 am** at the farm of Elmer and Doris Frey, 7423 6<sup>th</sup> Line RR 2, Drayton, N0G 1P0. From here will move on to two more barns in the afternoon. For more information: Justin Martin (519) 664-3789, David Horst (519) 846-2043 or Maynard Martin (519) 669-0048

## Colostrum Management

First milking colostrum is not only an important source of nutrients but contains non-specific immune factors and passively absorbed maternal antibodies (immunoglobulins or Ig). Colostrum is essential to promoting growth and to protect the newborn calf against infectious disease in the first months of life.

Calves which do not receive a proper amount and quality of colostrum are labeled as having failure of passive transfer (FPT). This has been defined as a calf serum IgG concentration is less than 10 mg/ml when sampled between 24–48 hours of age. A dairy study reported that approximately 21 percent of heifer calves suffer from FPT on U.S. dairy farms and estimated that 31 percent of all neonatal calf deaths in the first 3 weeks of life were attributable to FPT. In addition to increased morbidity and mortality risk, FPT has also been associated in general with reduced gains and feed efficiency, delayed age at puberty, delayed age at first calving, and reduced first and second lactation milk production.

Colostrum management includes:

- Quality of colostrum fed (Goal: IgG > 50 g/L), utilize a Brix refractometer to estimate IgG
- Quantity of colostrum fed (Goal: 10 percent of birth weight at first feeding), with another 10% in the first 24 hours
- Prompt first colostrum feeding (Goal: within 1-2 hours of birth)
- Clean (bacterial contamination) (Goal: < 100,000 cfu/ml total bacteria count)
- Monitoring passive transfer (Goal: ≥ 90 percent of calves with serum TP ≥ 5 g/dl), via blood sampling

The new thing in colostrum management is to minimize bacterial contamination. Since microbial contamination of colostrum can contribute to calfhood disease and may possibly interfere with passive absorption of colostrum antibodies. Producers should attempt management strategies to reduce bacterial counts in colostrum fed to calves. Pay attention to hygiene and sanitation so as to minimize bacterial contamination during the harvest, storage and feeding of colostrum. Additional tools may include use of colostrum replacers or heat-treating colostrum to reduce bacterial contamination

There are huge health, welfare, performance and economic efficiencies to be captured for producers who can improve their colostrum management practices.

# Use of Brix refractometers for colostrum quality

Progressive dairy producers know that it is best practice to measure colostrum quality before feeding it to their calves. Why are they not actively doing this? A familiar theme for many clients. As veterinarians we help to reinforce colostrum use best practices by making recommendations during regular visits and when dealing with calf-related health issues on the farm. How do we go about inspiring change? How do we convince a client to purchase a colostrometer and integrate its use into the colostrum harvesting process to optimize calf health?

A lot of factors can cause protocol drift, especially since colostrometers themselves are fragile pieces of equipment that must be used under very specific temperature conditions. Recently, there is an alternate method for estimating colostrum quality that will likely make monitoring colostrum quality much more practical for the average farm to do. This method utilizes a **Brix refractometer** to estimate total solids in solution. This type of refractometer has historically been used to measure the sugar content of grapes in the production of wine. The Brix measurements correlate well with immunoglobulin (IgG) content of colostrum even though IgG is a protein. Basically, with one drop of colostrum on the instrument, at any temperature, the producer can make a decision whether to use that colostrum to feed neonates for optimal passive transfer, or use it for feeding older calves.

The latest research suggests a good quality colostrum would have a cut-off point of 21 percent solids on the Brix for first calf heifer colostrum and 22 percent for 2+ lactation animals. A greater than 21-22% would correlate with meeting a minimum colostrum IgG cut-off point of 50g/L. Refractometer units are easy to use, calibrate, clean and maintain.

It is important to note that while the Brix refractometer significantly helps us measure colostrum quality; we are still lacking a means to measure the level of contamination in colostrum. As noted in the accompanying article, high bacterial counts in colostrum may interfere with passive transfer of immunity and pose a risk of making the calf sick directly from the colostrum, despite having high levels of IgG.

Colostrum that is clean but lacks high enough IgG levels can be fed to calves 1+ day old for the first few days of life. These older calves will benefit both from the nutritional content of colostrum and the IgG will help to protect the gut locally.

If not enough high quality colostrum is available for the calves' needs, or if colostrum bacterial contamination is suspected, consider using a colostrum supplement or colostrum replacement product. The criteria to choose a supplement vs. replacement would be based on how much colostrum the calf had already received.

*Colostrum supplements* contain less than 100g IgG and are designed for the calf that has received at least some maternal colostrum already.

*Colostrum replacers* contain over 100g of IgG and are designed to be used in place of maternal colostrum. Both are also great choices when cleanliness of colostrum is suspect.

This is a tool that you can use to improve your calf management and if you would like to order a Brix refractometer, please call the clinic for details.

## CQM Q&A

*Is it possible for a producer to obtain CQM materials and have the training done now, or do they need to be enrolled in the program first?*

Producers can either sign-up as a volunteer now and receive all their CQM documents or wait until April when all producers will be sent CQM binder as part of the provincial roll-out process.

The CQM volunteer program is being offered ahead of the scheduled provincial roll-out to provide an opportunity to those producers interested in starting the process this winter. The only difference to producers who volunteer now is that they could, once they have completed training and have three months of records, request a validation in a month that suits them as opposed to being validated in the month chosen for them in the roll-out process.

If any producers interested in taking the training now with the aim of implementing the program before their required scheduled month under the provincial roll-out then they should call our office at 905-821-8970 and speak with Angela Maningas.

Once enrolled, we will send the producer a CQM binder. They should then call their Advisor to begin the training process.

This was a re-print of an answer given by: Alex Hamilton

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