

# ~Dairy Details~

*Produced by Northern Valley Dairy Production Medicine Center*

900 N Wabasha, Plainview, MN 55964

(507) 534-4356 or 1-888-534-4026

[northernvalley900@gmail.com](mailto:northernvalley900@gmail.com)

## Liquid Gold: Colostrum's effects on Perinatal Programming

We all know the importance of getting a gallon of high quality colostrum into a newborn calf ASAP. Calves receiving adequate colostrum are less likely to get scours, naval infections, pneumonia, etc. New research now shows that the colostrum impact goes far beyond the first couple months of life, having a positive impact over a cow's entire life. Cows that were properly fed colostrum as calves show these benefits as adults:

- 50% lower cull rate through their first two lactations
- 1500# more in their 1<sup>st</sup> lactation
- 2500# more in their 2<sup>nd</sup> lactation

This just shows that colostrum is truly "liquid gold" and when managed right in calves, and will put more money in your pocket a couple years down the road.



Perinatal programming is a hot new area of research in the dairy industry. In a nutshell, "perinatal programming" is everything that happens to a calf early in life which determines how much of her genetic potential she can reach. The minute a calf hits the ground she is at her highest genetic potential. How well she reaches that potential is determined by our actions as managers. It is up to us to avoid screwing things up for her!

We've known for a long time how important colostrum antibodies are for the health of the young calf. But it turns out there are tons of other "goodies" in colostrum that we are just beginning to learn about, including Insulin-like growth factors (IGF's), lactoferrin, leptin, prolactin, insulin, relaxin, amino acids, and fatty acids. There is a lot left to learn and what we know is probably just the tip of the iceberg. But, these other colostrum ingredients have all sorts of long term effects on the development and future production of the adult cow. For example, IGF's and insulin are important in development of the gut and determines how well a calf will digest feed. Leptin is a hormone that determines how a calf sees appetite and stress. Relaxin is involved in the development of her reproductive system.



Genomic expression doesn't stop developing at day 1. These colostrum ingredients help genomic expression to be turned on all the way up to 7 days of age! This means there may be great value in giving that second feeding of colostrum 6-12 hours after the first feeding. This may also be one explanation for the advantage we see in calves fed pasteurized waste milk (which often contains a little bit of colostrum or transition milk from fresh cows). The extra antibodies in the colostrum/transition milk also seem to help "mop up" pathogens in the gut that may cause scours. So, think twice before throwing away or selling transition milk. The University of Minnesota's Dr. Jeremy Schefer's explained in a recent article that he can't find any milk price scenario that would make it more

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economically beneficial to sell transition milk rather than feed it to calves. “A gallon of colostrum has a value of more than \$60 to the calf, and a gallon of transition milk that would prevent scours has a conservative estimate of about \$30 per gallon.” If you feed milk replacer to your calves or it is not practical for you to feed transition milk to your calves, try freezing it instead. Use plastic ice cube trays to make “colostrum cubes” from extra colostrum and/or transition milk. Add one colostrum cube to warm whole milk or milk replacer to enjoy some of the advantages seen by farms that feed waste milk.

Stay tuned as more research is done in the exciting area of perinatal programming. And be sure to take advantage of the short time that you have when a calf is young to help her reach her full potential!

### June Dairy Days a Success!

Thanks to everyone who attended our June Dairy Days customer appreciation lunch this month! There was great food, door prizes and socializing!



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