

## Colostrum and calf productivity in our cow / calf operations

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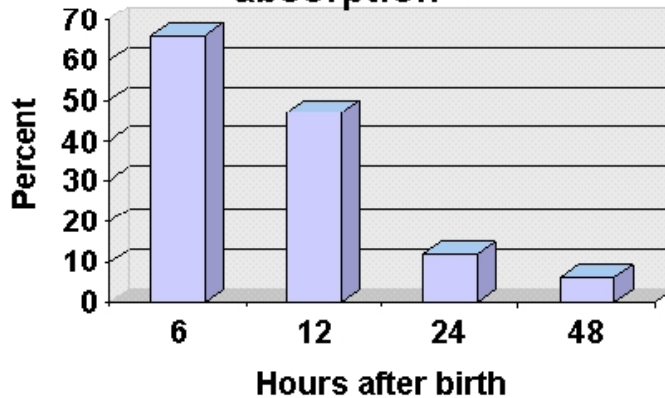
In the dairy world monitoring newborn calves for Ig (immunoglobulins or antibodies) absorption from colostrum is very common. Calves that do not receive adequate levels of Ig from colostrum can experience increased sickness and mortality. It has also been researched that Ig absorption from colostrum is crucial to being a healthier adult with enhanced feed efficiency and milk production. It is reasonable to assume the same holds true for beef cattle.

Failure of Passive Transfer (FPT) or inadequate absorption of immunoglobulins following birth is relatively common among beef calves. There are surprisingly few peer reviewed publications assessing passive transfer in beef calves with majority of research is aimed at dairy herds as stated previously. Older studies have determined that the rate of FPT in beef calves can run between 11% and 31%

Calf managers on dairy farms draw blood from about 10% of their calves to assess FPT. This might not be practical on most beef farms so how would you assess Ig absorption? "The time to stand and the time to nurse" says Dr. Victor Cortese, DVM of Zoetis. "Is an important number to know to evaluate and to assess your calves Ig absorption." His presentation at this year's NY Beef Producers Association Annual Meeting had me thinking about all the great calf nutrition research being done by Dr. Mike VanAmburgh and others at Cornell, all of it should be applicable to our beef herds

Calves should stand and nurse within 2 hours of birth if everything is normal and weather is not severe. For maximum antibody exposure from the colostrum, calves need to nurse within four hours of birth. By 12 hours, the ability of a calf to absorb antibodies from colostrum is reduced by 50%. By 24 hours they are not able absorb antibodies. (See chart below)

## Effect of time of colostrum feeding on percent immunoglobulin absorption



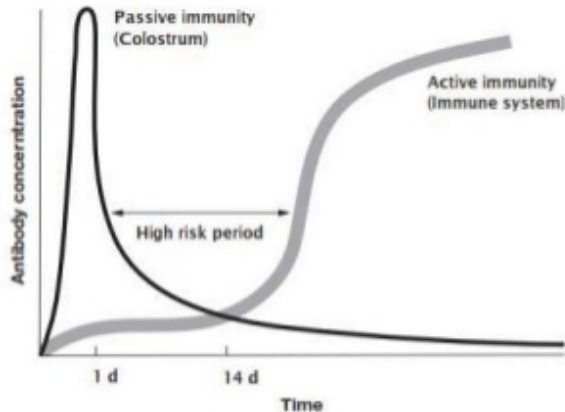
Calves that have high antibody levels in their blood stream by 24 hours after birth are less likely to get scours and grow faster than calves with low antibody levels. Calves that don't get enough colostrum in the first 12 hours are more likely to have respiratory problems. Research at the Clay Center, Nebraska, USDA experiment station compared beef calves with adequate serum IgG concentrations to those with failed passive immunity. Calves with FPT were 6.4 times more likely to be sick within the first 4 weeks of life and 5.4 times more likely to die before weaning. Also, weaning weights of calves with FPT were 35 pounds less than calves with adequate passive immunity.

The first 24 hours is a good time to give the calf a tag for ID and any other processing you normally do. You can then check on your calf that looks cold, hunched up, and droopy. A quick check of his mom's udder (either tight and overfull or flat and milk-less) will often reveal the reason this calf looks hungry and unhappy. That cow and calf need to be put in a pen or barn and observed to see if the calf is nursing and if the cow accepting the calf.

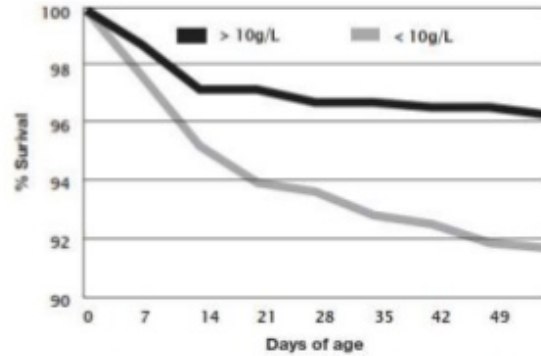
The antibodies from colostrum protect the calf until the active immunity from vaccination and boosters can take over. (See graph below). Calf survival rates are better than 96% when Ig levels from colostrum are at high levels. (See graph below)

# Colostrum and Survival

## Antibodies from colostrum protect animals until active immunity



## Calf survival rates by IgG Levels



Source: USDA National Animal Health Monitoring System, 1993.

Tanika O'Connor-Dennie, PhD



The calf's first 24 hours of life are critical to their lifetime health and productivity. The calf should double its birth weight by day 56 but if it was sickly, it may fail to achieve that. By day 60 you will have set how that animal is going to perform.

"Remember to give 5% of your time to keeping your cows and calves well. You then won't have to give 100% of your time when they're ill"