NorthWest Veterinary Associates Newsletter

"To replacer or not to replacer"

By Dr. Kokaram
March 2011

This winter has proven to be quite a significant challenge for those of us raising our own replacements. The highly varible and rapid temperature changes, the high wind conditions, the over exhuberant snow falls, have all coupled together this year to make for some very tough conditions for starting and raising replacement heifers. The resultant outcome of these conditions is issues with calf pneumonia, scours, ill-thrift, general malaise. However, in all of these situations, colostrum, quantity, quality, timing, plays an integral role. It is this essential role in calf health that accounts for the significant amount of time that has been spent on colostrum and calf health in this month's edition of Dairy Herd Management.

The main emphasis on colostrum and its influence on calf health arises from its role in failure of passive transfer (FPT). Calves are born with a very naive immune system and as such are dependent upon the transfer of immunity from the dam via the antibodies contained within the colostrum. Failure of a calf to uptake adequate amounts of antibodies for immunity is referred to as failure of passive transfer. Calves suffering failure of passive transfer have been shown to be at an increased risk of illness and death within the first two months of life. While maternal colostrum is the most ideal situation for ensuring a healthy start for our calves and reducing the risk of FPT, colostrum replacers retain a useful niche in our arsenal of calf tools, and in some cases, are the most ideal option.

The choice to utilize a colostrum replacer on your farm is one that is based upon a series of factors. One of the main contributing factors to consider is the quality of maternal colostrum collected at your farm. In assessing the quality of your maternal colostrum one may either make use of a colostrometer or, for the more technologically savy, a Brix refractometer. These tools are used as an estimate of the immunoglobulin levels (IgG levels) within the colostrum. Overall, one ought to use colostrum that registers within the green zone of the colostrometer or measures at least 22 percent on the Brix refractometer prior to feeding. It is possible for colostrum of adequate quality to be turned into something of questionable quality following such events as mishandling of frozen/refrigerated colostrum. If the majority of your maternal colostrum registers below the standard cut points, it may be time to consider a colostrum replacer. Most replacers with 130g - 150g of IgG antibodies are considered to be adequate in their ability to address FPT.

Another factor to consider in this decision process is the bacteria count of the collected colostrum. Target bacteria counts would be less than 100,000cfu/ml (Standard Plate Count) and less than 10,000cfu/ml for coliform bacteria. If bacteria counts are in excess of these standards at

collection, by the time the colostrum is actually fed, one inevitably has fed a veritable bacteria soup to the calves. This is especially true for situations where the colostrum has been left to sit at room temperature prior to feeding, or been improperly stored, allowing for proliferation of bacteria.

The potential for disease transmission from dam to calf is enhanced with such diseases as Johnes and Salmonella in the colostrum. If the herd is open and frequently adding new replacements there is a significant risk to the calf of transmission of disease causing organisms via the colostrum. One potential solution to this problem would be to utilize pasteurization of the colostrum to kill these organisms prior to feeding. This is however a relatively expensive first venture. A colostrum replacer in general ought not to contain any of these organisms, thus providing a very vaible and safe option for you the producer.

The final contributing factor to consider would be the ability to ensure consistent administration to calves. As outlined above, in utilizing maternal colostrum, one needs to be mindful of how it is collected, stored and subsequently adminstered. If sanitation is not adhered to on collection, bacteria counts will be high. Colostrum can be stored in the fridge for roughly 1 week. However, in that time frame bacteria counts will continue to rise such that quality at the end of the week will be quite different from the start, especially if the collection technique used was less than ideal. Freezing colostrum prolongs its lifespan but if it is not thawed appropriately or warmed adequately prior to administration FPT is still a possibility. With a replacer, there is no need to be concerned with bacteria counts at the start, or storage technique of the liquid product.

Overall, maternal colostrum is stil the gold standard. Provided you have an adequate vaccination program involving your dry cows, the colostrum collected ought to contain antibodies directed against the viral and bacterial challenges specific to your farm that your replacement animals may face. However, in terms of providing a product that is high in antibodies in the form of immunoglobulins, that is free of pathogens, that is esasily stored, handled and adminstered, a colostrum replacer is a viable option and one that ought to be considered when looking at overall calf health issues of neonates.