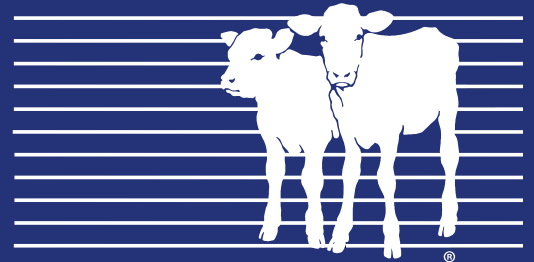




USING THE RIGHT COLOSTRUM PRODUCTS

PROVIDED BY SCCL



As the cold weather sets in, so does the realization that calving season is right around the corner. Now is the time to start preparing your calving kit, and one of the most essential items to include is a colostrum supplement or replacer.

What is colostrum?

Calves are born without immunity or antibodies in their system to protect them against pathogens. These pathogens can cause diseases like E. coli or salmonella, and can lead to diarrhea scours, dehydration and mortality. To avoid this, calves must consume adequate amounts of high-quality colostrum in a timely matter. Prior to calving, cows generate antibody-dense milk known as colostrum through a process called colostrogenesis. In ideal settings, a calf will stand and nurse adequate colostrum from its dam to achieve successful passive transfer of immunity. However, first-calf heifers or cows with poor nutrition can have lower quality colostrum or deficient volume for their calves to achieve this rate.

Passive transfer of immunity is defined as a serum total immunoglobulin (IgG) concentration of 10 g/L. This transfer of immunity is limited to 24 hours, and as soon as the calf is born, its ability to absorb IgGs begins to decline. With that in mind, colostrum fed within the first six hours of life is most efficient in transferring immunity. Because of this

narrow window of opportunity, there may not be ample time to run to the local vet clinic or farm store to purchase an alternative colostrum solution. In these instances, it is important to have colostrum products already on hand.

What should I look for in a product?

There are several factors to consider when stocking up on colostrum products for calving season. First, not all colostrum products are made from actual colostrum, which means those derived from alternative sources do not provide the same immunity support as maternal colostrum. Serum- or plasma-based products, still contain IgG; however, when compared to colostrum, their antibodies are not as effectively absorbed into the blood stream and do not reach the same passive transfer levels in the blood (See Figure 1).

As confirmed by the study conducted by Jon Ellis, Ph.D. and DVM from the University of Saskatchewan, the absorption of IgG from the colostrum-based product (>40%) was significantly greater than the plasma-based product (25%). Also, the results proved the average rate of IgG in the blood was less than 10 g/L, which is categorized as failure of passive transfer of immunity. Calves fed the colostrum-based product achieved above 15 g/L, successfully reaching passive transfer of immunity. Additionally, colostrum contains higher proportions of IgG1, the specific immunoglobulin

that recirculates back into the lungs. This means colostrum-based products protect the lungs against viruses like bovine respiratory syncytial virus (BRSV) pneumonia, whereas serum-based products only protect the intestinal tract.

When should I use a colostrum replacer or supplement?

Most colostrum products are considered supplements or replacers based on levels of IgG. Most products in the supplement category contain 50-100g IgG, and most replacers range from 100-200g IgG. Any product can be used to either supplement or replace maternal colostrum based on the amount fed. For instance, two bags of a 60g IgG product can be considered a replacement dose, because it equates to 120g IgG. The minimum dose needed to replace maternal colostrum can vary per calf based on factors like birthweight, environmental challenges like cold weather, or difficulty calving. New standards suggest feeding at least 100g IgG for adequate replacement and 200g IgG for excellent replacement. Studies have shown calves receiving excellent replacement doses have less morbidity, so they are generally healthier and easier to manage.

Mike Nagorske, DVM and Director of Technical Veterinary Services and Research at SCCL, has established recommendations for supplementing or replacing colostrum for beef calves. "Always first allow the dam to bond with her calf," Nagorske said. "After that, if the calf has not stood and vigorously nursed within the first two hours, you should start with a supplement," he added. In about six

hours, if the calf is still not up to nurse, give another supplemental feeding to total a replacement amount. Calves born as twins, or in cold, muddy conditions, should initially be given a replacement dose. Nagorske explains calves born with major difficulty, c-section or an abnormal presentation time have significantly reduced ability to absorb antibodies and should be fed an excellent replacement dose of at least 200g IgG.

Regardless of the situation, colostrum is essential for newborn health and survivability. Being prepared with the right products and having them on hand to use quickly, might be the difference in having a live, healthy calf or a dead one.

Figure 1.

