



## CALF CARE: Volume 1.02 Colostrum Supplements & Replacers



Hand-raising a baby calf requires a commitment to providing adequate nutrition, housing, and care to give the calf the best chance to grow into a healthy, productive adult. This information is designed to help provide a better understanding of generally accepted calf management guidelines and how each recommendation benefits the calf. It is not intended to provide treatment recommendations - there is no substitute for sound advice from your veterinarian.

### WHY IS COLOSTRUM SO IMPORTANT FOR NEWBORN CALVES?

Feeding high-quality colostrum immediately after the calf is born is the single best way to help ensure the long term health of the calf. **Colostrum** is the first milk produced by the cow after giving birth. Calves are born with almost no ability to fight disease on their own, and must consume their antibodies (also commonly known as **IgG**, **immunoglobulins**, or **globulin protein**) from the cow's colostrum. The process of acquiring immunity from colostrum is called **passive transfer of immunity**. In the first day of life, the newborn calf has the ability to absorb antibodies directly into its bloodstream without digestion. Antibody absorption is most efficient immediately after birth, and steadily declines to virtually zero at 24 hours of age. For this reason, it is extremely important to feed colostrum as quickly as possible after the calf is born, and continue feeding only colostrum for the first day of life. When a calf does not receive enough antibodies from colostrum it is said to have **failure of passive transfer**, or **FPT**. In addition to providing antibodies, colostrum is a rich source of protein, fat, natural growth hormones, minerals, and vitamins for the newborn calf.

### FEED COLOSTRUM AS SOON AS POSSIBLE AFTER BIRTH TO MAXIMIZE ANTIBODY ABSORPTION.

The goal for colostrum feeding should be to feed 3 to 4 quarts for large breed dairy calves and 1-1/2 to 2-1/2 quarts for beef or small breed dairy calves, of high-quality colostrum within 2 hours after birth. Colostrum should be warm (about 100-105°F) and fed with a nipple bottle. Continue to feed only colostrum every 8-12 hours for the first day of life. If you purchase a young calf and are unsure exactly how old the calf is, the calf should still receive colostrum. Even though antibody absorption may be decreased, the calf will benefit from nutrients and antibodies in colostrum. Colostrum contains much more than just antibodies. Colostrum provides other essential proteins, fats, sugars, vitamins and minerals, as well as special growth factors and hormones that help the digestive system to develop and mature.

### WHEN DO I USE A COLOSTRUM SUPPLEMENT OR REPLACER?

If available natural colostrum is contaminated, or if it was allowed to stand without refrigeration for more than 30 minutes after collection, it should be discarded. If you don't have enough good colostrum or if the quality measured with a colostrometer is anything less than "good," then a colostrum supplement or replacer product should be used. **Colostrum supplements** typically contain 30 to 60 grams of antibodies, and can be fed alone or mixed with available maternal colostrum. If no maternal colostrum is available, you can use a colostrum supplement in 2 to 3 feedings, or colostrum replacer product in 1 to 2 feedings. **Colostrum replacers** contain higher levels of antibodies than supplement products, typically 100 to 150 grams of antibodies, and cost 2 to 3 times as much per feeding as supplement products. If you are replacing natural maternal colostrum completely, the goal should be to provide at least 100 grams of antibodies in the first 6 to 8 hours after birth. Antibodies in colostrum supplements and replacers can be labeled as **IgG** or **globulin protein** depending on the product and its antibody source.

### THERE IS MORE THAN ONE GOOD SOURCE OF ANTIBODIES FOR SUPPLEMENTS.

Natural maternal colostrum will always be the preferred source of antibodies for the newborn calf, but clean, fresh colostrum won't always be available, so it is highly recommended to have a supplement or replacer product on hand just in case. Colostrum supplements can contain antibodies from dried colostrum or dried serum, or a combination of the two, and both are effective at providing antibodies. Both receive their antibodies from exactly the same source – the bloodstream of the mother. Research shows that antibodies from serum may be absorbed slightly more efficiently than antibodies from dried colostrum. Your veterinarian can test your calf's blood to determine if it absorbed enough antibodies to achieve successful passive transfer of immunity. Colostrum and serum used for animal feeds, including colostrum supplements, is carefully collected using strict quality standards to assure that it is as safe and wholesome as the milk we drink.

### ADDITIONAL RESOURCES

Your livestock veterinarian and local university extension agent are excellent resources for calf management information, as well as many online sources. Please visit the Learning and Resource Center at [www.savacaf.com](http://www.savacaf.com) for some helpful online links.