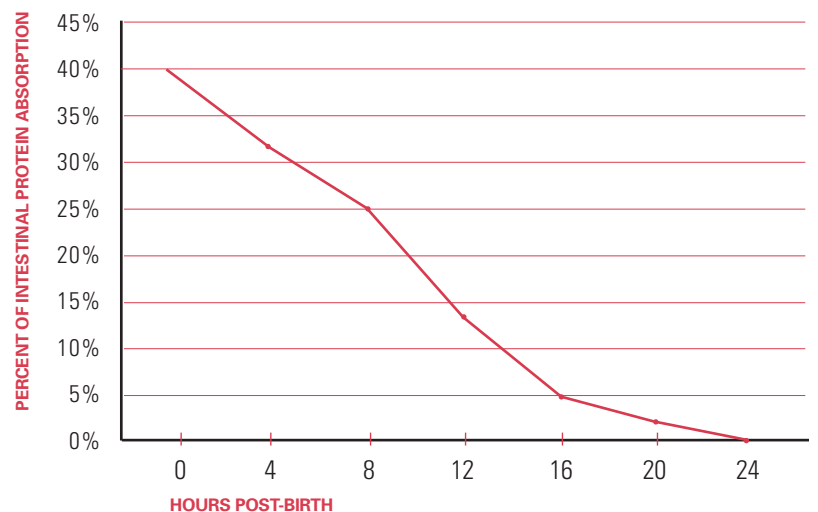


CALF COLLEGE™ COURSE NOTES

— COLOSTRUM REPLACERS: A VIABLE WAY TO DELIVER CRITICAL NUTRIENTS —

Calves represent the future of every dairy herd and delivering proper nutrients during their first critical hours of life are vital to their survival. Feeding essential disease fighting antibodies and immunoglobulins (commonly called IgG) should be accomplished within the calf's first four hours of life and must be done before its ability to absorb antibodies declines dramatically, as shown in the graph. At 8 hours, absorption can be as low as 50 percent of what it was at birth¹. Clean, maternal colostrum is considered the gold standard for feeding these nutrients but on many farms not achievable. A colostrum replacer is one management tool that can replace maternal colostrum and get calves off to a healthy, bio-secure start.

PROTEIN ABSORPTION ABILITY DECLINES QUICKLY AFTER BIRTH



Why use colostrum replacer?

Harvesting clean, maternal colostrum can be a challenge for a variety of reasons: poor cow prep, sloppy collection techniques, inadequate facilities, poorly trained personnel, or mediocre equipment sanitation. Producers also face challenges with proper cooling, storage and feeding protocols when attempting to provide calves with clean and healthy colostrum.

A colostrum replacer can provide a healthy alternative to calves during varying situations when maternal colostrum is not available or is of low quality:

- In poor sanitation situations, a colostrum replacer can assist in filling the void until management resolves the contamination problem.

- When maternal colostrum is of low quality, a colostrum replacer should provide a minimum 100 grams of IgG. Calves' immune systems use these antibodies to identify and neutralize foreign invaders, such as viruses and disease.
- When bacteria numbers in maternal colostrum reach dangerous levels and could threaten calf health and survival, a colostrum replacer can safely provide the needed nutrients.
- Implementing a colostrum replacer into management protocols can break a Johne's disease cycle by reducing the possibility of transferring this disease through contaminated maternal colostrum.
- Serum IgG levels in calves receiving a high quality colostrum replacer should average 10 grams per liter or more, a desirable level for adequate passive transfer.

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¹ Tyler, H. and J. Campbell. 2008. *Application of New Technologies in Functional Proteins for Feeding Calves*. Present. 2008 Dairy Calf and Heifer Association Annual Conference.

Are all replacers created equal?

Colostrum replacers are an ideal alternative to maternal colostrum, but the effectiveness of different products can vary significantly. Even when fed to deliver the same amount of antibodies, different colostrum replacers may produce varying results. "There is a significant difference in how well the antibodies in different products are absorbed," explains Geof Smith, veterinarian at North Carolina State University.

In a side by side product comparison conducted in 2006, variations among colostrum replacers became apparent.

- 81 percent of calves fed one commercial colostrum replacer containing 100 grams of IgG achieved adequate passive transfer
- Only 10 percent of calves fed a different commercial product containing 100 grams of IgG in the same trial achieved adequate passive transfer.

With such a variance in passive transfer between products, producers should not base their colostrum replacer decision upon the amount of IgG listed on a package label. It is important to use those colostrum replacers that have been proven effective through research.

Colostrum Replacers vs. Supplements

Colostrum replacers are typically identified as any product that is able to raise blood-serum IgG concentration within calves above 10 g/l, while colostrum supplements are typically used to increase the amount of IgG fed to calves when only low or medium quality colostrum is available. Though these products offer different levels of antibodies, there are several other differences:

- Colostrum replacers contain more IgG than supplement products and provide more antibodies than low or moderate quality colostrum.
- Colostrum supplements contain less than 100 g of IgG per dose.
- Colostrum supplements cannot replace high quality colostrum.
- IgG available within colostrum supplements is often absorbed poorly.

When maternal colostrum is not available, proven colostrum replacers are an effective replacement for the real thing. While supplements are available for improved quality, some offer little value and can even hinder quality of the maternal colostrum to a greater extent. Producers should consult their veterinarian when credible research on a colostrum product is not available.