



Headline: The First 60 Days Sets the Course for Later Lactation

Byline: Matt Dodd, Ruminant Field Technical Specialist, Diamond V

That newborn calf looks pretty helpless nestled down in that clean, fresh straw. But don't let looks deceive. She's a powerhouse of genetics and opportunity just waiting to demonstrate her potential.

Now it's up to you to help her express as much of those genetics as possible.

It will take considerable effort to get her from day one to her first day in the parlor and fully express the genetics she's carrying. How you manage these first few days—and the next 60 or so—will play a significant role in how closely she reaches her full potential.

Respiratory challenges

There are a number of challenges that can derail a calf, and one of the primary ones is Bovine Respiratory Disease (BRD). It's the number two killer of pre-weaned calves and the primary cause of mortality in weaned calves. Even if a calf contracts BRD but recovers, the impact of going through the illness will have lifelong effects.

A meta-analysis was conducted by Canadian researchers (Buczinski et.al. 2021) of research studies focusing on the effects of calfhood BRD on the health and performance of dairy cattle. Diagnosis of BRD in heifer calves had the following impact:

- 2.85 times higher odds of dying before first calving
- 2.3 times higher odds of herd removal before first calving
- 0.01 pound lower average daily gain
- 267 pounds less milk produced in first lactation

If that calf is going to reach her potential, she will need a clean and strong respiratory tract to get there. Building immunity in the calf and reducing disease pressure from the environment are paramount to BRD prevention. A sound nutrition program can help the calf develop a strong immune system, and that starts with colostrum.

Start with colostrum

The development and administration of high-quality colostrum starts inside the cow through vaccination. This helps the cow create colostrum with higher quantities of antigens that can be passed on to the calf to help build passive immunity. Research studies have shown that calves had reduced incidence of BRD when fed colostrum from cows vaccinated with BRD-causing pathogens in the dry period.

Once the calf is born, harvesting high quality colostrum from the cow and getting it into the calf as quickly and cleanly as possible is critically important. Then we need to make sure the calf gets enough



volume of quality colostrum in the first few hours in addition to transition milk over the next few days that takes her to regular whole milk or milk replacer.

Various research studies have shown that providing calves with adequate levels of high-quality colostrum not only pays dividends in healthier, more productive calves but also more productive cows as well. In one University of Arizona study two groups of heifers were fed either two or four liters of colostrum within the first hour of birth. Vet costs were doubled for the two-liter group, and average daily gain was significantly lower in that group as well. When the calves reached the milking parlor, the group fed four liters of colostrum produced significantly more milk in their first and second lactations compared to calves fed the lower amounts.

After colostrum the nutrition program keys on growth of the calf and development of key internal systems, including development of the rumen, lungs and entire immune system. This includes augmenting the liquid portion of the diet as well as the starter with ingredients that help build a stronger immune system so she can grow and develop uninhibited by disease challenges.

Better performance in the parlor

Research has shown that continuing heifer development with a targeted calf nutrition program also pays dividends later in life. More than 300 Jersey calves on a California dairy were assigned to two treatment groups. One group was fed a starter ration with a postbiotic immune support product. The other group was fed that same postbiotic in the starter but also included a water-soluble version in the whole milk.

Calves were raised in hutches until 60 days of age when they were weaned and transitioned to group pens until 120 days, then moved to an outside ranch facility. All health events were recorded up until 120 days and weights were recorded at 60 and 120 days. Heifers were at the heifer ranch until pre-calving when they were brought back to calve at their original facility. Heifers were tracked to be able to collect production information two years later. Milk yield was measured daily and a 7-day average was used for lactation analysis on DairyComp 305. Research results showed that calves fed the additional postbiotic in the milk expressed:

- 5 pounds greater weight at 120 days
- 25% lower risk of developing a first case of pneumonia
- 8.9 pounds more milk at 10 weeks of lactation

Table 1. Effect of full postbiotic program on calf weight gain

Age	Calf Weight - Starter Only	Calf Weight - Full Postbiotic Calf Program
At Birth	55	56
60 days	120	119
120 days	204	210

Beyond nutrition



North America Office

📍 2525 60th Avenue S.W. | Cedar Rapids, IA 52404 | USA
☎ TF: 800-373-7234 | Phone: +1-319-366-0745 | FAX: +1-319-366-6333
🌐 diamondv@diamondv.com | DiamondV.com

In addition to a strong nutrition program, the calves need to be born and raised in an environment that is as clean and dry as possible. That starts with a clean, dry calving area that transitions to a disinfected housing area that is also clean, dry and well-ventilated. Ammonia in the housing area can challenge lung function, so it's important to keep air moving around the calf to ensure clean air to breath.

To bolster immune function and disease prevention, producers should work with their veterinarian to develop sound vaccination protocols and ensure they are updated annually to reflect any changes to the environment or pathogen population.

It takes a village to raise a healthy calf from birth, through weaning and heifer development so it reaches optimal size and weight to accomplish profitable production once she reaches the parlor. A sound nutrition program is a cornerstone to that success. Investing in her future pays you back in your future.