

# Deliver immediate immunity to reduce both labor and risk

Bobbi Kunde for *Progressive Dairyman*

The health and viability of a newborn calf immediately impacts your profit. Caring for cows prior to calving and at calving time requires patience, keen attention, time, labor and expenses. There are few ways around this, and attention must be paid toward multiple aspects of management to get a new calf off to the right start.

With advanced technologies and research that helps us understand how best to use these technologies, there are actually ways that labor can be reduced while, at the same time, reducing health risk and increasing the protection a newborn calf has against life-threatening diseases.

## Vaccinating for scours has pitfalls

Pre-calving vaccination programs are often recommended for scours prevention. While the science is sound, there are challenges with this approach that can leave calves at risk:

**1** Scours vaccines require a healthy dam which has been fed at a proper nutrition level in the critical period leading up to calving. While this is every producer's goal, feed conditions, age of the dam and even weather can cause considerable differences in their state of nutrition, even within the herd.

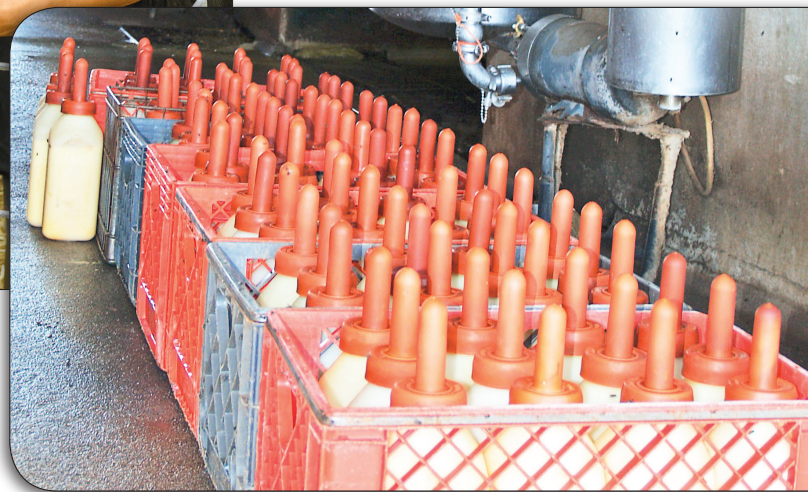
**2** Calves are exposed to scours-causing bacteria almost immediately, even before they are strong enough to stand and nurse colostrum. By the time they receive maternal-derived antibodies, it can be too late.

**3** Vaccination programs require precise timing for optimal results, which means



**LEFT:** It is very important newborn calves get nutrient-rich colostrum as soon as possible.

**BELOW:** Not only does colostrum provide the valuable, additive advantage of maternal-derived antibodies, but it is a critical energy source for newborn calves to meet immediate energy and growth needs. Photos by **PD** staff.



more management time and attention.

**4** Even with healthy, well-nourished cows, colostrum quality can be variable and compromised by circumstances of unexpected stress and health challenges immediately before, or during, calving. Such situations will decrease the quality of the colostrum and limit the transmission of antibodies to calves.

**5** A vaccine is an investment, but one without the guarantee the cow will give birth to a live and viable calf. If your focus is replacement heifers, these vaccines are wasted if the calves are stillborn or are bulls that you do not plan to raise.

Newborn calf vaccines can help cut out the variability of some parts of this process. However, they still require proper ingestion of the vaccine by the calf, a colostrum delay to increase efficacy and an immune response to occur within the

calf's young and naive immune system.

## Immune reactions may actually set the calf back

Based on current research, it appears that immune response in a calf can actually be detrimental to the early health of that calf, requiring energy that could better be used to fight off disease and gain weight. Research conducted by Dr. Mark Cook at the University of Wisconsin shows that any immune system response is challenging to the animal. And the response can actually be more harmful to the animal than no vaccination at all if the specific immunity is not needed.

Cook's research shows that when an immune response is effectively achieved, muscle tissues demand more amino acids to create the immunity.

These are the same amino acids that could otherwise be used by the muscle tissue to grow and strengthen the calf's overall health, rather than responding to the vaccination. Cook believes it is important to find ways to limit immune response, and if your calves don't need vaccination, you shouldn't use it.

## Avoid colostrum delay

Calves are born with relatively low body fat as compared to many other species, which further challenges their ability to protect themselves.

It is very important that newborn calves get nutrient-rich colostrum as soon as possible. Not only does this colostrum provide the valuable, additive advantage of maternal-derived antibodies, but it is a critical

*Continued on back page*



## Immediate immunity can reduce both labor and risk, cont'd from front

energy source for newborn calves to meet immediate energy and growth needs.

Dr. Amelia Woolums at the University of Georgia also notes the important role of fat-soluble vitamins, such as A and E, which are present in high concentration in colostrum from healthy cows. She notes calves that do not ingest an adequate volume of good-quality colostrum will begin life deficient of these vitamins, which will in turn make them even less likely to respond to vaccinations.

While some vaccination protocols require a delay in colostrum feeding, it is not recommended to delay this critical feeding – for any reason.

### Calves do need protection from life-threatening organisms

There is no doubt, calves still need protection from life-threatening organisms – particularly those that commonly cause scours in young calves. Within the first seconds of their life, calves will be threatened. E. coli and coronavirus are two of the most challenging pathogens for calves to fight off.

There also are alternatives to conventional vaccination protocols, which can boost calf health and protection from pathogens without the challenges discussed above. For these options, colostrum delay is not necessary – and not recommended. These treatments deliver specific antibodies at the gut level to immediately protect against disease, while



also providing additional immunoglobulins to be absorbed into the bloodstream for extended protection. The

instant protection against the pathogens does not require the stress of an immune reaction that can take both time and valuable energy to establish. For best results, these forms of protection should be delivered to the calf as soon after birth as possible.

It is best to work closely with your veterinarian and animal health supplier to develop the most appropriate disease prevention program possible. While vaccination programs can help, the newborn calf is born vulnerable and needs immunity

“It is best to work closely with your veterinarian and animal health supplier to develop the most appropriate disease prevention program possible.”

Left photo courtesy ImmuCell Corporation.  
Bottom photo by PD staff.



**Bobbi Kunde**

ImmuCell

[bkunde@immucell.com](mailto:bkunde@immucell.com)

[www.progressivedairy.com](http://www.progressivedairy.com)

support as soon as possible. A program should be in place to deliver immediate protection for each calf and can be done in a way that also reduces labor, risk and even cost. **PD**

*References omitted due to space but are available upon request.*

 **PROGRESSIVE DAIRYMAN**

Reprinted from July 21, 2011

“ Based on current research, it appears that immune response in a calf can actually be detrimental to the early health of that calf, requiring energy that could better be used to fight off disease and gain weight. ”