CEDAR GROVE VETERINARY SERVICE NEWSLETTER

SEPTEMBER 2016

CALF VACCINATION: STRESSORS IN THE CALF MAY BE STRESSING YOU OUT

Limiting the incidence of infectious disease on any farm starts with a good vaccination program. For dairy calves this is even more important since their immune systems are still developing and exposures can spread disease rapidly. It is for that reason that veterinarians work to formulate vaccine protocols that are beneficial for the animals and the management team. However, some farmers still get frustrated when they think they have a good vaccine program; yet, still observe substantial outbreaks, especially pneumonia in calves.

Sometimes this can be so problematic that it drives producers to change their vaccine protocols, change vaccine types and pull out their own hair in frustration. Before you go to the extreme, it is first important to understand how common stressors can affect vaccine efficacy and how you can manage these stressors to improve vaccine response.

Before we get into how stressors can affect vaccine efficacy, we should first review how vaccines work. Vaccines expose an animal to a specific pathogen, tricking the body into thinking it has encountered the actual bacteria or virus. This leads to the creation of memory cells for that specific pathogen. The body is then able to recognize when it is under attack from the "wild" pathogen and will generate a quick response before the pathogen can cause disease and will therefore develop immunity.

Vaccines become less efficacious during times when endogenous glucocorticoids are present in the body. Glucocorticoids are the stress hormones of the body and they interfere with how normal immunity occurs in dairy cattle. Stressors in the calf that can cause release of the stress hormones include handling, weaning, transportation, dehydration, commingling, and environmental changes. Additionally, treating a calf with Dexamethasone, an exogenous source of glucocorticoids, can also interfere with the immune system of an animal.

So, with so many stressors that can affect a calf, is there ever a good time to vaccinate? The answer is more complicated than you think. This is why vaccine protocols are not as straightforward as many believe. Research has shown that not all

NEW PRODUCT ALERT

Lutalyse HighCon

Use: Lutalyse HighCon is approved for use to synchronize estrous cycles which allows for fixed-time artificial insemination (FTAI) in lactating dairy cows. It also is approved for use with Eazi-Breed™ CIDR® Cattle Inserts in heifers and cows to improve breeding efficiency and pregnancy success.

Dose: 2 mL SQ or IM

Special Notes:

- Women of childbearing age and persons with respiratory problems should exercise extreme caution when handling Lutalyse HighCon.
- Lutalyse HighCon should not be used in pregnant cattle unless cessation of pregnancy is desired.
- Lutalyse HighCon is approved for use in cattle only, not equine or swine like Lutalyse.
- Lutalyse HighCon comes in 100mL bottles (50 doses)
- **Starting in August 2016, Cedar Grove will only be stocking Lutalyse HighCon**

stresses in the calf are created equal.

There are stresses that occur briefly, such as handling a calf. These are called acute stresses and are often considered minor inconveniences in well managed herds. These often cause very little issues in the vaccination process. Research has also show that these acute stressors actually may improve some vaccine responses by essentially priming the immune system leading to a better vaccine response. This is a good thing since stressors like handling cattle or transporting cattle are hard to avoid in most management systems

Chronic stressors are stresses that affect the calf over days or weeks. These may include overcrowding in pens, extended bad weather, or poor hygiene. High levels of stress lead to constant high levels of endogenous glucocorticoids. These interfere with the body's ability to effectively produce enough of the memory cells needed to combat future disease.

Vaccine programs are essential, but more difficult to execute that most people realize. It is important to consider the stresses that calves are subjected to in their life prior to planning a vaccine protocol. They do matter. Little things like calf handling are impossible to avoid and research indicates they are trivial to general vaccine efficacy. Chronic stress situations such as overcrowding are management items that can be changed/improved to increase vaccine response. Avoiding the use of a lot of vaccines around weaning, castrating, and dehorning will also improve how the vaccines work. Finally, calves that will be vaccinated should not concurrently be receiving Dexamethasone as this can also interfere with the immune response.

If you have any questions about whether your vaccine program is designed to be as effective as possible, feel free to contact us at Cedar Grove Veterinary Services. We would be happy to help you sort through the complexities of a good vaccine protocol.

Students…. Not Just Vet's Personal Assistants

Some of you may have noticed over the last few months that there have been a lot of different faces showing up to the farm in addition to your friendly neighborhood veterinarian. As much as I would like to tell you that we have all gained personal assistants over the last year, those new faces were actually a group of students that were interested in veterinary medicine as a future career choice (veterinarian or veterinary technician). We want to thank all of our farmers for being so tolerant of these students during that time. We know that they can make things more difficult from time to time, but the practical skills they are learning will serve them well. Additionally, all veterinarians and vet techs were students once, so it is only through these experiences that we can assure that they become quality people working in the industry well into the future.

Also, I know that some of you worry about problems that can arise when we allow students to practice their skills, most especially when it concerns pregnancy checking. To assuage your fears, I wanted to alert you to a study done by Ohio State University on the effects of student rectal palpation on early pregnancy loss in cattle. The pregnancy loss in dairy cattle between 42 and 70 days is reported to be about 6%. In the study done by Ohio State, the sample group of 1216 animals that were rectally palpated by students experienced a pregnancy loss of 4.4%. This indicates that student palpation had no detrimental effects on pregnancy. Furthermore, the study found that there was no difference in pregnancy loss between students that had formal palpation training and those that did not. Therefore, there is little danger to the pregnancy of the animal in allowing students to practice their skills. The only outcome will be increased knowledge and skills by your future veterinarians. Thank you again for your tolerance of our students and we can almost assure everyone there will be more riding with us next summer.

Like most veterinary students, Doreen breezes through chapter 9.