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KICK-START RESPIRATORY VACCINATIONS FOR CALVES

HELP GET CALVES OFF TO A HEALTHIER START WITH AN INTRANASAL VACCINE

Putting together plans for spring, ranchers know their success depends on much more than choosing the right string of horses – calf health is also of utmost importance. Using an intranasal vaccine at branding or summer turnout can help prepare young calves to kick-start their fight against bovine respiratory disease (BRD), according to Michael Nichols, DVM, Cattle and Equine Technical Services at Zoetis.

“There are intranasal vaccines that can be used in calves of all ages,” Dr. Nichols said. “Some intranasal vaccines can actually help override maternal antibodies present in colostrum and they can help prime the calf’s immune system, helping make future vaccinations more effective.”¹⁻³

Ingestion of adequate colostrum after birth is critical to a calf’s health during the first months of life. While antibodies present in colostrum can help fight off diseases in young calves, they also can interfere with the immune response to vaccination, potentially making the vaccine less effective.¹ A recent trial tested young calves’ ability to respond to bovine respiratory syncytial virus (BRSV) vaccination in the presence of maternal antibodies received from colostrum. The results demonstrated that calves vaccinated with INFORCETM 3 respiratory vaccine had almost half the lung lesions, 44 percent fewer, and reduced morbidity when compared with non-vaccinated calves.²



“This trial indicates that the BRSV fraction present in INFORCE 3 can override BRSV maternal antibodies,² which is especially important for young calves at branding or turnout, as BRSV is a primary cause of viral pneumonia and can be particularly damaging to calves from birth through weaning,”⁴ Dr. Nichols said.

In addition to overriding BRSV maternal antibodies, during another recent trial, it was shown that INFORCE 3 doesn't interfere with concurrent use of a Mannheimia haemolytica vaccine and even helps make subsequent BRSV vaccinations more effective.³

“Historically, vaccination protocols for beef calves have been developed primarily on the basis of convenience, with little consideration given to the potential interactions that may occur when multiple vaccines are given concurrently,” Dr. Nichols explained. “This study was conducted to further clarify these vaccine interactions.”

It showed that calves vaccinated with INFORCE 3 and ONE SHOT® at branding had similar antibody responses to those vaccinated with ONE SHOT alone, meaning INFORCE 3 did not interfere with the concurrent use of ONE SHOT. And, these same calves had substantially greater BRSV antibody levels following vaccination with BOVI-SHIELD GOLD® 5 at weaning.³

“INFORCE 3 helps prime the immune system, and this study shows it can help make weaning vaccinations with BOVI-SHIELD GOLD 5 more effective for BRSV,”³ Dr. Nichols said.

INFORCE 3, a three-way intranasal vaccine, can help provide protection against infectious bovine rhinotracheitis (IBR) virus, parainfluenza 3 (PI3) virus and, most importantly, prevent respiratory disease caused by BRSV – an especially dangerous disease for young calves. BRSV can play a major part in the BRD complex because of its frequency of occurrence, tendency to settle in the lower respiratory tract and ability to predispose the respiratory tract to secondary bacterial infections.

While vaccination at branding with INFORCE 3 can help protect calves against these damaging effects, Dr. Nichols recommends producers consider following with an injectable vaccine, which stimulates the rest of the immune system and helps provide duration of immunity.

No matter the operation, Dr. Nichols recommends producers work with their veterinarians to evaluate their vaccination program to decide whether an intranasal vaccine is a good choice.

“INFORCE 3 is an ideal vaccine to use at branding or turnout because it can help override maternal antibodies and prime the calf's immune system, helping make later vaccinations at preconditioning and weaning more effective,”¹⁻³ Dr. Nichols said. “But BRD is a complex disease, and a veterinarian can help review herd health programs and overall management aspects to help producers decide if an intranasal vaccine can add to their operation.”

Written by Michael Nichols, DVM, and originally published in the IFA Cooperator magazine (vol. 82, no. 1) Spring 2016. Michael is a DVM Cattle and Equine Technical Service with Zoetis.

1. Vonggel I, Antonis A, Fluess M, Riegler L, Peters AR, Harmeyer SS. Efficacy of a modified live intranasal bovine respiratory syncytial virus vaccine in 3-week-old calves experimentally challenged with BRSV. *Vet J* 2007;174(3):627-635.

2. Data on file, Study Report No. 3131R-60-10-760, Pfizer Inc.

3. Cortese VS, Seeger JT, Stokka GS, et al. Serologic response to Mannheimia haemolytica in calves concurrently inoculated with inactivated or modified-live preparations of M. haemolytica and viral combination vaccines containing modified-live bovine herpesvirus type

1. *Am J Vet Res* 2011;72(11):1541-1549.

4. Grubbs ST, Kania SA, Polgieter LND. Prevalence of ovine and bovine respiratory syncytial virus infection in cattle determined with a synthetic peptide-based immunoassay. *J Vet Diagn Invest* 2001;13:128-132.

