W 1166

WHEN, WHAT, AND WHERE: BRD VACCINATIONS IN STOCKER CATTLE

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Stocker Cattle Health

Cattle health is one of the top priorities for any producer but especially for a stocker operator. Calves are especially susceptible to disease from six to seven months old when maternal antibodies from the dam are at their lowest concentration.

Stocker calves experience high levels of stress from transportation, weaning, comingling at sale barns and relocation. These stress-induced instances lower the immune system of the calf, where viruses and other pathogens can enter the body and wreak havoc on the animal. This combination of higher stress levels and lowered immunity is the perfect scenario for contracting illnesses such as bovine respiratory disease (BRD).

Stocker cattle should receive two types of vaccines, a clostridial vaccine against blackleg and other clostridial diseases and a BRD vaccine. To ensure proper BRD protection, make sure that the vaccine includes the major viral pathogens: Bovine Viral Diarrhea (BVD) type I and II, Bovine Respiratory Syncytial Virus (BRSV), Infectious Bovine Rhinotracheitis (IBR) and Parainfluenza3 (PI3). Lastly, you need to make sure to follow up with boosters to your cattle two weeks after the first dose (label directions). Giving vaccines targeted at BRD help prevent and reduce diseases in cattle. So when is the best time is to give your stocker cattle respiratory vaccinations?

Vaccine checklist for incoming cattle

- 2 rounds of modified live 5-way BRD vaccines
- 2 rounds of clostridial vaccines (blackleg)
- An approved effective dewormer

BRD Vaccine Timing

There is a big debate on when is the best time to vaccinate incoming stocker calves to prevent bovine respiratory disease. As a producer, you have a few options, either to vaccinate on arrival, delay vaccines for a period of time or not vaccinating your incoming stocker calves at all. The option you choose can depend on some factors. Some of those factors include your production management practices, receiving management and how long you plan to keep the calves before turning them over. These management practices have a direct impact in delaying stocker cattle vaccinations, which can range in the number of days. Some delaying time frames can range anywhere from one or a few days, a couple of weeks, to even 30 days or more. Some studies have also shown the benefits of not vaccinating stocker calves at all.

On-Arrival Vaccines

Implementing an intranasal vaccine on arrival has shown to improve cattle health (Cortese 2015). It has also shown to lower BRD sickness and the chances of second and third retreatments for BRD in high-risk stocker calves (Cortese 2015).

Delaying Vaccines

Delayed vaccination of your calves by 14 days has been shown to improve the acquired immune response of the calf (Richeson et al. 2008). The graph in Figure 1 demonstrates that delaying BRD vaccinations (DMLV) versus on-arrival vaccinations (AMLV) can reduce BRD morbidity percentage in newly received cattle. This two-week delay of vaccinating for BRD allows the cattle to settle in their new environment and destress from all the prior stressors experienced.

The BRD morbidity rate for delaying vaccinations decreased by 8 percent for cattle that had delayed vaccinations compared to that of on-arrival vaccinations (Richeson et al. 2008). When delaying vaccinations, it can lower the presence of calves that are treated for BRD twice than that of calves that are given vaccinations on arrival (Rogers 2016).

When vaccinating your cattle, it might help to investigate the addition of an immunostimulant. An immunostimulant is a substance that can increase the ability of the immune system to fight off diseases and infections. Adding an immunostimulant can help reduce BRD deaths and overall morbidity of heifers, as noted in one study at 60 and 116 days on feed (Rogers 2016). With the addition of the immunostimulant and the delay of BRD vaccines, improvement of overall cattle health has been noted from the lowering of mortality associated with BRD (Rogers 2016).

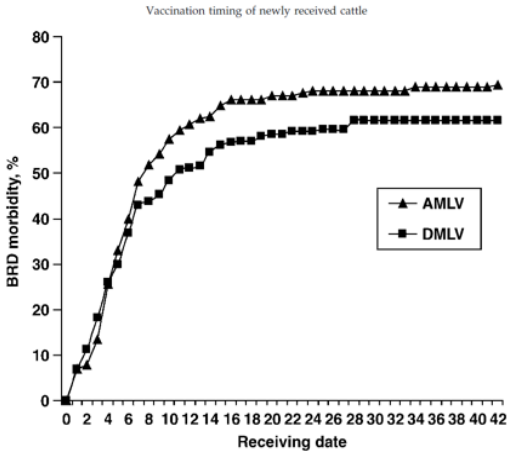


Figure 1
On-arrival vs. delayed vaccinations 14 days and corresponding BRD morbidity precent

Other Vaccine Timing Options

Another option that is available to producers would be to not vaccinate stocker cattle at all for BRD. Cattle that received on-arrival vaccines versus cattle who did not receive a BRD vaccine at all had more prevalence of BRD sickness (Griffin 2018). Other research and analysis have been conducted and found that there were no advantages or disadvantages for on-arrival or delaying BRD vaccinations in BRD mortality, BRD morbidity risk and retreatment risk in the study. Cattle that were not vaccinated had an increase in weight versus cattle that were vaccinated for BRD as stated in figure 2 (Griffin 2018). If you plan on giving your cattle dewormers, there is research that states there is no detrimental or beneficial impacts with using dewormers in respect to health or performance factors (Griffin 2018).

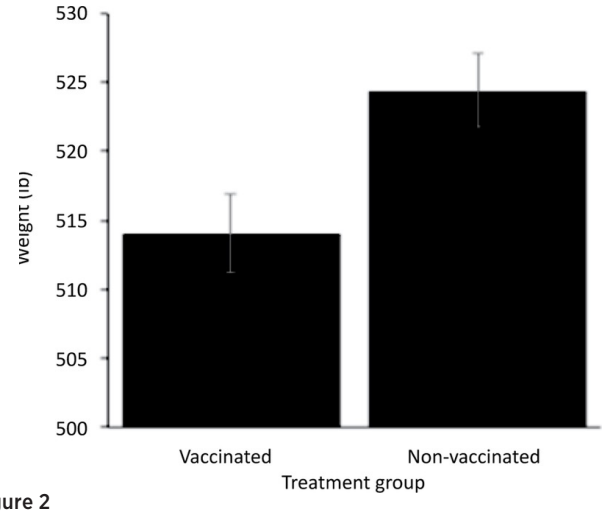


Figure 2
Vaccinated vs. non-vaccinated cattle in retrospect to weight

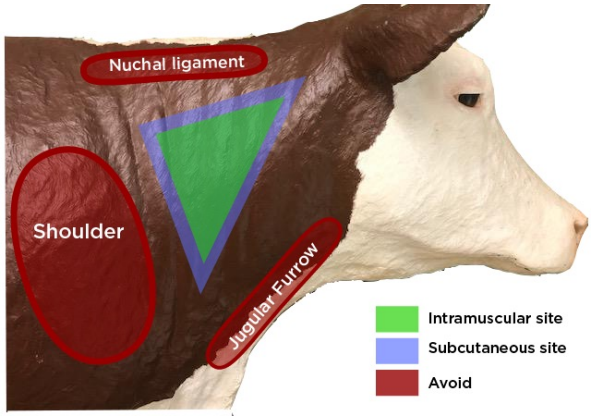


Figure 3
Vaccine placement in cattle

Vaccine Placement

Now that you know the "when and what" of stocker cattle vaccines, the next question is where is the best placement is to give the vaccines? This triangular location on a calf as pictured in (Figure 3) is the correct place to give injections to cattle (Buskirk). This applies to your yearly regular vaccinations, antibiotics and other injectable medication. Whether the medication label says to give the injection subcutaneously or intramuscular, this area is the recommended spot to do so. Always follow the medication instruction's label on the best route of administration and where to give the medication if specifically stated. Always consult your veterinarian if you have questions on when and what to give to your cattle.

Overview

There are benefits to each category for the BRD vaccination timing for stocker cattle. As a producer you need to evaluate what works best for your operation and what timing option makes the most sense to you. As of now, more research should be done in a production-based setting to fully evaluate which vaccination timing for BRD is the best option.

Resources

Buskirk, D., F. Wardynski, J. Grobblel, and D. Grooms. Animal Health Records Manual. Michigan State University Extension.

Cortese, V. 2015. Evaluation of commercially available multivalent modified-live viral vaccines on health and performance in feedlot cattle. Jacobs Journal of Vaccines and Vaccination 1(3):10.

Griffin, C. M, J. A. Scott, B. B. Karisch, A. R. Woolums, J. R. Blanton, R. M. Kaplan, W. B. Epperson, and D. R. Smith. Spring 2018. A randomized controlled trial to test the effect of on-arrival vaccination and deworming on stocker cattle health and growth performance. Bov Pract (Stillwater) 52(1):26-33. PMID: 31123372; MCID: PMC6528666.

Richeson, J. T., et al. 2008. Effects of on-arrival versus delayed modified live virus vaccination on health, performance, and serum infectious bovine rhinotracheitis titers of newly received beef calves. Journal of Animal Science 86(4):999-1005.

Rogers, K. C., D. G. Miles, D. G. Renter, J. E. Sears, and J. L. Woodruff. 2016. Effects of delayed respiratory viral vaccine and/or inclusion of an immunostimulant on feedlot health, performance, and carcass merits of auction-market derived feeder heifers. The Bovine Practitioner 50(2): 154-164.



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