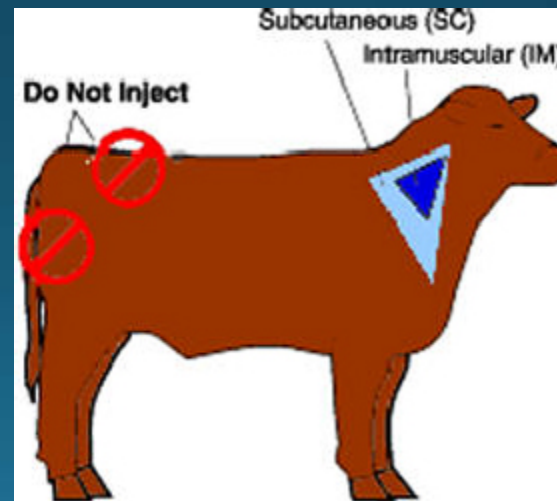


Frank Martin DVM

Cattle Vaccine Protocols

Why Do We Vaccinate

- Protection against virus (BRD, Abortion)
- Protection against bacteria (Vibrio, Lepto)
- Protection against protozoa (*Tritrichomonas foetus*)
- Vaccines can be used in a preventative manner or can even be used in the face of disease.



Cattle Groups

- Calves: Birth to less than 6 months old
- Young Stock: 6 months to 2 years old
- Cows
- Bulls
- The immune system of cattle is not considered mature until 6 months old. Any vaccine given below 6 months needs to be repeated if you want continued protection.

Calves: Scours

- Calf Guard (Zoetis)
 - Protects against bovine Rotavirus, Coronavirus and E-coli k99
 - These are the major causes of calf scours and can lead to death loss and increased morbidity in the herd.
 - Must be given immediately after birth to be effective.

Calves: Bovine Respirator Disease

- Inforce 3 (Zoetis)
 - Protects against IBR, PI3 and BRSV
 - These are significant respiratory pathogens in calves infection with these viral pathogens set the calf up for a secondary bacterial pneumonia.
 - Very safe vaccine, intranasal administration and causes rapid local protection against infection.



Calves: BRD continued

- One Shot (Zoetis)
 - Mannheimia Haemolytica bacteria vaccine. This is a common bacterial cause of severe pneumonia.
 - A single dose SQ given at least 14 days before weaning, hauling or other stress event significantly reduces severity of pneumonia.



Calves: BRD continued

- Once PMH IN (Merk Animal Health)
 - Mannheimia Haemolytica and Pasturella Multocida protection.
 - Two of the most common pathogenic pneumonia bacteria.
 - Intranasal administration. Safe rapid protection.
 - Safe for use for cattle one week or older
 - Once PMH SQ covers the same pathogens, Subcutaneous administration safe for use in calves 3 months or older.



Calves: Other Vaccines

- Pinkeye: Caused by Moraxella Bovis and Moraxella Bovoculi
- Several vaccines available over the counter. (Piliguard, Ocuguard, I-site XP, Pinkeye Shield XT₄)
- Can Be included with the clostridia vaccine (Alpha 7/mb1)
- Zoetis has a freeze dried solid bac formulation that deposits two pills beneath the skin. One dissolves rapidly delivering the first dose, the second dissolves slowly delivering the booster dose.
- Autogenous Vaccines: Work with your veterinarian and local diagnostic lab.

Calves: Other Vaccines

- Brucellosis: We are brucellosis free in California but there is significant value to vaccination.
- Must be administered by veterinarian.
- Required for interstate transport to many states
- Protects your herd from a catastrophic disease that has a significant zoonotic potential.



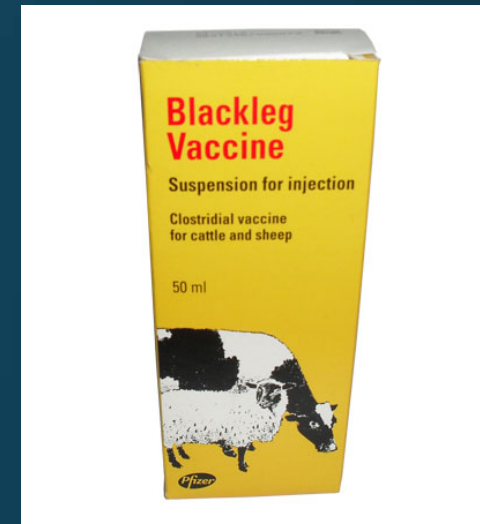
Core Vaccines

- These are the most vital vaccines to build your protocol on.
- 10 Way Vaccine-Multiviral+lepto
- 8 Way Vaccine Clostridial



Young Stock: Clostridium

- Known as 8-way, Blackleg, redwater
- Vital part of any vaccine program
- Clostridium Chauvoei, septicum, haemolyticum, novyi, tetani and perfringens types C+D
- Clostridial organisms can kill cattle of any age.
- Clostridial disease usually potentiated by stress, feed change, transport, bruising.
- Clostridia is in the environment, you cant get away from it, even in a closed herd.
- Vision 8, Ultrachoice 8, Alpha 7, Covexin 8, Calvary 9



Young Stock: Multi-Viral+Lepto

- Commonly called 10 way vaccines.
- Modified live and killed versions of the vaccines, both are good.
- Considered a “core” vaccine of any protocol alongside the clostridial vaccines.
- IBR, BVD type 1 and type 2, BRSV, PI3 and Lepto 5 are the common agents found in these vaccines.
- Can add Mannheimia, Pasturella, Vibrio in many vaccines. (If you can bundle in your extra vaccines that's the safest best way)

Young Stock: Multi-Viral+Lepto

- The viral component can cause abortion in pregnant cattle as well as pneumonia or upper airway infection.
- The disease agents that these vaccines protect against cause BRD and Leptospirosis in young cattle. These same agents cause abortion in older cattle.
- Leptospirosis causes breakage of red blood cells and lack of oxygen carrying capacity in young cattle and abortion in mature animals.
- IBR, PI3 and BRSV are all significant BRD virus.
- Modified live vaccines do not require a booster of the viral component. Killed vaccines require a booster 2-4 weeks later
- Modified live vaccines are generally not considered safe for pregnant cattle, killed are safe for pregnant cattle.

Young Stock: Multi-Viral+Lepto

- Common modified live vaccines: Bovi-Shield Gold(Zoetis), Express(Boehringer Ingelheim), Titanium(Elanco), Pyramid(Boehringer Ingelheim), Vista(Merk)
- Common killed vaccines: Triangle(Boehringer Ingelheim), Cattle Master (Zoetis), Virashield(Elanco)
- This type of vaccine should be given to calves at branding time, booster if needed and then annual vaccination from there forward.

Cows

- Annual Vaccination with the core vaccines
- 10 way multi-viral+lepto, and Clostridial vaccines.
- Killed Vaccines preferred with pregnant cattle (example during preg-check in the fall).
- Modified live vaccines ok before turning out bulls in the spring (example when the cattle are gathered at branding time).



Cows: Other Vaccines

- Trichguard (Boehringer Ingelheim)
 - Killed vaccine for Tritrichomonas foetus protozoa.
 - Decreases the shedding of Tritrichomonas foetus in the herd.
 - Decreases the incidence of infection in the herd
 - Great to add to extensive range settings and govt leases where cattle may be co-mingled with neighbors cattle.
 - Trich can be a catastrophic disease drastically decreasing the calf crop and has regulatory concerns.

Cows: Other Vaccines

- Vibrio: Campylobacter fetus bacteria
 - Venereal disease spread by infected bulls causing poor conception rates and increased abortion rates.
 - Vibrio can be vaccinated for with stand alone vaccines (vibrin)
 - Vibrio can be included in many other core vaccines. (Bovi-Shield VL5, ViraShield VL5, Express VL5, Vista VL5)
 - Vibrio can also be given as a Vibrio Lepto 5 Combination. (Stay Bred VL5, Citadel VL5, Vib Shield Plus L5,)
 - If you use bulls in your breeding program Vibrio should be included in your vaccine program.

Cows: Other Vaccines

- Scours Protection: Rotavirus, Coronavirus E-coli K99
- These vaccines will increase IGG levels in the colostrum that will pass on enhanced immunity to the calf
- Possibly the easier more realistic way to protect the calf against scours.
- Scour Guard (Zoetis), Scour Bos (Elanco), Guardian (Merk)
- Some formulations are combined with clostridial vaccine for ease of administration.

Bulls

- Core Vaccines: 10 way Multi-viral+Lepto, Clostridial annually
- Annual Vaccination with Vibrio vaccine
- Trichguard



Sample Vaccine Protocol

- Calves at birth: Rotavirus Corona Virus E-coli Scours Vaccine, Intranasal IBR, BRSV PI3 vaccine
- Calf Branding: Core Vaccines (Multiviral+Lepto 5 Vaccine, Clostridial Vaccine), Pinkeye.
- Pre-Breeding Heifers: Core Vaccines, add Vibrio which will need a booster.
- Cows Pre-breeding: Core Vaccine with Vibrio+Trich Guard.
- Bulls Pre-breeding: Core Vaccine with Vibrio+Trich Guard.
- Cows at Preg Check: Scours Vaccine with Core Vaccine

Don't Overdo It!!!!

- General rule is never give more than two gram negative vaccines at one time.
- Gram negative vaccines have endotoxins that cause shock and can cause death in cattle.
- Vibrio, Lepto, E. coli, pinkeye, Pasteurella, Brucella
- Combo vaccines are safer than giving many injections of single disease agent vaccines.
- Mishandling the vaccine makes these endotoxic effects worse. (Shaking the bottle too vigorously, heat, freezing, contamination)

Use Common Sense

- Don't vaccinate cattle in the heat of the day
- If cattle are extremely stressed or fractious let them settle down and consider working them in the morning.
- Consult with your veterinarian, they will be able to help you design a protocol that best fits your herd.

Take Care Of Your Vaccine

- Killed vaccine is in general a little tougher than modified live
- No vaccine benefits from sitting in the hot sun for any extended period
- Only mix as much vaccine as you will use in the next 30-45 min
- Keep it covered up and cool.



Thank You. Any Questions?