

North Star Veterinary Services Newsletter

November 2019

Vaccinations

Vaccinations are an extremely important tool in keeping cattle healthy. Although we provide our animals with excellent housing, nutrition, and management, diseases can still cause problems on farms especially when animals are housed together in close proximity, new animals are introduced into a herd, and at times of year when good ventilation is a challenge to achieve. There are many different possible vaccinations on the market, and it can be difficult to decide which ones to use and when. It is always best to create a vaccination plan specific to your farm with your veterinarian, but in this issue we will cover some basic guidelines about vaccine use.

What is a vaccine?

A vaccination is a substance used to stimulate an immune response to a specific disease. After a vaccination, the animal will begin producing specific antibodies against the disease it was vaccinated for so in the future if they encounter that specific disease their immune system will be able to respond appropriately to it. Vaccinations are not used to treat a disease, they are used to help prevent them. It is important to understand that vaccinations are not a substitute for adequate nutrition, housing, bio-security, and management. If an animal's immune system is compromised or the amount of disease in an environment is too high, they can still fall ill with a disease even if they were vaccinated. Additionally, vaccinations need to be stored, handled, and administered properly in order to be effective.

What different types of vaccines are available?

In cattle, there are **three** main types of vaccinations that we use.

1. **Modified live** vaccine which has an altered virus or bacterium in it that will not cause clinical disease but will still cause an immune response. These vaccines are less stable so the liquid is often separated and must be added within 1 hour of using the vaccine. Some examples of this are Bovi-Shield, Inforce 3, Vista Once, and Express. These vaccines provide adequate immunity after only one dose, although we sometimes booster certain ones depending on the situation.
2. **Killed** vaccine which contains killed virus or bacterium. For an immune response to occur, the vaccine contains adjuvant which irritates the injection site signaling the body that there is a foreign substance. These are more stable but still need to be kept refrigerated. Some examples of this type are Triangle 10, Vira-Shield, Ultrabac, and J-Vac.

This vaccine needs to be given twice two weeks apart to provide any immunity.

3. **Toxoid** which is like a killed vaccine but instead protects against the toxin that is produced by the infection. The main example of this is any vaccine that protects against tetanus such as CD-T (bar-vac).

This vaccine needs to be given twice two weeks apart to provide any immunity.

Which vaccines should you use on your farm?

Each farm is different with different goals and needs. For a custom vaccine plan, it is best to consult with your veterinarian. In general though, we do recommend all farms have some vaccination in place for both the common respiratory viruses (vaccines like Bovi-shield, Vista Once, or Triangle 10) and for Clostridial diseases like blackleg (Ultrabac 7).

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When should you vaccinate?

Vaccines only work if the animal is given enough time for their immune system to respond. Each animal is different in how long it takes but a general recommendation is 3-4 weeks before the animal will be exposed to the disease you are vaccinating against.

For most vaccines, **TWO DOSES** is required to have the proper immune response. For example, if you are bringing an animal to a show or fair. It is best to have them completely vaccinated 3-4 weeks before they go in order to give them the best chance of being protected.

Remember to always follow the labels on vaccines in regards to who should and should not be vaccinated with it. In general calves less than 3 months cannot be vaccinated except with a few vaccines labeled for them (Calf-gaurd and Inforce 3). Additionally, modified live should never be used in pregnant animals that have never been vaccinated with that vaccine or with unknown vaccine status because it can cause abortion.

How to properly handle vaccines

In addition to proper timing of administration, vaccines must also be stored and handled properly in order to be effective. Here are some tips to remember when handling vaccines.

- Store at proper temperature according to label - usually between 35 and 45 degrees Fahrenheit (refrigerated).
- Do not expose vaccines to sunlight or heat.
- Use modified live vaccines within 1 hour of mixing. Never save mixed modified live vaccines for later use.
- Clean re-usable multi-dose syringes with hot distilled water (at least 212 degrees Fahrenheit). Do not use soap or disinfectant.
- Throw out bent or broken needles. Do not stick a dirty or used needle into a bottle of vaccines. Change needles often (about every 5-10 animals).

What risks do vaccinations have?

Most vaccines can commonly cause mild reactions such as decreased energy and decreased milk production. These are normal reactions, and in fact indicate that the vaccine is working and making the cow's immune system do some work! Some cows may even develop a low grade fever. Severe reactions such as allergic reaction are rare, but possible. If you notice a recently vaccinated animal having difficulty breathing, call the vet! To reduce risk of vaccination reaction, do not vaccinate animals during times of stress such as extreme weather or during travel.

Upcoming educational events

ProDairy through Cornell is hosting two cow comfort workshops in the month of December.

- Freestall Cow Comfort: Dec 6, 2019 9:30am-3:00pm at Scotty's Diner 1049 US-11, Moiria, NY
- Tie Stall Cow Comfort: Dec 9, 2019 9:30am-3:00pm at CCE Jefferson County, 203 N. Hamilton St, Watertown, NY

Each course is \$20 pre-registration or \$25 the day of the event. To register contact Tatum Langworthy at tlm92@cornell.edu or 31-788-8450



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