

bryonic death and abortions. BVD vaccine should start on the farm with two shots usually three to four weeks apart in the heifer or calf lot. BVD may be given in combination with other vaccines, but it is important that animals being given BVD vaccines, are not stressed from other management procedures. Two shots are usually important to develop sustained immunity. BVD vaccines should be boosted yearly.

2. IBR (Infectious Bovine Rhinotracheitis) is a virus that can cause respiratory disease and has been associated with early embryonic death. Usually it is given with BVD.

3. BRSV (Bovine Respiratory Syncytial Virus) is a cause of respiratory disease. Two shots of this vaccine three to four weeks apart are a must. Even if the manufacturer states one shot of BVD and IBR is sufficient, the BRSV almost always needs boosted. In those cases I advocate boosting BVD, IBR and BRSV at the same time.

4. Lepto abortion storms can be very devastating to the reproductive status of a herd. Lepto abortion usually occurs during the last third of pregnancy. Immunity from Lepto vaccine wanes in less than a year. Vaccination protocols vary with exposure rates with some veterinarians recommending vaccinating with a five-way vaccine as often as quarterly. Most farms do well with one dose of five-way Lepto given to cattle after they are pronounced pregnant. This assumes they received a primary and secondary booster as heifers. We often associate wildlife as vectors for the Lepto germ, thus indicating spring vaccination might prevent the disease when cattle are exposed to the deer population. However, often we have found that cattle contract Lepto in the winter when they are exposed to the germ that is spread by rodents in the haystack.

5. Blackleg, malignant edema, and other clostridial diseases can be deadly and should be vaccinated against on an individual farm need.

6. E. coli mastitis is an important cause of the loss of life and milk production and its severity can be reduced with the "core antigen" products J-Vac and J-5.

7. Neospora vaccine is available to prevent Neospora abortion. This vaccine was conditionally released and is still experimental. However, if you have documented Neospora abortions on your farm, you don't have any other vaccination alternatives to help in reducing this disease.

8. Pinkeye vaccines are used on many farms and in many situations appear to reduce disease incidence.

9. Staph vaccine is used to help reduce Staph aureus mastitis. While it may help, vaccination should not be used as the primary defense against this disease.

10. Brucellosis vaccine is still used to prevent this dreaded disease, but is more commonly used to enhance livestock value. Some states require brucellosis vaccination before cattle can be imported into their state.

How and when we vaccinate can be more important than the vaccines we use.

1. Do not vaccinate stressed cattle. Cattle that have been trucked three hundred miles are not likely to respond to vaccines. Weaned calves respond poorly to vaccines, thus vaccinating a few weeks prior to weaning gives good immunity. Dairy cows, from a few days prior to calving up to a

week or more after calving, have high cortisone levels and respond poorly to vaccinations given on calving day.

2. Limit exposure to vaccines containing endotoxins. Some vaccines such as Hemophilus are notorious for containing endotoxins. Don't give combination vaccines with Hemophilus in them along with other vaccines containing gram negative bacterins. You are liable not to stimulate any protection at all but just frustrate the immune system. A good rule of thumb is not to give more than two gram negative vaccines to dairy breeds at a time or more than three gram negative vaccines to beef breeds at a time. Gram negative vaccines include Lepto 5 complex, clostridial disease complex, J-Vac or J-5 vaccine, Pasteurella and other E. coli vaccines in combination with rota and corona virus.

3. Time of day vaccines are given can affect response to vaccines. Studies show vaccines given in the cool morning hours elicit more of a response than vaccines given in the hottest time of the day.

4. Vaccines should always be refrigerated even when hauled out to the treatment area and clean syringes and needles should be used. Never mix two vaccines in the same syringes. The old thought, "It's all going to the same place" does not apply.

All vaccines are not created equal. Just because two different vaccines list the names of the same eight diseases does not mean they have been tested and researched to the same extent. A few years ago two products were available to protect against the same disease. One drug company advertised research involving over a thousand cows. I asked the company representative of the second company for a copy of the efficacy trials before I would purchase his product. It turned out the product had been tested on 13 cows. Obviously I had more confidence in the first product.

Vaccine manufacturers' advertisements can be deceptive. One company advertised that its product protected against agents (BVD and IBR) that cause abortion and early embryonic deaths in cattle. Another company actually had data where they vaccinated cattle that previously had no titers to BVD and left a group of controls unvaccinated. Later both groups were bred and all cattle were exposed to BVD virus. Many of the non-vaccinates aborted but none of the vaccinated cattle aborted. I felt the second company actually had legitimate bragging rights.

Armed with the data from the second company I approached the head of technical service of the first company and asked if they had ran studies to see if the fetuses were actually protected by their vaccines. After some philosophizing he explained that such studies were very difficult and expensive and that they had actually not done any of those studies. I always go with the product with the most testing behind it.

While vaccinating against diseases is a very important practice, you should remember that even the best of vaccination protocols can be over-ridden by poor management. Vaccination protocols need to be customized for each operation. Sometimes too much is as bad as not enough. Your herd veterinarian should be consulted in designing a protocol that is right for you.