

# Vaccines &



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# Vaccination Schedules

**A controlled breeding season simplifies designing an effective herd vaccination program.**

*by Heather Smith Thomas*

**T**o have an effective vaccination program, producers must follow good overall herd health management practices augmented by vaccination, says veterinarian Allen Heath, Auburn University College of Veterinary Medicine, Auburn, Ala. “You should not expect protection to come from a bottle.”

Good management techniques, he says, include isolating and testing herd additions, attempting to keep a closed herd, and trying to prevent the introduction of disease.

“Key to a good vaccination

program,” he says, “is a well-controlled breeding program. If you have a controlled breeding season, it makes it easy to vaccinate at the right time, . . . then you can tailor the vaccine to the cows better.” And you have more options for what type of vaccine — modified-live-virus (MLV) or killed — to use.

Heath says that in his area he prefers that most vaccinations be administered before breeding, because many diseases affect cows during early gestation. If he can give prebreeding vaccinations, he prefers to use the MLV vaccines to protect against infectious

bovine rhinotracheitis (IBR) and bovine viral diarrhea (BVD). “These give longer and better immunity,” he says.

If the herd has a long or uncontrolled breeding season, he recommends using killed vaccine because it is safer for the pregnant cow. “The initial vaccination has to be two injections, then it can be given once a year. Practicality comes into play here; in some herds you may only be able to get them through the chute once a year,” he says.

## Diseases of concern

Heath says he bases a typical prebreeding vaccination program on a four-way vaccine for the respiratory diseases — IBR, BVD, parainfluenza-3 virus (PI<sub>3</sub>) and bovine respiratory syncytial virus (BRSV). The two that can cause problems in the pregnant cow are IBR and BVD.

Depending on the producer’s location, Heath says he may recommend protection against five strains of leptospirosis (lepto). “If you are in a region that’s known to have a lot of lepto or you have a herd history of lepto, this may be the one you need to revaccinate with during pregnancy, giving it twice a year or sometimes as often as every three months,” he says, recommending producers consult their veterinarians for local needs.

“For the country in general, I’d recommend vaccinating [for] lepto prior to breeding, but if a herd has had lepto diagnosed in it before and you still have the conditions that may make lepto prevalent (stagnant drinking water, wildlife), you need to come back in and vaccinate, maybe as much as every three months during pregnancy,” he says. “The lepto vaccine tends to give only short-lived immunity versus some of the other vaccines.”

Vibriosis is the other vaccine Heath often adds to vaccination schedules. “As with all diseases, the best protection is management,” he cautions. “Vibriosis can be controlled more with management than by

just relying on a vaccine for protection.”

The benefit of management techniques to prevent disease entry into the herd is especially true with BVD. “One persistently infected (PI) cow brought into the herd can give you potential for disaster, no matter what the vaccination status of the herd — because vaccinations are never 100% effective, especially when talking about BVD,” he says.

“We feel comfortable that the BVD vaccine will protect the mama cow, but protection for the fetus (which is what we’re really striving for) is actually pretty questionable. The reason that vaccine helps is that it does protect Mama and decreases the herd incidence of disease. But on an individual basis, the fetus may still be susceptible, even though Mama will not show clinical signs because she has been vaccinated.” You need a healthy herd.

“Vaccine is like the cherry on top of the chocolate sundae,” Heath says. “It’s that last thing you put on, but unfortunately it’s the first thing — the easiest thing — many folks want to do. Then you get a lot of so-called ‘vaccination breaks’ because you’re expecting too much from the vaccinations, expecting things they really can’t do.”

## Replacement heifers

Heifers require a different approach, Heath says. “The main difference is to make sure they have adequate protection from clostridial diseases, such as blackleg.”

Another consideration, he says, if you’ve had a history and a well-defined diagnosis of scours in baby calves, is whether it may be appropriate to use a scours vaccine. Most of these are given two to four weeks prior to calving.

“I don’t suggest these as a routine management scheme,” Heath says. “First, you need good management, such as clean calving areas and having the cattle spread out. After that, when you have a well-defined problem that’s confirmed by a

► Above: A good health program focuses on proper management augmented by a vaccination program.

diagnostic lab and if that problem occurs year in and year out, in these instances the scour vaccines do seem to help.”

Heath recommends tailoring the type of scour vaccine you use to the problem on your farm. “This is not something we recommend across the board; it could be a waste of time, energy and money, and although we talk about the price of vaccine, the real cost is in labor — to get the cows up and processed.”

### Calves

Vaccination is an important part of any preweaning program, Heath says. “I generally suggest the use of products labeled for use around pregnant cows. These [killed-virus vaccines] are the safest products to use on calves that are still nursing.”

Heath says that while some MLV vaccines are safe, it’s important to read the label of each vaccine or to consult your veterinarian.

“Use the vaccine for the four respiratory diseases, vaccinating calves two to four weeks before weaning, but use the type that’s safe around pregnant cows,” Heath says. “That way, the stress of the vaccine is lessened somewhat by the fact that the calf goes back to Mama and is nursing; you have only one stress point there instead of multiple stresses.”

He says some producers have found MLV vaccines to work well on calves without causing cows to abort. But, he warns, the decision to use them must be made by the local veterinarian, and they should be used only when the status of the mama cows is known and when the cows have good immunity already.

“I feel it’s generally then safe to use the modified-live on the calves, but that decision should be made by the local practitioner,” Heath says. “A vaccination schedule should be tailored to each individual farm, and the place to find out what would work best is usually the local veterinarian. These are the people who know what’s

happening in the area and what needs to be done. All vaccination schedules should be approved by or talked about with your local veterinarian, rather than using generalities.”

“With calves, we talk about the four respiratory viruses, but the blackleg shot is probably the one vaccine every calf needs,” he says. “It was the first vaccine developed for cattle, and it’s also the cheapest. There’s no reason to leave any calf unprotected.”

More optional and questionable as far as efficacy, he says, are the pasteurella vaccines. “If these are used, you need to make sure you use the two-way vaccines so you give protection against both the bacteria and the toxin produced by the bacteria. I think these are appropriate for animals going to a high-stress environment like a feedyard.”

### Marketing strategies

Heath says that, from a philosophical level, all calves should be vaccinated

preweaning; however, from a practical level, it’s hard for producers to get a return on the investment if they sell commodity calves at the sale barn. Then it’s hard to justify that vaccination economically.

“You wind up spending a lot of money to benefit someone else down the line, though from a philosophical standpoint, it means less total use of antibiotics in the calves later,” he says.

However, when preweaning vaccinations become a regular management tool and calves with known health status are sold in individual sales, production sales or by private treaty directly to stockers or feedlot operators, there is a return on the investment.

“In that situation, most of those buyers will reward you as much as 5¢ to 7¢ per pound (lb.) for the fact you have given calves some vaccinations prior to weaning. It’s getting to the point now that, if you are selling

directly to a stocker or feedlot operator, they’re going to demand that this be done,” Heath says.

More calves are being marketed directly, he adds. In that scenario the vaccinations can have a positive effect for both buyer and seller. The seller gets paid a premium, the buyer gets healthier calves, and the industry can reduce antibiotic use.

While calfhoo vaccination for leptospirosis is not commonly necessary in his area, Heath says it may be a problem in other areas. Ask your veterinarian if it should be a part of your calfhoo vaccination program.

Any heifers you plan to use for replacements need vaccination for brucellosis (Bang’s disease), he explains, adding that some states require brucellosis vaccinations as a matter of course — as part of the regulatory requirements before they can be shipped there, even if it’s to a feedyard.

“Vaccinating all heifers is good marketing strategy,” Heath says. “You have more options as to where they can go. Even [to] the people buying and selling through the local auctions, it seems like that orange tag in the ear is worth an extra 2¢ — just for the fact it gives more marketing options to the buyer of those calves. It also suggests that other good management practices have been applied to the calf. If you vaccinate for *Brucella*, there’s a better chance the calves have also been dewormed, etc.”

Heath says management is the first priority for herd health, then vaccinations. And the only way to vaccinate properly is in conjunction with a controlled breeding program.

“A vaccination program should always be tailored to the individual farm and situation, especially with calves — how they will be marketed, where they are going to go, what level of stress they will be put through. All these factors become variables in deciding what vaccinations to use,” he concludes.



► “All vaccinations, of course, should be given according to beef quality assurance (BQA) guidelines, which by definition means subcutaneously if possible, and in front of the shoulder blades,” Allen Heath, Auburn University College of Veterinary Medicine, reminds producers.

