

Beef Cow/Calf Herd Health Program and Calendar

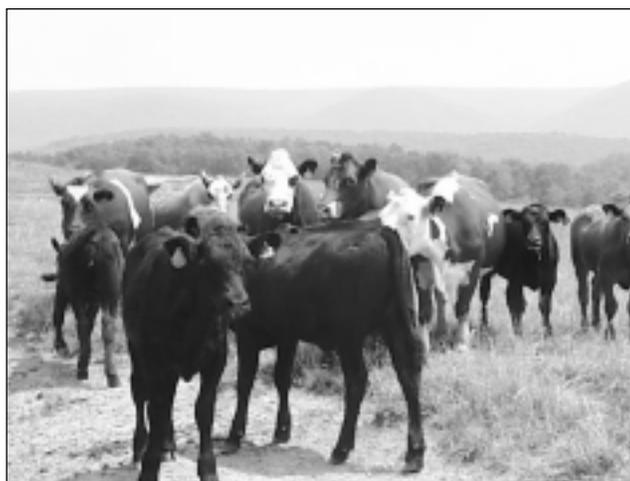
*W. Dee Whittier and John Currin**

Losses caused by disease represent a major obstacle to the profitability of many cow/calf beef operations. Disease results in animal death, failure or decreased efficiency in reproduction, and decreases in growth and productivity. Some diseases exist at "subclinical levels," meaning signs are not observable so losses continue undetected, robbing the cow/calf operator of profits. If high levels of health are maintained, healthy cattle generally will have a higher value at sale time.

It is widely agreed that prevention rather than treatment is the most economical approach to keeping disease losses low. Treatment of a disease after its onset is not always effective and is often costly. Production losses often occur before diagnosis and treatment can be instituted. Herd health programs are designed to provide routine, planned procedures which will prevent or minimize disease.

Developing A Herd Health Program

Many herd health programs fail in their objectives because too much reliance is put on vaccinations and



other treatments. A comprehensive herd health program recognizes vaccination as an important tool, but not a cure-all. Effective programs integrate medicine and management to prevent disease. Three major factors should be considered in attempting to keep disease losses to a minimum:

- 1) **Prevent Exposure to Disease.** Purchase and quarantine procedures should be employed to decrease the likelihood of disease introduction into the existing herd. In high intensity operations, increasing confinement means increasing exposure to disease-causing organisms that exist in all groups of animals. Such operations need more intensive preventive programs.
- 2) **Keep Disease Resistance High.** Nutrition, management, and housing programs should be designed to keep resistance to disease high at all times. Preventing or minimizing animal stress is a necessity for maintaining good resistance. In addition to these measures, resistance to specific diseases can sometimes be accomplished by vaccination.

*Extension Specialists and Professors, Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech

3) If Disease Occurs, Prevent its Spread.

Segregate affected animals immediately. Have a diagnosis made, and take recommended action as soon as possible.

Herd health programs must be tailored to each individual production situation. Performance of procedures should be grouped because cattle handling is expensive, time consuming, and stressful to cattle. In some cases, the cost of performing a procedure may outweigh the benefits gained. Every procedure should be evaluated in terms of its potential to be cost-beneficial. Veterinarians can be of tremendous help in establishing and maintaining health programs. They keep current with new developments in disease occurrence and in procedures available to prevent and treat diseases. Knowledge and experience enable them to help tailor programs that are based on the goals, capabilities, and situations present on given farms.



It is important for your veterinarian to be a part of the herd health team.

Calendar For A Herd-Health Program In The Beef Cow/Calf Operation

This program is based on handling cows twice a year and calves twice a year, along with administering some procedures to newborn calves. Times are given in relation to the time of the production cycle rather than calendar dates so that the program may be adapted for a calving season that begins any time of the year. Herd health programs and other cattle management procedures work best when calving is confined to a 60-90 day period.

Herd-Health Procedures For Adults:

1. Pre-breeding

Cows

- Reproductive vaccines
 - Leptospirosis
 - Vibriosis if needed
 - IBR, BVD, PI3, BRSV virus vaccines (if a modified live vaccine is used, be sure the animal is open)
- External parasite control (lice and grub control in fall, fly control in summer)
- Check Identification
- Check eyes, teeth, feet and legs, udders

Bulls

- Breeding Soundness Examination
- Reproductive vaccines
 - Leptospirosis
 - Vibriosis and/or Trichomoniasis if needed
 - IBR, BVD, PI3, BRSV virus vaccines

2. Pre-weaning

Cows

- Pregnancy diagnosis
- Leptospirosis booster vaccine
- Check eyes, teeth, feet and legs, udders
- External parasite control (lice and grub control in fall, fly control in summer)
- Check identification
- Scours vaccines needed

Health Procedures For Calves:

1. Newborn calf: 24 hours of age

- Identify
- Disinfect navel
- Vitamin A & D injection
- Vitamin E/ Selenium injection
- 7 way clostridial vaccine (Calves should receive an initial dose and a booster. Ideally these are given at 3 months of age and again 2-4 weeks later. These recommendations recognize that this procedure does not fit well into management schemes. A vaccination soon after birth may not lead to sufficient immunity because of interference by the dam's antibodies passed in the colostrum. If, however, calves will not receive another dose until weaning, vaccination

of the newborn is preferable to no vaccination.)

- Implant growth promotant (implant heifer calves only if they will not be used as replacements)
- Castrate bull calves
- Dehorn if needed

2. Mid- nursing period (2-6 months of age)

- Vaccination
 - 7-way clostridial vaccine
 - Respiratory vaccinations (especially if killed products are used; booster dose given at preweaning)
- Implant growth promotant
 - Replacement heifers less than 400 lbs. can be given a single implant
- Deworm: Timing is important. Should be given in early to mid-July for spring-born calves, at beginning of grazing for fall-born calves
- Dehorn if needed

3. Preweaning- These procedures should be done 3-4 weeks prior to weaning to allow time for immunity to develop before the high-risk event of weaning. Procedures performed will be somewhat variable depending on plans for calves following weaning (retained ownership versus sale and method of sale).

- Vaccinations
 - 7- way clostridial
 - Respiratory (IBR, BVD, PI3, BRSV virus vaccines, consider Pasteurella)
 - Brucellosis for replacement heifers
- External Parasite Control
- Deworm
- Implant Growth promotant
- Dehorn if needed

Detailed Beef Herd Procedures & Treatments

(Rationale for calendar items above and other non-timed procedures that promote health for cows and calves)

A. CALF PROTECTION

1. CALVING DIFFICULTY WATCH. A clean area should be provided for calving; pastures are

usually best. The calving pasture should be small enough that all animals can be observed several (3-4) times a day. A holding area to restrain animals with calving difficulty is important. Animals that isolate themselves from the herd for more than 8 hours or that are in active labor for more than 1-2 hours should be assisted.

2. NAVEL CORD. Dip navel cord at birth. A 7% tincture of iodine kills bacteria and dries up the navel cord to prevent infection. If this procedure is not done, the navel cord can serve as a source of infection that may cause a systemic infection. This procedure is less critical if cows are calving on clean pastures.

3. VITAMIN/MINERAL INJECTION. The soil levels of selenium in Virginia are frequently inadequate to prevent the occurrence of white muscle disease without supplementation. Adults can be protected by feed supplementation, but calves should be injected at birth with a Vitamin E/Selenium preparation such as Bo-Se or Mu-Se. Vitamin A and D injections at birth, though optional, are recommended following winter feeding of poorer quality hays or following droughts because liver stores of Vitamin A in the newborn calf may be very low.

4. COLOSTRUM. The first milk contains all the antibodies a newborn calf will have until it has time to make its own. Be sure calves get plenty (10-12% of body weight in the first 24 hours, half of this in the first 6 hours; 3-6 quarts depending on calf size). Calves from heifers or cows with big udders or teats run a great risk of not getting enough colostrum.

5. INFECTIOUS DISEASES. There are two ways to provide calves with antibodies to fight off infectious diseases. The first is to vaccinate the dam and assure that the calf ingests her colostrum (first milk) during the first 6 hours of its life. The antibodies the cow has made to resist the diseases for which she has immunity (from exposure or vaccination) will be present in her "first" milk for approximately 24 hours after calving and will help protect the calf during the first 6-8 weeks of life. The second way to provide antibodies against infectious diseases for the calf is to vaccinate it and allow it to develop its own

antibodies. Both of these forms of protection, done together, will provide the greatest protection for the calf. The herd health program outlined will provide for both forms of protection.

6. **RESPIRATORY DISEASE:** A calf will be protected from respiratory disease such as pneumonia, IBR, etc., in four ways if vaccination programs are combined with appropriate management. First, the calf will receive antibodies from its dam before birth. Second, it will produce general antibodies in response to the vaccines it receives during preweaning conditioning (IBR, BVD, PI3, BRSV). At the time of the vaccination the passive immunity the calf received from the cow will be replaced by the calf's own immunity. Third, the calf will be handled in such a way that stress is minimized. Stress and the changes that occur in the calves' immune and metabolic systems as they adjust to new environments are nearly always part of a respiratory disease outbreak. The times right after calving, during weaning, or when calves are shipped are the times of highest stress. The fourth method of protection involves handling the calf so as to minimize exposure to other calves, particularly those that are already ill or may be incubating disease. This is especially important during periods of stress.
7. **CLOSTRIDIAL DISEASES:** At mid-nursing and again at preweaning, calves should be vaccinated with Clostridium 7-way to prevent blackleg and other clostridial diseases. These diseases typically result in sudden death of animals.
8. **SCOURS DISEASES:** Sanitation at calving is the most effective approach to prevention of scours. Separating all calves that do have scours from the group decreases exposure of healthy calves to scours-causing organisms. Vaccinating cows for scours can be done for some of the agents that cause scours (E. coli and rota/corona viruses). These vaccines typically are given 3 and 6 weeks before a replacement's first calving, then just 3 weeks before they calve in subsequent years. The above calendar recommends boosting at pregnancy diagnosis to avoid an extra handling. Vaccination for scours will not be needed in every setting and will not overcome major breaches in sanitation.
9. **BRUCELLOSIS:** Brucellosis is a disease which results in a high incidence of abortion and related problems in cattle. The disease can also be readily transmitted to humans, causing Undulant Fever. Eradication of the disease was achieved in Virginia by testing cows and slaughtering infected ones. Vaccination has also been extremely important in the control of this disease. Replacement heifer calves in Virginia may be vaccinated for Brucellosis when they are 4-12 months old (regulations in other states vary). Bulls are not vaccinated for Brucellosis because the vaccine can cause testicular inflammation. Brucellosis vaccinations must be performed by a veterinarian. Brucellosis eradication is slated to be complete in the U.S. in 2002, at which time vaccination will become unnecessary. In the meantime, while chances of contracting the disease are minimal, many shipping and sales regulations make it difficult or impossible to sell cows for breeding purposes that have not been vaccinated against the disease.
10. **DEHORNING AND CASTRATION.** Time of dehorning and castration varies with different management schemes. In general, calves will experience fewer negative effects from these procedures when they are done at earlier ages. From a health standpoint, it is better to dehorn calves with electric burners or various other dehorners than with pastes. Pastes may cause irritation to the cow's udder and to the calves' eyes, especially during wet weather. Any dehorning procedure performed incorrectly may result in scar formation. A number of procedures for castration can be applied effectively. The surgical procedure for castration (cutting) has been suggested as preferable to banding or clamping, because it assures that the procedure has been completely accomplished. Early castration, between birth and 30 days of age, is recommended for commercial producers. All instruments used for castration should be washed and soaked in alcohol or some other effective antiseptic between calves. Fly spray should be applied around the scrotum if castration is performed during the fly season.

B. ADULT PROTECTION

1. **INFECTIOUS DISEASES.** There are several diseases in Virginia that may result in abortion and/or infertility - IBR, BVD, PI3, BRSV, Leptospirosis and Vibriosis. For optimal protection from these diseases, all breeding animals should be vaccinated annually one month prior to breeding. Heifers and new bulls must be vaccinated twice prior to breeding with the leptovibrio bacterin vaccine. The IBR, BVD, PI3, BRSV vaccine will protect against abortion as well as respiratory disease in adults. In addition, it will stimulate antibody response in cows and heifers that will later be passed along to calves in colostrum as previously described. Modified live, killed, and combination vaccines are available for these viruses. There are pros and cons to both types and deciding which type to use will depend on factors on the farm and preference. A veterinarian can help you decide which type will work best in a given setting. Protection against Vibrio, a venereal disease, is not needed as part of your vaccination program if only virgin bulls or artificial insemination are used in the herd.
2. **BULL EVALUATION.** Physical and breeding soundness examination of all breeding bulls, prior to the breeding season, is an excellent aid in culling those bulls that have abnormalities which decrease their fertility and is helpful for selecting the best bulls to retain. Semen evaluation by a veterinarian should be used in conjunction with the owner's observation of the bull's mating ability and sexual desire to determine which bulls should be kept.
3. **BREEDING RECOMMENDATIONS.** Breed heifers at least 3 weeks ahead of the cows. This allows heifers more time to get ready to be rebred so that they will calve with the cow herd the next year. First-calf heifers require longer to return to cycling than cows; therefore, calving heifers early will allow extra time for these first-time mothers to catch up.
4. **BRUCELLOSIS AND TUBERCULOSIS TESTING, CERTIFICATION, AND ACCREDITATION.** The advantage of certification and accreditation is that cattle from

the herd can be moved intrastate and interstate without testing. Many sales will forego testing requirements for cattle from certified and accredited herds. Purebred operations should consider certification. For Brucellosis certification, all nonvaccinated cattle, both male and female (except steers and spayed heifers), 6 months of age and older, and all vaccinated cattle, 18 months of age and older, are blood tested. At least two consecutive tests not less than 10 months nor more than 14 months apart are required for initial certification. A negative herd test conducted within 60 days of each anniversary date is required for continuous certification. Two consecutive annual tests must be negative for Tuberculosis accreditation. For reaccreditation, the herd must pass an annual test within a period of 10-14 months of the anniversary date. All cattle over 24 months old, and any animal other than natural additions under 24 months of age, must be tested.

5. **ISOLATION OF PURCHASED ADDITIONS.** New additions to the herd should be tested for Brucellosis and Tuberculosis. Consider testing for Anaplasma and Leukosis as well. At least 30 days of quarantine is recommended during which the new cattle should be kept from contact with farm cattle. During this time testing can be completed, incubating diseases may be detected, and inapparent shedding of disease organisms brought on by the stress of shipping will often stop.
6. **PARASITE CONTROL.** Control of internal parasites (worms) is an important consideration for optimum cattle health. In general, it has not been found to be cost-effective to deworm adult cattle. Spring-born calves, however, will generally have cost-effective gains from mid-summer deworming. Fall-born calves should be included in a spring deworming program (sometimes 2 dewormings) based on the expected time of weaning and post-weaning management. While references to deworming are made in this publication, a comprehensive discussion is not included. The reader is referred to Virginia Cooperative Extension Publication 400-346, "Parasite Control In Grazing Cattle," for more information.

7. **BEEF QUALITY ASSURANCE.** It is important to remember that beef production is food production. In the past, health procedures have sometimes resulted in damage to or contamination of meat. This can be avoided by following a few simple rules: All products should be given according to label recommendations unless otherwise directed by a veterinarian. Always follow slaughter withdrawal times when drugs are administered. Use clean needles, syringes, and other equipment in administering products. Administer products under the skin (subcutaneously) rather than IM (intramuscularly) if the label allows this route. Inject all products in front of the shoulder. IM injections can be safely given in front of the shoulder, 3 inches below the top of the neck. This will avoid bones, nerves, vessels, and ligaments that are in the neck. Injecting in the neck area decreases the chance of causing damage to high-quality meat cuts, such as those in the animal's hindquarter.

Disclaimer

Commercial products are named in this publication for informational purposes only. Virginia Cooperative Extension, Virginia Tech, and Virginia State University do not endorse these products and do not intend discrimination against other products that also may be suitable.