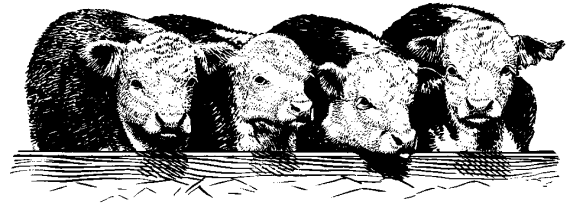


Health Programs and Health Management for Beef Calves



Basic Health Program

Health management systems are essential to profitable beef production. Components of such systems include proper isolation/quarantine procedures (biosecurity), adult and calf immunization programs, premise sanitation practices, and rotation of pastures. Other factors include the provision of safe water sources and adequate but not excessive levels of essential nutrients.

In the mid-1980s, the College of Veterinary Medicine at Mississippi State University developed a basic health plan for calves before their weaning. The plan's goal was to maximize immunity and to minimize stress (MIMS) on the calf at weaning. This program recognized that immunization procedures in the cowherd are vital to helping prevent pregnancy-wastage diseases and in protecting newborn calves until they are 3 to 4 months old.

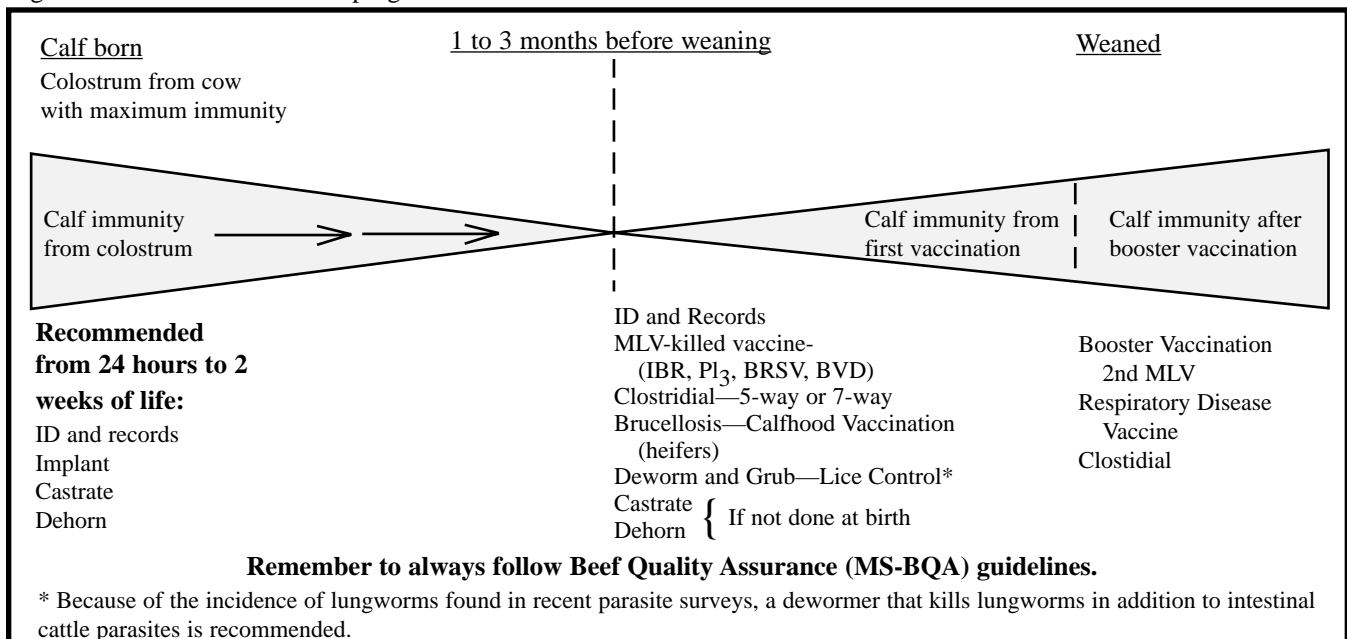
Proper cowherd immunization procedures (see Extension Publication 1346, "Beef Animal Health Program"), parasite control, and nutrition result in maximum immune protection being produced and available to the newborn calf through colostrum. It is important the calf nurses and receives colostrum in the first 16 hours of life. Immunity transferred to a calf through colostrum decreases over time and does not protect a calf after 4 to 6 months of

age, or just before weaning. If the calf receives sufficient immunity through the colostrum, the calf usually does not need to be vaccinated until 3 to 4 weeks before weaning. On some disease-problem farms where cows do not transfer sufficient immunity or lack a complete health program, calves may need to be dewormed and vaccinated for calfhood diseases at 2 to 3 months of age. You and your veterinarian need to make this decision based on the previous disease history of your farm.

The preweaning calf immunization and treatment aspects of the MIMS program are incorporated into the Southeast Pride preweaning health program adopted by seven southeastern states. Implementation of the procedures of Southeast Pride prepares a healthy nursing calf to better withstand stresses such as weaning, movement to another location, and diseases that it may be exposed to after weaning, especially respiratory diseases ("shipping fever"). The program also separates stressful procedures such as castration and dehorning from the stress of weaning, which is the most extreme in a calf's life to that point.

Figure 1 depicts the basic beef calf health plan and the influence of health management practices on the calf's level of immunity (resistance to disease).

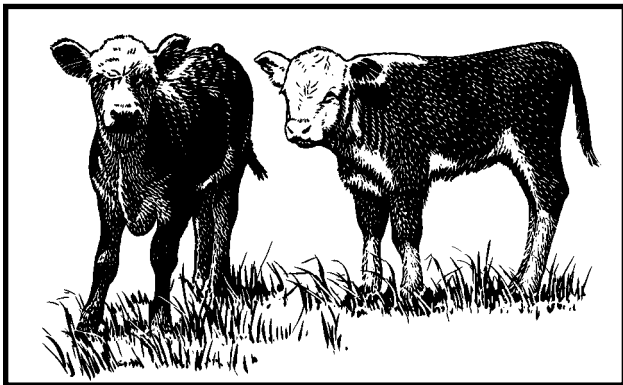
Figure 1. Basic beef calf health program.



Weaning Management and Nutrition For Home-Reared Weaned Calves

Penning calves with their dams in a weaning pasture for a few days and then removing the cows rather than moving the calves to an unfamiliar location helps minimize stress. This introduction to the weaning area also allows the calves to become familiar with water sources and feeding areas they will use after weaning. Avoid dusty conditions in weaning pens to help prevent irritation of the respiratory system that will make the calf more susceptible to shipping fever pneumonia infections.

When retaining ownership of your own calves, or “pre-conditioning” calves before selling, you can use several feeding strategies to reduce weaning stress. The major nutritional challenges freshly weaned calves face include low feed intake (low energy intake) and low water consumption. Creep-feeding calves for 3 to 4 weeks before weaning improves their body condition at weaning and even more importantly, enables them to quickly get on feed while in the weaning pen. During the weaning period, offer the best quality hay available free-choice and use a high-quality concentrate feed. Calves may be slow to start on feed but should be worked up to 4 to 5 pounds of concentrate feed per day for the duration of this period. Placing feed bunks against the fence at a right angle helps calves discover the feed earlier. Surveys of Mississippi calves indicate a high level of infection with coccidia (a one-celled intestinal parasite that can produce bloody scours). Weaning rations should contain an effective coccidiostat to prevent this disease (coccidiosis), which is likely to occur during stress periods such as weaning.



Receiving and Health Management Program for Purchased Calves

A **planned** receiving program is the most important part of an overall health plan for purchased calves. Effective **planned** programs help improve performance, cut death losses and treatment costs, and reduce time spent caring for sick cattle.

A basic receiving health program for purchased calves is not as easy to formulate as a program for home-reared calves. The prior health history of the calf or the herd it origi-

inates from is generally unknown as is the relative level of stress it encountered in marketing channels. Excessive time in transport, lack of weaning, inadequate water and feed intake, and exposure to diseases influence a calf's potential of developing sickness at the receiving farm. Generalizations relative to these factors, oftentimes assuming the worst, enter into the design of basic receiving health programs for purchased calves.

Planning ahead for receiving calves includes the following guidelines:

- Work with your veterinarian to devise a comprehensive receiving health program.
- Review Beef Quality Assurance (MS-BQA) guidelines for proper administration of vaccines and medications selected for use in the receiving health program and for treatment of sick animals.
- Have the cattle-working facilities and holding pens/pastures ready to handle calves.
- Establish properly equipped sick pens.
- Provide adequate feed-bunk space for calves (minimum of 12 linear inches per head; 18 inches is probably better).
- Have adequate hay racks.
- Have good-quality hay stored.
- Have a good water source; calves need 1 gallon of water per 100 pounds daily (summer increases water consumption). Provide 1 linear foot of water trough per 10 head.
- Enlist a nutritionist to formulate rations and have fresh feed on hand before receiving calves.
- Ready ear tags or other identification for calves.
- Set up a record system for documenting source of calves, receiving procedures and recording treatment(s), and treatment response of sick calves.

When the calves arrive, give them fresh water, high-quality hay, and sufficient room in a large holding pen or small pasture to spread out and rest for 12 to 18 hours before processing. A basic receiving health program is outlined in Figure 2.

Individually handle and evaluate calves during the initial processing. Obviously sick or injured animals should be treated and quietly moved to a sick pen for continuing observation. Body temperature is one criterion that may be used to determine which calves are already sick upon arrival and should receive antibiotic and supportive care initially. Hot weather and stressful handling of calves may produce an elevated temperature in well calves.

Upon initial processing, give all calves the vaccines and parasite treatments listed in Figure 2. These vaccines require a booster vaccination in 2 to 3 weeks. The deferral of dehorning and castration to the revaccination date is less stressful on the calves. If a banding technique is used to castrate bull calves, it is advisable to administer a tetanus tox-

Figure 2. Receiving calf health program.

| Point of origin | Receiving pens | 2 to 4 weeks after arrival |
|-----------------|--|-----------------------------|
| | Metaphylactic Antibiotic* | |
| | ID and records | |
| | IBR,PI ₃ , *(IN) | |
| | MLV-killed vaccine (IBR, PI ₃ , BVD, BRSV) | 2 nd MVL-vaccine |
| | Pasteurella* | Pasteurella* |
| | Clostridial—5-way or 7-way | Clostridial |
| | Tetanus Toxoid** | |
| | Treat for internal and external parasites (products should control lungworm) | Dehorn* |
| | | Castrate* |
| | High quality, palatable feed and hay (the feed should contain coccidiostat) | Implant |

Remember. Always follow Beef Quality Assurance (MS-BQA) guidelines.

*Decision should be made by your veterinarian when you plan your health program.
 **If you use banding techniques for castration or if there is a history of livestock deaths because of tetanus on the farm.

oid vaccine at initial processing and a booster of the same at the time of banding 2 to 3 weeks later. Banded bull calves are susceptible to developing tetanus, which is usually fatal in this age calf.

The decision to include a metaphylactic (preventative) administration of an antibiotic to all calves (“mass medication”) may be based on perceived levels of stress on the calves before receipt, amount of shrink, weaning status, time in transport, and rumen fill. The timing of mass medication is critical to its effectiveness. The antibiotics with label approval for metaphylactic use are prescription drugs that require a valid veterinarian-client-patient relationship (VCPR). Consult with a veterinarian who is familiar with the cattle you are receiving. Use your experiences with purchased cattle to assist you in deciding when or if you need to administer antibiotics to all cattle received.

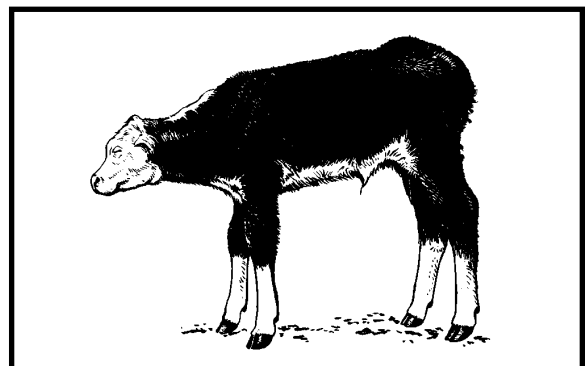
Recognizing and Handling Sick Calves

Give calves space to spread out as much and as soon as is feasible. Small grazing areas fenced next to working pens are excellent for this purpose. Establish sick pens to receive incoming, obviously sick calves, or calves that begin to show evidence of sickness after arrival. The sick pen should provide some separation from healthy calves, and do not let them share water or feed troughs. Gently handle sick calves; walk them slowly to the sick pen. Do not run sick calves.

When you see a calf with drooped ears, one that does not stretch when it gets up, breathes hard, has a wet-sounding cough, or exhibits an obvious lack of rumen fill

(“slab-sided,” hollow in the left side), then this calf should be worked to the chute as quietly as possible for examination that should include determining and recording its body temperature. Start the calf immediately on antibiotics as prescribed by your veterinarian. Use injection sites, routes of administration, and volume of product that adhere to Beef Quality Assurance (MS-BQA) guidelines for the respective product used. Maintenance of processing and treatment records is an important part of the MS-BQA program. Widespread adoption of MS-BQA guidelines by beef producers should enhance consumer confidence in beef and in food products made with beef.

Close observation that facilitates early treatment is the secret to reducing death losses and /or keeping calves from becoming chronically ill (“chronics”). Do not use corticosteroids on sick calves because such products tend to produce chronic cases that usually remain stunted or are poor doers.





Nutrition of Purchased Calves

Keeping the newly weaned and/or purchased calf eating and drinking is the most important factor in preventing disease problems in these calves. The concentrate feed offered to freshly weaned or purchased calves should be of high quality. The fiber level of the concentrate feed should be at least 20 percent, overall ration protein at least 12 percent; buy feed that contains 62 to 65 percent TDN (energy). This means that if the hay has 8 to 10 percent protein, feed a 14- to 16-percent protein concentrate. If hay has greater than 10 percent protein, then a 12- to 14-percent protein grain mix is adequate. Use only all-natural-protein feeds during the weaning or receiving period. Use of high-bypass-protein feeds such as distillers grains has shown positive results in some research trials.

Mineral levels are important during these stress periods. The concentrate mixture should contain at least 0.6 percent calcium and 0.4 percent phosphorus. Increasing ration potassium content to 1.5 percent may also be beneficial. In addition, it is good to offer to calves at all times a free-choice mineral mixture containing trace-mineralized salt and at least 8 percent phosphorus and 15 to 20 percent calcium.

Vitamin requirements increase during stress. Give calves vitamin A injections or provide 10,000 I.U. per pound in the grain ration. Providing the B-vitamins niacin (at 1 gram/head/day) and thiamine (at 100 ppm) shows positive results in research with stressed calves.

Keep the grain ration as dust-free as possible. Stressed calves often have respiratory problems, and dusty feeds aggravate this condition. Inclusion of antibiotics in the feed, at the direction of your veterinarian, may be used once

calves are eating regularly. Receiving rations should contain an effective coccidiostat to help prevent coccidiosis. Offering feed in small amounts several times a day helps avoid off-feed problems and allows you to observe the cattle better.

Feeding and Health

High morbidity (sickness) and mortality (death) are major problems during weaning and receiving periods. A **well-planned** health and nutrition program can do much to reduce these problems. Provide quality feeds during a weaning or 2- to 3-week receiving periods. Unbalanced and unpalatable feeds increase health problems and generally get cattle off to a bad start.

Offer feed to the calves before letting them have access to water. If they fill up on water first, they will not take to the ration well.

After calves come off the truck, they should have immediate access to quality hay and concentrate ration. Sprinkle hay the length of the feed bunk and then put the ration on top. Satisfactory results, however, have been obtained by putting hay along the feed bunk with rations at the other end. Use hay as a management tool. With timid eaters, sometimes it is necessary to sprinkle hay on the ground. While this generally entices even the most reluctant cattle to start eating, it can be a critical factor in increasing the spread of diseases and parasites. Use this method of hay feeding as a last resort.

Water Sources

Use watering systems that are noisy to attract calves to water. You can make a simple, effective water system by drilling holes the length of a 3/4-inch pipe, which is then hooked up to the water supply above the tank. This system attracts calves to water faster than if they were left on their own devices. The best location for a watering system is along the fence line where calves tend to walk when they arrive at holding facilities. Keep your watering tanks clean and filled with fresh water to prevent mold buildup. Electrolytes in the water for a few days after arrival may help correct and prevent dehydration.

You can see that health management decisions are related to cattle diseases prevalent in your area, condition of calves received, and other variables. Depend on your veterinarian for assistance in planning your health program.

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