

Stocker Cattle Management: Receiving Health Program

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The objective of a stocker operation is to put additional gain on weaned calves prior to entering the feedlot. Initially, stocker cattle can be costly and labor intensive. The cost per pound of gain, according to University of Arkansas research, ranged from \$0.32 to \$0.88. Labor and animal health are the major expenditures. The wide variation in cost can be attributed to weather conditions, availability of feedstuffs and the level of illness in each group of cattle.

Many animal health products on the market are beneficial in a stocker operation. While the cost of these products will be a primary consideration for their use, it should not be the **only** determining factor. Products chosen should be cost-effective and provide a successful outcome. Cutting corners may appear to be economical initially, but will cost in terms of reduced performance and feed efficiency.

Sources of Stocker Cattle

There are two main sources of stocker cattle. The majority of cattle are obtained through the livestock marketing system or sale barns. These cattle come from a wide variety of sources, are anywhere from 6 to 12 months of age and are usually purchased over a number of days prior to shipment. Their health history is most often unknown. Plan to spend a lot of time with these animals for the first two weeks after arrival. These animals have already been exposed to respiratory pathogens, and it is just a matter of time before they begin to show

clinical signs of bovine respiratory disease or “shipping fever.”

Cattle that are purchased directly from a ranch tend to be more uniform in weight and age. A history of their vaccinations and health treatments may be available. These cattle may have been vaccinated before weaning and boosted again at weaning. Experience has shown that these animals usually have fewer problems with bovine respiratory disease and will not require as much labor and treatment. If, however, they have not been vaccinated prior to shipment, they may seem fine for the first two weeks, then begin to show clinical signs of respiratory disease. Purchasing pre-vaccinated cattle may cost more up front, but the savings in treatments, labor and efficient production should make up for the difference in price.

Process Within 12 to 24 Hours

If animals have traveled a great distance and arrive late in the afternoon, it would be better to let them settle down and relax before processing. Additional stress at this time will reduce the effectiveness of the animal health products that are used.

Place the calves in a dry holding area with adequate space. Provide them with good quality, palatable hay and clean water. To help the calves find the water tank, let the water run over, providing noise. This will attract the animals to the tank.

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It is not advisable to wait beyond 24 hours for processing. This will hasten the development of bovine respiratory disease and reduce the effectiveness of a processing program.

Record Keeping – Vaccination Plan

Record keeping is a very important part of any livestock operation. Develop a processing plan and record what is done to each animal. The names of the vaccines and dewormers used should be recorded, as well as the serial number and expiration date of the product. If there is a reaction or perceived problem with any product, it will be necessary to provide this information to the company.

Record the location of each vaccination and how it was administered. It is important to administer each vaccination at the same location site. If a problem at the vaccination site develops, you will know which product was administered. Develop a standard health record form for your operation and use it for each group of cattle that is processed.

Proper identification of animals is an important part of record keeping. The industry is moving towards source verification, which means permanent identification will be required (such as a radio frequency identification tag). Until then, ear tags will suffice.

Proper Technique

Beef quality assurance (BQA) guidelines help producers insure the product they produce is safe and wholesome. Proper vaccine handling and vaccination technique is a very important aspect of BQA. It is very important that injections are given in front of the shoulder and **never** in the areas that produce the more valuable cuts of meat (loin, rump, butt, etc.). Research has shown that certain vaccines will leave unsightly scars in the meat that persist until slaughter. In addition, the meat will be tougher in these areas, resulting in an unsatisfactory eating experience for the consumer.

All vaccines should be handled according to the label directions. This includes storing them at the correct temperature, keeping them away from direct sunlight and never mixing two different products. Never go back into a bottle of vaccine with a used needle, but rather use multi-dose syringes and filling needles. Modified-live vaccines **must** be used within a few hours after mixing. Never save modified-live vaccines for another day. Killed vaccines that have been opened can be used on another day as long as they are stored properly.

The proper needle size is determined by the route of administration. For intramuscular

vaccinations, use an 18-gauge, 1 1/2-inch needle, and for subcutaneous vaccinations use a 16- or 18-gauge, 1/2- to 5/8-inch needle. Intramuscular vaccinations are given at a right angle to the animal. Subcutaneous vaccinations are given using a tented technique. The skin is pulled away from the animal with one hand, and the vaccination is placed under the skin. Change the needle every 10 animals or when it appears to be dull. Never straighten or reuse a bent needle because they are more likely to break. Always dispose of used needles properly.

Multi-dose syringes are a good choice for processing large numbers of animals. Remember, these syringes are being used to administer an animal health product. They should be dismantled and cleaned after each use. Keep all of the parts together for the same syringe (they are “married” to each other and tend not to work very well in other syringes). Replacing worn gaskets and lubricating the plunger will keep the syringe working smoothly. When it comes to purchasing a multi-dose syringe, remember you get what you pay for. Therefore, the cheapest is not usually your best option.

Syringes used with modified-live vaccine should **not** be cleaned with disinfectant or soap. Residual detergent may inactivate any future modified-live vaccine used. Label a syringe for modified-live vaccine use to avoid any confusion.

Cleanliness, attention to detail and technique, and **always following label directions** will result in a successful processing experience.

Animal Handling

The stress of handling animals in poor working facilities will result in increased animal sickness and injury as well as dangerous conditions for people working with them. Some of the stresses imposed on these animals in our current production systems are unavoidable.

The phrase “less is more” is very appropriate when handling cattle. Cattle are herd animals by nature and don’t like to be alone. Therefore, handle them in small groups. They do not like to walk into darkened areas and will not move very well around 90° corners. The working alley should be designed so that each animal can see another animal ahead of it.

Cattle do not like to move forward when there are distractions. Distractions may include items hanging on the side of the chute, clothing blowing in the breeze, chains dangling and clanging off the side and people directly in front of them. It is a good idea to have a working alley with solid sides that do not allow the animal to see over the side. The alley should be wide enough for one animal to pass through, but not turn around.

Cattle respond well to people who work them quietly. Hot shots may be needed for the occasional stubborn animal but should not be routinely used on every calf. It isn't necessary to have a hydraulic restraining chute; however, the chute should provide adequate restraint while preventing injury to the animal or handler.

Vaccination

Vaccines on the market are of high quality, and the companies will usually stand behind their products. The number one reason for vaccine failure is not following the directions on the label or insert section. Purchase all vaccine from a reputable distributor. If you purchase vaccine through the mail, make sure to have it sent by overnight delivery. Each herd and production situation is unique and may require different vaccinations. Your veterinarian is your best source of information for the health protection required by your herd.

There are general guidelines for processing stocker calves. Unless you know the vaccination history of the calves you purchase, it is best to assume that the calves have not received any vaccinations.

At the stocker research facility at the Savoy farm, a modified-live viral vaccine that contains Infectious Bovine Rhinotracheitis Virus (IBR), Bovine Viral Diarrhea Virus – types 1 and 2 (BVD), Parainfluenza₃ Virus (PI₃) and Bovine Respiratory Syncycial Virus (BRSV) is used. Even though this is a modified-live vaccine where one dose is recommended, cattle are boosted at 2 to 4 weeks to protect the animals that did not respond to vaccination the first time.

Weaned calves at high risk for bovine respiratory disease will need protection quickly, and killed vaccines will not work as quickly as modified-live vaccines. There are also several intranasal IBR-PI₃ vaccines on the market. These are useful for fairly rapid protection, and are administered through the nasal cavity where the respiratory pathogens start their journey to the lungs. This protection is short-lived, however, and should be accompanied by an injectable 4-way respiratory vaccine.

A 7- or 8-way clostridial vaccine ("blackleg") is also recommended. These vaccines are killed vaccines and may require one or two doses; therefore, read the directions carefully. All animals are susceptible to clostridial diseases. The organisms are present in the soil and in the intestinal tract of the animal. Given the right conditions, the disease will be triggered. While these conditions do not occur on a regular basis, they usually affect the largest and most productive animals in the group. Calculate what a dead 600-pound steer is worth versus a \$0.10 to \$0.15

vaccine. If calves are kept for longer than 90 days, a second blackleg shot is recommended.

Bacterial respiratory vaccines are available that protect against infection with *Pasteurella* and *Haemophilus*. Both veterinarians and producers will vary on their opinions as to whether these vaccines are effective. If you choose to use one of these vaccines, make sure that the vaccine includes leukotoxin or indicates that it is a leukotoxoid. This information should be on the label. Leukotoxin is produced by *Pasteurella* and is responsible for lung damage. A vaccine with leukotoxin should result in protection against this damaging toxin.

Regardless of which vaccines you use, there are some realities that go along with vaccination.

1. There are no vaccines that will give you 100 percent protection against disease.
2. The most common reason for vaccine failure is not following the directions on the label.
3. Approximately 30 to 40 percent of calves vaccinated for bovine respiratory disease will not respond to vaccination due to stress, illness or a naturally inferior immune system.
4. Can we vaccinate if the cattle are showing clinical disease? Yes and no. Once an animal has begun to show signs of disease, it is not likely that a vaccine will stop the disease process. It might, however, help the animal's immune system combat the disease. On the other hand, the stress of disease may prevent the animal from properly responding to the vaccine.
5. Most vaccines will elicit a mild reaction in the animal (depression, slight fever, etc.). Some producers refer to this as the "sweats." This is normal and should last from 12 to 36 hours post-treatment and will not affect overall production. Vaccine companies have been working on new products that minimize any reactions.
6. In keeping with the Beef Quality Assurance directives, try to select 2 cc products that are administered subcutaneously whenever possible.

Banding Vs. Cutting

It is not unusual to find 60 percent of the male calves that arrive at the sale barns have not been castrated. The least stressful time to castrate a bull calf is during the first week of life, but that may not be the most practical time. Nevertheless, all bull calves should be castrated.

Both banding and cutting techniques work well, and selection is based upon the preference of the producer. Cutting works better with smaller calves.

It is important to make sure that the cutting instrument is cleaned with a disinfectant between animals. When cutting larger calves, the cord to the testicles should be crimped to avoid excessive bleeding.

There are several banding products on the market for larger calves. When properly done, the scrotum dries up and falls off within one to two weeks, there is very little bleeding and fly problems are reduced. If the band slips or is not tight enough around the scrotum, it will become putrid and eventually slough off. Learning proper placement is easy and with a bit of practice should not be a problem. It is very important to administer a tetanus vaccination at least two weeks prior to banding and then a booster at banding.

Tipping Horns

Dehorning can be very stressful, so it is advisable to use a polled bull. A cauterizing paste or debudding device can be used when the calf is a week old. The horns can be scooped out at the base with relatively little problem prior to 4 months of age. After 4 months of age, an open sinus will be exposed when the horn is removed. This takes a long time to heal and can lead to infection and fly strike. Feedlots are satisfied with animals that have had the tips of their horns removed. This seems to be the least traumatic way to “dehorn” an older animal.

At the University of Arkansas stocker facility, castrating, branding and dehorning are done when the vaccinations are boosted (2 to 4 weeks), not during the initial processing. This helps to spread out some of the stressful events for the calf.

Dewormers

Random fecal evaluations of the calves received at the U of A indicated that all calves are carrying a parasite load. This ranges from slight numbers of parasite eggs to a heavy infestation. The use of an effective dewormer should be an essential part of the processing program.

At the University of Arkansas facility, a pour-on is used that is labeled for most of the internal parasites as well as the external parasites such as lice and ticks. Pour-on types are preferred because that is one less product that is injected into the animal.

If the calves are coming from the southeastern United States (Florida, Mississippi, Alabama), liver flukes are a concern. Ivomec-F® is approved for the treatment of liver flukes. It is an injectable product and will also cover the internal and external parasites.

Random fecal evaluations have also indicated that all of the arriving cattle have a coccidia load.

Not many have bloody diarrhea, but they do have evidence of coccidia in the feces. Therefore, a coccidiostat should be included in the feed. If the animals will be on pasture with no supplement, consider a trace-mineral block with a coccidiostat. The coccidiostat can also be included in the receiving ration.

Depending upon the time of the year and the source of the cattle, there will be a certain amount of illness. The first two weeks after arrival are the most labor intensive in terms of recognizing and treating sick animals. The earlier disease is recognized and treated, the smaller the number of chronic animals you will have.

Cattle should be checked first thing in the morning (daily – especially in the hot summer months). If a receiving ration is fed, take time to observe all the cattle. Cattle that are not eating or lagging behind the rest should be watched closely. Sometimes animals will stay back from the feed trough because they are shy, or perhaps there are several aggressive animals in the group that are keeping them away. In this case, common sense and other criteria for evaluating sickness should be utilized.

Treating Respiratory Disease

Develop a plan for treating sick animals before they get sick. It is important to get your veterinarian involved before the cattle arrive. This involves setting criteria for which animals will be treated for illness, what animal health products will be used, for how long and how many products will be tried before the animal is considered a “chronic.”

At the U of A, the criteria used for treatment are a rectal body temperature of 104° Fahrenheit or greater, depression, loss of appetite, discharge from the eyes and nose, difficult breathing and coughing. Many animals will not show all of these symptoms.

Learning to recognize sick animals is an art. When animals are pulled sick, one antibiotic is tried initially for the prescribed dose and time. The animal is rechecked in 24 to 48 hours. If the antibiotic does not appear to be working, another is used. After a third treatment, the animal is on its own. If these animals die, there will be so much lung damage that the animal had no chance of recovering.

Each animal has a medical record that includes its identification number. This is **very** important for several reasons. It may reveal the development of antibiotic resistance and should document withdrawal time to prevent antibiotic residues in the meat. Records will also help keep track of medication expenses. Consult with your veterinarian about which antibiotics will work best.

Treating Enteric (Intestinal) Diseases

Stocker cattle may experience some enteric problems. This is usually evidenced by a change in the character of the stools, from slightly loose to watery. There are many reasons why an animal will develop diarrhea. It is important to characterize the consistency and the color of the feces when deciding how to treat the problem.

Infection with coccidia is a common cause of bloody diarrhea. These animals will have watery, bloody diarrhea. It is important to note that almost all stocker cattle will have some level of coccidia infection but may not be showing any signs of the disease. The stress of shipping, dietary changes, processing and mingling with new animals may be enough to bring on clinical coccidiosis (bloody diarrhea). A coccidiostat should be incorporated into the receiving ration. It may be necessary to treat individual animals that are showing severe signs. Sulfa drugs (oral drench or injectable) are effective for treating coccidiosis. Consult with your veterinarian for recommendations.

Heavy roundworm infestation may also result in diarrhea. The diarrhea can be slightly loose to watery and is usually normal color. This condition is handled easily during processing by using an effective deworming agent. It may be necessary, however, to repeat the treatment depending on the directions of the dewormer.

Abrupt changes in feed such as introducing too much grain too quickly or putting cattle out on lush pasture may cause loose stools. The stools can be very loose and normal in color. Diarrhea from lush grass is usually loose and very green. It is important to gradually introduce cattle to concentrates and supplements. There also can be problems with bloat. If bloat occurs, reduce the level of feed and offer hay. Gradually increase the concentrates after the diarrhea has stopped.

Cattle can also have diarrhea with a *Salmonella* infection. The diarrhea is usually a yellow to tan color and smells very bad. There may be bits of mucus and blood in the stool. These animals are

usually depressed and may or may not have a fever. The only way to confidently diagnose *Salmonella* is through a bacterial culture. A test to determine antibiotic sensitivity should also be run to determine which antibiotic to use. This is not very common in stocker cattle, but can occur and should be dealt with carefully, as certain strains of *Salmonella* can cause problems in humans.

Calves with diarrhea should have access to clean water. Animals lose a lot of water with diarrhea, and electrolyte imbalances develop. It may be necessary to supplement with electrolytes in severe cases. Therefore, much of the illness and depression is due to loss of electrolytes and not the offending organism.

“Hospital” Area

The purpose of a “hospital” area is not to prevent the spread of disease. After a group of stocker cattle have mingled for a few days, they have shared all of the “bugs” that they brought with them. Separating sick animals will give them a chance to recover without having to compete with healthy animals.

It is convenient to locate this area close to the processing chute. This makes it easier to check the animals daily and bring them in for additional treatments. There should be a pen for new treatments (“pulls”) and one for relapses (animals that have been treated more than once). These animals should have access to fresh, clean water and good quality hay. After temperatures have returned to normal and clinical signs are no longer observable, return them as quickly as possible to the “home” pen or pasture.

Summary

Disease outbreaks can be very devastating to any stocker operation. Knowing the source of the purchased calves, having good working facilities and having a well planned processing scheme and treatment regimen will help reduce losses due to diseases. Working with your local veterinarian will help develop the health program that is right for your operation.

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