



## Proper Care and Management of Common Health Concerns with 4-H Steers and Heifers

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### Abstract

The 4-H livestock program is designed for youth interested in raising livestock. It teaches them how to be leaders, builds self-esteem, citizenship and social and livestock skills. The program allows youth from all backgrounds the opportunity to raise and care for an animal. It is not uncommon for participants in the program to be the first in the family to raise livestock. This does, however, present some challenges. Recognizing and understanding animal behavior and signs of illness will help the 4-H program participants and their parents become better animal caretakers when problems arise.

The purpose of this fact sheet is to give youth and their parents a basic guide of what signs and symptoms to watch for to prevent illness or death. It includes instructions on how to take vitals, how to assist the veterinarian when called, the

compiling of materials for a first aid kit, proper antibiotic administration, vaccinations, and preventive practices that the youth can implement while caring for their animal.

### Contact Information

#### Primary Veterinarian Information

It is extremely important that anyone with any type of animal has both the contact and emergency contact information for their local veterinarian. It is also a good idea to have the information for more than one veterinarian in case they are not able to reach the first contact. It is recommended that you have the information written down and located with your first aid kit. We recommend using the [Cattle First Aid and Basic Care flip book](#) to keep track of your contacts and your list of first aid supplies.

#### Emergency Contact

Another important piece of information to keep on hand is contact information for one or two people from the community that know about cattle and can give you advice or assistance when issues arise. This is also valuable when you have to leave town and have someone else watching over your animal. It gives them a great contact if something were to happen.



## First Aid on Hand

For cleaning the wound	For dressing the wound	Bandage materials	Equipment	Additional equipment	Other
Disposable latex gloves	Hoof dressing	Adhesive tape	Safety scissors	Pocket knife	Isopropyl (rubbing) alcohol
Antiseptic scrub	Nonsteroidal eye ointment	Duct tape	Scissors	Flash light	Lubricant for the thermometer
Water/ hose	Udder ointment	Gauze dressing pads	Tweezers	Wire cutters	
Halter	Wound ointment/spray	Roll gauze	Oral Syringe	Halter	
	Epsom salt	Vet wrap	Rectal thermometer		
			Disposable razor		

## How to Check Your Steer or Heifer's Vitals

It is important for youth and their parents to have a basic guide of what signs and symptoms to watch for to prevent illness or death. When they know how to take vitals, they will be able to assist the veterinarian when called.

### Checking Vitals

#### Temperature (degrees in F)

Adult- 100-102.5°F; Newborn- 101-103°F

How to take the temperature-

- Put animal in a chute/restraint (stanchion etc.) where you can guarantee that the animal will not be able to kick you.
- Lubricate the end of the thermometer.
- Lift the tail and gently insert the thermometer into the animal's rectum. Make sure the tip of the thermometer rests against the rectal wall (i.e., make sure it is not inserted into dung).
- Hold the end of the thermometer to keep it from disappearing up the rectum.
- Electronic thermometers will "beep" when an accurate reading is obtained

#### Pulse Rate (beats per minute)

Adult- 40 to 80; Newborn- 80-100 (beats per minute)

How and where to take pulse-

1. Locate an artery (the external Maxillary Artery crosses the lower edge of the jaw) and apply gentle pressure against it with your fingers.
2. Count the number of pulses for 1 full minute, for 30 seconds and multiply the number by two or for 15 seconds and multiply by 4.

#### Respiration (breaths per minute)

Adults- 20-40

- Watch flank of animal for inhale and exhale.
- Determine if your animal's respiration is normal or abnormal.
- Respiration can be increased by recent exercise, excitement, stress, hot weather or stuffy buildings.
- Respiration can be accelerated if the animal is in pain or has a fever.

### Antibiotic Introduction

(DeVuyst & DeVuyst, 2017)

The introduction and use of antimicrobials in animals has brought major benefits to both animals and humans. Some of these benefits are:

1. Reduction of animal pain and suffering due to reduction in illness symptoms.
2. Protection of livelihood and animal resources.
3. Assurance of continuous production of foods of animal origin.

4. Prevention or minimizing shedding of zoonotic bacteria into the environment and the food chain.
5. Containment of potentially large-scale epidemics that could result in severe loss of animal and human lives.

## **Withdrawal** (Apley, 2013)

Although the benefits are numerous, it is also essential that individuals administering antibiotics be aware of proper administration and withdrawal periods associated with antibiotic use. All antibiotics will have a “withdrawal period” on the label. Be sure to refer to that before administering the drug. A withdrawal period is the time necessary for an animal to metabolize the drug administered to a safe, acceptable level. All antibiotics are labeled with instructions on withdrawal time, dosage, and method of injection. If followed, the risk of antibiotic residues is greatly reduced. The FDA’s Center for Veterinary Medicine (CVM) sets slaughter withdrawal times for approved food animal drugs. This will be located on every bottle of vaccination and antibiotic. Be sure to read and follow all labels before use.

## **Vaccination Programs**

### **Overview** (Rodning, et al., 2012)

The management of disease in beef cattle is typically conducted via some type of vaccination program. Vaccinations should be given at multiple time points in an animal’s life to decrease the probability of infection later in the production process. For example, animals should be vaccinated prior to weaning as this is a stressful time in their lives and can suppress the immune system. Furthermore, animals remaining in the herd should be vaccinated annually, and animals transitioning to a new phase or environment of the beef production system should be vaccinated to prevent becoming infected themselves or infecting new animals that they might be exposed to. Although there are multiple vaccinations available on the market to prevent disease, it is always a good idea to consult a veterinarian for the best type of vaccine for your herd/area and how to properly administer the vaccine so that the vaccine is most effective at preventing disease.

## **7-Way**

The most commonly used clostridial vaccination in cattle is the 7-way type which protects against *Clostridium chauveoi* (blackleg), *Clostridium septicum* and *Clostridium sordelli* (malignant edema), *Clostridium novyi* (black disease), and three types of *Clostridium perfringens* (enterotoxemia).

Terms such as 4-way, 5-way, 7-way, or 8-way do not refer to any particular type of vaccine, but rather to the number of different subtypes of a microorganism in a vaccine.

## **Preventative Measures**

### **Fly control/Deworming** (Boxler 2016)

There are many insecticide control methods available to manage horn fly numbers: backrubbers, dust bags, insecticidal ear tags and strips, pour-ons, oral larvicides, low pressure sprayers, mist blower sprayers, and the Vet Gun.

Backrubbers and dust bags are an effective way to reduce horn fly numbers if cattle are forced to use them.

Insecticide ear tags and strips are a convenient method of horn fly control. The recommended management practice to maintain horn fly control is to rotate insecticide classes.

Animal sprays and pour-on products will provide 7-21 days of control and will need to be re-applied throughout the fly season.

Oral larvicides prevent fly larvae from developing into adults. An important factor when using an oral larvicide is insuring steady consumption. An additional complicating issue using an oral larvicide is horn fly migration from neighboring untreated herds which can mask the effectiveness of an oral larvicide.

The Vet Gun applies an individual capsule of insecticide to an animal and can provide control between 21 and 35 days.

Horn flies occur mostly on the cow and usually only by incident on the calves. Not treating mama cows can lead to a 12% decrease in the average daily growth rate of nursing calves. The growth rate of yearling stocker cattle and lactation rates of dairy cows may decrease by about 16%. Metabolic and behavior responses indicate that horn flies increase the amount of energy spent by cattle when defending themselves, leaving less energy available for growth.

# Common Diseases and Disorders in Beef

**Bovine Respiratory Disease** (Jelinski, & Janzen 2016) & (Bagley, 1997)

## Overview

Bovine Respiratory Disease (BRD) is the most common and costly disease affecting the North American beef cattle industry. In the broadest sense, BRD refers to any disease of the upper or lower respiratory tracts. BRD is commonly associated with infections of the lungs causing pneumonia in recently weaned and feedlot cattle, nursing beef calves, housed dairy calves, and lactating dairy cows.

## Signs/ symptoms

- fever of over 104°F (40°C)
- difficulty breathing occurring to varying degrees
- nasal discharge
- eye discharges
- varying degrees of depression
- diminished or no appetite (off-feed)
- droopy ears
- open mouthed breathing

## Treatment

When symptoms are detected, contact a veterinarian immediately. The veterinarian will prescribe the necessary antibiotic along with dosage and the number of days to administer to cattle.

Treatment of BRD will be effective and the death loss minimal if the following principles are practiced.

1. Early disease detection so those ill can be treated and separated to a sick pen.
2. Prompt initiation of an effective treatment program and continuation on a daily basis.
3. Continued treatment until 48 hours after signs have abated.
4. Change to an alternate treatment if there is no or poor response after 24–48 hours.
5. Good nursing care including cautious handling of both the ill and exposed cattle.

In those cattle where over 50% of the lung tissue has been damaged prior to initiation of effective treatment, there will be a poor response, many relapses, and a high mortality rate.

**Bloat** (Bailey, 2014)

## Overview

Bloat is simply the buildup of gas in the rumen without a proper method of expulsion. This gas is produced as part of the normal process of digestion and is normally lost by belching (eructation). Bloat occurs when this loss of gas is prevented. There are two sorts of bloat. The least common type is gassy bloat, which occurs when the gullet is obstructed (often by foreign objects such as potatoes) or when the animal can't burp (such as with milk fever or tetanus). The second type of bloat is frothy bloat which happens as the result of a stable foam developing on top of the rumen liquid which blocks the release of the gas. This is by far the most common form of bloat, and unlike gassy bloat, it is highly seasonal with peaks in the spring and autumn. This is because the foam is formed by breakdown products from rapidly growing forages (particularly legumes such as clover and alfalfa). These increase the viscosity (stickiness) of the rumen fluid and prevent the small bubbles of gas formed by rumen fermentation from coming together to form free gas that can be belched off.

## Symptoms

- Distended left abdomen
- No longer grazing
- A reluctance to move
- Appear distressed – vocalise, eyes bulging
- Strain to urinate and defecate
- Rapid breathing – mouth may be open with
- Tongue protruding
- Staggering

## Treatment

When these symptoms occur, try to keep the animal up and moving to pass gas while contacting your veterinarian. Bloat can be very serious. Do not hesitate to call your veterinarian right away. This will ensure the highest chance for survival.

**Scours** (Calf Scours 101)

## Overview

Scours is a term for diarrhea. Another term that may be applied to this disease is “enteritis” which means inflammation of the intestinal tract. Overcrowding is a major contributing factor to calf scours. Overcrowding causes the number of these

infectious agents in the environment to increase dramatically.

### **Symptoms**

The stools may be watery and may be brown, green, yellow, or grey in color. Occasionally, flecks of blood and mucus may be evident in the stools. Rust colored or very bloody stools are often associated with infection with *Salmonella*, coccidia, or *Clostridium perfringens*.

The calves are often isolated, weak and depressed and may lose their desire to nurse.

The calves develop a sunken-eyed appearance as a result of dehydration. The bony prominences of their hips, shoulders, and ribs may become more apparent as the calves dehydrate and burn their body fat supplies.

The calves may stagger or sway as they walk. This often reflects weakness, low blood sugar concentrations, and/or alteration of the acid-base balance of their bodily fluids.

The calves may become too weak to stand. Death typically occurs within a day if treatment is not initiated.

Depending on the cause(s) and the severity of the infection, a case of scours in a calf can last 1-2 days or as long as 2 weeks.

### **Treatment**

When symptoms arise, contact your local veterinarian immediately.

It is important to note that some infectious agents that make calves ill can also make people sick. People working with scouring calves should wash their hands before and after handling calves, their feed, or their bedding. Ideally, people working with these calves should wear waterproof outer boots that can be cleaned with soap and water and disinfected after use. People working with scouring calves should wear coveralls or a dedicated set of working clothes and change these before handling other calves or returning to the ranch office or house. People with immune system disorders, pregnant women, and very old or very young individuals should not come into contact with scouring calves, their bedding, feeding utensils, or the clothing of individuals who have handled these calves. It is important to feed and perform daily chores for the healthy animals before treating the sick calves with scours. Ideally, the person treating the sick calves should not work the healthy calves.

Whenever possible, scouring calves and their dams should be isolated from healthy calves and from pregnant cows.

The highest priority in treating scours is to give back to the calf the water and electrolytes that it has lost in scours. This is called fluid therapy. This corrects dehydration, restores the normal acid-base balance, and replaces salts in the calf's bodily fluids. Consult with your veterinarian to find an appropriate product and a target volume to administer for the average baby calf on your ranch.

### **Pinkeye (Walker, 2007)**

#### **Overview**

Pinkeye (infectious bovine keratoconjunctivitis, or IBK) is a bacterial infection of the eye that causes inflammation and, in severe cases, temporary or permanent blindness.

#### **Symptoms**

The first sign of pinkeye is an animal with a runny eye." One or both eyes may be infected. The cornea then becomes cloudy or bluish and a small whitish spot appears in the center. In the majority of cases, the infection then starts to resolve, leaving little or no permanent damage.

In more severe infections, the spot in the center of the eye continues to enlarge. Over the next one to two weeks the cornea is eroded to form an ulcer that spreads and swells, with most of the eye changing from white to yellow and then to red (as white blood cells and then blood vessels move into the ulcer). Treatment should be given before the disease is this severe.

If ulceration is severe, the cornea may rupture at this point. Once the jelly-like fluid from the center of the eyeball is lost, the sightless eye shrinks back into the eye socket.

#### **Treatment**

Contact your local veterinarian immediately to determine severity and treatment plan.

### **Ringworm (Morter & Callahan)**

#### **Overview**

Infection of the skin and hair of cattle is most frequently due to *Trichophyton verrucosus*, a spore forming fungi. Spores are shed from the lesion by broken hairs or scabs from the lesion. The spores remain alive for years in a dry environment,

and because they do, halters, grooming equipment, or even a barn can remain infective for years.

### Symptoms

- Grey-white areas of skin with an ash like surface
- Usually circular in outline and slightly raised
- Size of lesions very variable and can become very extensive
- In calves most commonly found around eyes, on ears and on back. In adult cattle chest and legs are more common.

### Treatment

Once detected, a veterinarian should be contacted to determine severity and treatment plan.

Many of the treatments appear successful because of spontaneous recovery shortly after treatment has been started. Ringworm is frequently severe in confined cattle during the winter; spontaneous recovery occurs in the spring and summer. Topical treatment, application of the medication directly onto the lesion, is the usual procedure. Medication cannot penetrate the crusts; the crusts should be removed by scraping or brushing. They should be collected and burned to avoid contaminating the premises. Lesions should be treated at least twice, 3 to 5 days apart.

### Conclusion

Raising cattle for market shows is a good way to teach youth about markets, feed and nutrition, compassion and proper care for their animal. It is important that we don't miss the opportunity to teach them about basic health and caring for injuries, as this is a very common and important part of raising and owning cattle. As much as we all would like to avoid illness and

injury, it is not likely. It is important to be prepared to act when problems arise.

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