



## Proper Care and Management of Common Health Concerns with 4-H Goat Projects

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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.

### Primary Veterinarian Information

It is extremely important for anyone with any type of an animal to have 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 youth have the information written down and located in their first aid kit. We recommend using the [Market Goat First Aid and Basic Care flip book](#) to keep track of the contacts and the list of first aid supplies.

### Emergency Contact

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



## Suggested First Aid Kit for Market Goats

### 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	Fortified B Complex
Halter	Wound ointment/spray	Roll gauze	Oral Syringe	Halter	Kaopectate or Pepto
	Epsom salt	Vet wrap	Rectal thermometer	Fly Spray	Electrolites
			Disposable razor	3cc and 12cc Syringes	18g x 1" and 22g x 1" Needles

### How to Check Your Goat'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)

All goats – 101.5-104°F

How to take the temperature:

- Put animal in a/restraint (or tie securely to a fence, etc.) where you can guarantee that the animal will not be able to cause harm to you or move resulting in an injury to them.
- Lubricate the end of the thermometer.
- Lift the tail and gently insert the thermometer into the rectum. Make sure the tip of the thermometer rests against the rectal wall (i.e., make sure it is not inserted into feces).
- Hold the end of the thermometer to stop it from disappearing into the rectum.
- Electronic thermometers will 'beep' when an accurate reading is obtained

##### Pulse Rate (beats per minute)

All goats – 70-80 (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 one full minute (or for 30 seconds and multiply the number by two or for 15 seconds and multiply by 4).

##### Respiration (breaths per minute)

Adults- 12-20, Kids- 20-40

- Watch the 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

#### Prevention of Disease Through Management Vaccination Programs

##### Overview

The management of disease in meat goats 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 production system should be vaccinated to prevent becoming infected themselves or infecting new animals 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 on the best type of vaccine for your herd/area and how to properly administer the vaccine so the vaccine is most effective.

## **Common Diseases and Disorders in Goats**

### **Overview**

Although prevention and management are the best way to decrease the probability of infection in our meat animals, there are still instances where animals become infected. This may be due to exposure to a strain of the disease that was not covered in the vaccine, genetic predisposition or just plain bad luck. As such, the following information is necessary to be able to identify these diseases early and obtain the proper treatment for the animal so the infection does not progress and create a much larger issue.

### **Coccidiosis, coccidian**

**Overview** (Olcott & Dawson, 2007) & (Coffey, 2014).

Coccidia Coccidiosis is a parasite infection caused by the protozoan organism coccidia (also known as cocci or by the scientific name, Eimeria). Some species of Eimeria are non-pathogenic, meaning they do not cause disease. Eimeria are host-specific, which means that an Eimeria species that affects goats will not affect sheep or cattle, and vice versa.

### **Signs and Symptoms**

Coccidiosis includes signs of diarrhea or pasty feces with or without mucus or blood, loss of condition, general frailness, weakness, emaciation, and failure to grow. In peracute cases, kids may die without clinical signs. Chronic coccidiosis is one of the main causes of poor growth in kids.

### **Diagnosis and Treatment**

Eradication is not feasible, but infection can be controlled through good management practices. 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 goat.

### **Urinary calculi**

**Overview** (Olcott & Dawson, 2007).

Calculi result from mineral deposits in the urinary tract resulting in a blockage of the flow of urine. The blockage may rupture the urinary bladder resulting in a condition known as waterbelly and cause death.

### **Signs and Symptoms**

Difficult and painful urination is evidenced by straining, slow urination, stomping of the feet, and kicking at the area of the penis. Blockage of the flow of urine generally is seen only in intact or castrated males. It is common when diets with high concentrations of cereal grains are fed (market goats, pet goats, etc.). Affected animals excrete an alkaline urine that has a high phosphorus content.

### **Diagnosis and 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 goat.

### **Enterotoxemia (Overeating Disease) of Goats**

**Overview** (Olcott & Dawson, 2007).

**Enterotoxemia** is a frequently severe disease in goats of all ages. It is caused by two strains of bacteria called *Clostridium perfringens*. The strains are termed types **C and D**. These bacteria are normally found in low numbers in the gastrointestinal tract of all sheep and goats.

### **Signs and Symptoms**

The animal may abruptly go off of feed and become lethargic. Affected animals may show signs of stomach pain such as kicking at their belly, repeatedly laying down and getting up, lying on their sides, panting, and crying out. Diarrhea may develop. In some cases, there is blood visible in the loose stool. Animals may lose the ability to stand. They may lie on their sides and extend their legs with their head and neck extended back over their withers. This posture is caused by the effects of the toxins on the brain. Death commonly occurs within minutes to hours after this sign is seen. Because enterotoxemia can progress so quickly, animals may be found dead with no previous signs of disease.

### **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 goat.

Treatment of enterotoxemia may not be successful in severe cases. Prevention is far more likely to be successful than trying to treat the disease.

Many veterinarians treat mild cases with analgesics, probiotics (gels or pastes with “good bacteria), oral electrolyte solutions, and antisera, which is a solution of concentrated antibodies that neutralize the toxins that these bacteria produce. More severe cases may require intravenous fluids, antibiotic therapy, and other types of supportive care, such as supplemental oxygen.

**Vaccination** is the cornerstone to prevention. For goats, there are multiple vaccines available that induce immunity to the toxins generated by *Clostridium perfringens* types C and D.

Because tetanus is also an important disease to prevent in goats, many veterinarians recommend that goats be vaccinated with a vaccine that also induces protection against tetanus. These vaccines are often termed “three-way” vaccines, because they induce protection against the three bacteria involved: *Clostridium perfringens* type C (enterotoxemia), type D (enterotoxemia) and *Clostridium tetani* (the bacterium that causes tetanus).

### **Gastrointestinal Parasites**

**Overview** (Olcott & Dawson, 2007).

Many species of nematodes and cestodes cause parasitic gastritis and enteritis in goats. The most important of these are *Haemonchus contortus*, *Teladorsagia (Ostertagia) circumincta*, *Trichostrongylus axei* (stomach worms), intestinal species of *Trichostrongylus*, *Nematodirus* spp (small intestinal worms), *Bunostomum trigonocephalum*, and *Oesophagostomum columbianum* (nodular worms), *Cooperia curticei*, *Strongyloides papillosus* (worms, infection caused by skin penetrating larvae), *Trichuris ovis*, (whipworms) and *Chabertia ovina* (tapeworms).

### **Signs and Symptoms**

Goats may show signs of diarrhea, lethargy, loss of appetite, weight loss, and general poor health.

### **Treatment**

Control, prevention and management of parasites should be done by creating an integrated pest management program. This should be done by working with your local veterinarian and local Extension agent.

### **Orf Virus (Sore Mouth Infection)**

**Overview** (Olcott & Dawson, 2007).

Orf virus is a member of the parapoxvirus genus in the [Poxvirus](#) family. This virus primarily causes an infection in sheep and goats, although it can be transmitted to people. Orf virus infection in animals is commonly referred to as sore mouth, scabby mouth, or contagious ecthyma.

### **Signs and Symptoms**

Animals infected with orf virus typically develop scabby sores (lesions) around their lips, muzzle, and in their mouth.

### **Treatment**

When symptoms are detected, contact a veterinarian. The veterinarian will prescribe the necessary antibiotic along with dosage and the number of days to administer to goat. In mild cases, treatment may not be necessary. Softening ointments may help in more severe cases. It is important to make sure affected animals are eating and drinking. Soft, palatable feeds may help keep intake up. Antibiotics may be required if secondary infections are severe. Commercial vaccines labeled for both goats and sheep are available and have been of value in some instances.

### **Antibiotic Introduction**

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.

## Antibiotic Withdrawal Periods

All antibiotics will have a “withdrawal period” on the label. Be sure to refer to it 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.

## Deworming

Parasites are one of the leading causes of death among goats. A good parasite control program is not simply deworming. It also includes management practices to reduce the number of parasites the animals are exposed to. Grain and hay should be fed in troughs high enough to prevent fecal contamination. The drug class of the dewormer should be rotated yearly and/or as needed to help reduce drug resistance, which is a serious problem for goat producers. Your veterinarian and/or Extension agent can help in this decision. (Whittier et al., 2009).

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