

## **FOOD ANIMAL MEDICINE (VCM 501) LECTURE NOTES ON:**

### **DIARRHEA (SCOURS) IN SMALL RUMINANTS**

Diarrhea is defined as an increased frequency, fluidity, or volume of fecal excretion. The faeces may contain blood or mucous and be smelly. The color of the faeces may be abnormal. However, it is not possible to definitively determine the infectious organism by looking at the color, consistency, or odor of the faeces. A definitive identification requires a sample for microbiological analysis.

In livestock, diarrhea is called scours. There are many causes of diarrhea: bacterial, viral, parasites, and diet.

### **DIARRHEA IN YOUNG (NEONATAL) LAMBS AND KIDS**

The four major infectious causes of diarrhea in lambs and kids during the first month of life are *E. Coli*, rotavirus, *Cryosporidium sp.* and *Salmonella sp.* *E. coli* scours are most common.

#### **Nutritional**

Infectious agents are not the only cause of diarrhea in neonates. Nutritional problems can result in diarrhea. Nutritional diarrhea is most common in orphaned animals as a result of poor quality milk replacers, mixing errors, and overfeeding. Consumption of lush pasture or high-energy diets can also result in diarrhea in young lambs and kids.

#### **Treatment**

Whatever the microbial cause of scours, the most effective treatment for a scouring lamb or kid is rehydration by administering fluids.

### **DIARRHEA IN OLDER LAMBS AND KIDS**

The most common causes of diarrhea in older lambs and kids are coccidiosis and gastrointestinal parasites (worms). Other major causes of diarrhea in older lambs and kids are *clostridium perfringens*, rumen acidosis, and nutritional.

#### **Coccidiosis**

Coccidiosis is a protozoan parasitic disease that is a common cause of diarrhea in lambs and kids. It may also cause subclinical production losses. Lambs and kids are most susceptible to the problem at 1 to 4 months of age, although younger animals may be affected. Lambs are resistant to the disease in their first few weeks of life. Exposure to the protozoa during this time confers immunity and resistance to later infections. Clinical disease is common after the stress of weaning, feed changes, or shipping. The diarrhea of lambs and kids is usually not bloody, but it may contain blood or mucous and be very watery. Treatment of affected animals includes supportive care and administration of coccidiostats. All animals in a group should be treated during an outbreak. Prevention involves improved sanitation and the use of coccidiostats.

### **Gastro-intestinal worms**

Heavy loads of other gastro-intestinal worms can cause diarrhea in sheep and goats: *Ostertagia circumcincta* (medium or brown stomach worm), *Trichostrongylus* (bankrupt or hair worm), *Cooperia sp.* (small intestinal worm), and *Nematodirus sp.* (threadneck worm).

Control of gastro-intestinal parasites is best achieved via good pasture, grazing, and animal management, and strategic and/or selective deworming of affected individuals with effective anthelmintics.

### ***Clostridium perfringens***

*Clostridium perfringens* types A, B, C, and D can all cause diarrhea in lambs and kids, though type D is the most common agent. With type D, the onset of neurologic signs followed by sudden death is more common in sheep, whereas goats are more likely to show signs of diarrhea before death. Treatment is rarely effective but consists of aggressive supportive care and administration of the antitoxin.

*Clostridium perfringens* type C tends to affect very young lambs (<2 weeks of age) and presents itself as bloody diarrhea, hemorrhagic enteritis, and bloody scours. Clostridial diseases are easily prevented in the young by vaccinating pregnant dams about three weeks prior to delivery and subsequent vaccination of offspring. Consumption of adequate, high quality colostrum is important.

### **Rumen Acidosis**

Acidosis is caused by too much grain or concentrate, which causes a change in rumen acidity and bacteria population. The increase in acid causes an inflammation of the rumen wall and a reduction in the bacteria needed to digest fiber. Symptoms may include depression, off feed, bloat, founder, scours, and occasionally death. Treatment includes drenching with mineral oil or antacids. Acidosis is prevented by proper feeding management. Concentrates (grain) should be introduced to the diet slowly and increased incrementally to give time for the rumen to adjust.

### **Nutritional**

Nutritional scours can be caused by anything that disrupts normal habits. It can also be the result of low intake of dry matter to fluid ratio. A lamb needs to consume at least 2.5 percent of its body weight in dry matter daily. Young or fast growing lambs turned out to pasture must eat large quantities of grass to satisfy their nutritional needs. Green grass is high in moisture. They may develop diarrhea if they aren't getting enough dry matter in their diet.

## **DIARRHEA IN ADULT SHEEP AND GOATS**

Adult-onset diarrhea is less common than in lambs and kids, but nevertheless is possible. Parasitism can cause diarrhea in adult sheep and goats. Coccidiosis can occur in adults under extreme stress or due to lack of immunity. The ingestion of toxins, of which the list is long, can also cause diarrhea. It is not uncommon for sheep or goats to scour when they are grazing lush or wet pasture.

## Treatment Strategies

Diarrhea should not be considered an illness in and of itself but rather a symptom of other more serious health problems in sheep and goats. It can be the symptom of many different illnesses, e.g. bloat, acidosis, enterotoxemia, and polio. Diarrhea is not always the result of an infectious disease. It can be induced by stress, poor management, and nutrition.

Before treating an animal for diarrhea, it is essential to determine why the animal is scouring. Take the animal's temperature using a rectal thermometer. If body temperature is above the normal range (102-103°F), fever medications and antibiotics can be used to control the infection.

Many of the common causes of diarrhea are self-limiting, and the major goals of treatment are to keep the animal physiologically intact while the diarrhea runs its course.

A variety of oral antidiarrheal medications have been used in sheep and goats. Pepto-Bismol (Bismuth Subsalicylate, Bismusal) is commonly used to treat livestock with diarrhea. Pepto Bismol contains bismuth which coats, soothes, and relieves the irritated lining of the stomach. Kaopectate (Kaolin-Pectin) can be used to treat non-infectious causes of diarrhea. Treatment with antibiotics is usually not useful when animals are infected with viruses or protozoa. However, antibiotics are useful when bacterial infections are the primary infective agent or where the risk of secondary bacterial infections is high. Sulfa-antibiotics or amprolium should be used in the case of coccidia.

