Coccidiosis

BY: LAURA WOJCIK

Adult nematodes in the digestive tract of sheep lay their eggs.
Eggs passed onto pasture in manure.
Eggs hatch, and larvae develop to infective 3rd stage in soil and manure.
Infected larvae are ingested by grazing sheep.

[Image of a sheep on the left and a diagram on the right.]
Introduction

- Usually an acute invasion and destruction of intestinal mucosa by protozoa of the genera *Eimeria* and *Isospora*
  - *Eimeria* affect sheep
- It is a parasitic disease in the intestinal tract
- The parasite, coccidian, attaches to the epithelia lining in the intestines
- Serious disease in sheep, cattle, goats, pigs, poultry and rabbits
  - In dogs, cats and horses it is less diagnosed but it can cause illness
- Host-specific
Infection

- Most common in lambs 3-6 weeks old that are infected right after birth
- Infection is more common in wet months
- Parasite is transmitted orally and infection can occur from residual contamination of the environment or from parasites being shed by ewes
- Life cycle:
  - Lamb ingests oocysts, and the parasite invades the gut
  - The parasite divides asexually into a hundred or more daughter cells (In 10-14 weeks the daughter cells can multiply over a millionfold)
  - The daughter cells eventually break out of the gut and invade a new area and repeat the process
    - In this stage part of the gut wall have parasites attached that have developed into female and male sex cells
  - The female sex cells are fertilized and secrete oocysts into the gut wall
  - The oocysts are then shed in feces which completes the life cycle
Symptoms

- Diarrhea
- Fever
- Dehydration
- Loss of appetite
- Wool breaking
- Weight loss
- Emaciation
- Sometimes death
- The ileum, cecum, and upper colon are usually most infected and can become thickened and inflammed
  - Sometimes there is a mucosal hemorrhage
- Thick white patches containing large numbers of oocysts may develop in the small intestine
Diagnosis

- Oocysts can be identified in feces by salt or sugar flotation methods
  - Multiple samples may have to be taken
  - Oocysts count of over 20,000 may be a sign of infection (10,000 count have occurred in healthy lambs)
- The number of oocysts found in the sample can vary depending on a number of factors.
  - This include: number of infected oocysts ingested, stage of infection, age and immune status of the animal, prior exposure, consistency of sample, and method of examination
Treatment

- Life cycles of the protozoa are self-limiting and their life ends spontaneously, unless re-infection occurs.
- Timely medication may slow or inhibit the life cycle of the oocysts, which can shorten the length of the infection, alleviate symptoms and can lessen the likelihood of re-infection and death.
- Anti-coccidial (coccidiacidal) drugs like Amprolium and Sulfur (Corid), Chloretracycline, Decoquinate and Sulphadimidine can be administered.
- Infected animals should be moved and treated separately to prevent infection of other animals and make sure they are being treated effectively.
Prevention

- Oocysts can survive up to one year
- Good feeding practices and good management (i.e. sanitation)
- Make sure neonatals receive colostrum
- Young susceptible animals should be kept in clean and dry areas
- Stress should be minimized
- Feeding and watering devices should be kept clean and clear from fecal contamination
- Animals can be fed a ration containing coccidiostats which slow down the shedding of coccidia into the environment
  - Monensin (Rumensin)
  - Iasalocid (Bovatec)
  - Decoquinate (Deccox)
- Oocysts can be killed by heat, direct sunlight and drying
Bibliography

- http://www.sheep101.info/201/parasite.html