

Coccidiosis In Poultry

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What is it? Coccidiosis -- Coccidia, Coxy, or Cocci -- is a disease of poultry caused by a protozoan-type parasite. This parasite lives and multiplies in the intestinal tract and causes tissue damage. This damage can interfere with the food digestion and nutrient absorption, as well as causing dehydration and blood loss. The tissue damage can also expose the bird to bacterial infections, like *Clostridium* and *Salmonella*. Diseases that suppress the bird's immune system may act with coccidiosis to produce a more severe problem. For example, Marek's Disease may interfere with the development of coccidiosis immunity and Infectious Bursal Disease may exacerbate a coccidia infection.

What types affect poultry? Domestic poultry and birds are affected by coccidia called *Eimeria* (scientific name). There are different types or species of *Eimeria* that effect poultry and each are host-specific – meaning that a species that infects chickens does not infect turkeys and vice versa.

Nine species of *Eimeria* infect chickens. The species important in broiler production include *Eimeria tenella* (90%), *E. maxima*, *E. acervulina*, and *E. mivati*; the species important in breeder and egg-layers are *E. burnetti* and *E. necatrix*. Seven species infect turkeys – the big three of concern are *Eimeria meleagridis*, *E. adenoides*, and *E. gallapovonis*.

What are the signs of disease? Clinical signs of coccidiosis can range from none to bloody droppings, watery diarrhea (flushing), weight loss, paleness, sick bird appearance (ruffled feathers, huddling, depression). Affected birds do not eat and will sometimes march from feed pan to feed pan, vocalizing a high pitched cry. Mortality can range from mild to severe, depending on the species of coccidia involved. All ages of poultry are susceptible to infection, but the disease usually resolves itself around 6 – 8 weeks of age. The birds are most sensitive between 3 – 5 weeks of age, when the coccidia oocysts are the most numerous in feces or litter. Many times the disease is subclinical and the flock may only show poor weight gains or feed conversions at the end of grow-out.

What is seen on necropsy? Except for kidney coccidiosis in geese, all lesions are found in the intestines and ceca of poultry. Lesions can be seen in the upper small intestines to the lower large intestines and ceca, depending on the species of coccidia involved. These lesions can include a red or white speckled appearance of the intestinal wall (coccidia colonies), thickened intestinal wall, intestines and ceca may balloon and be filled with fluid, blood, and tissue debris.

How is the disease diagnosed? Final diagnosis of the disease is based on history, clinical signs, necropsy lesions, fecal flotation to look for the presence of coccidia oocysts (eggs), and microscopic examination of the intestines and ceca to look for coccidia organisms in the tissues.

How is the disease transmitted? Birds infected with coccidia may shed oocysts in their feces for days or weeks. Susceptible birds in the same flock ingest the infective or sporulated oocysts in the litter, soil, feed or water and become infected. Infected feces or litter on boots, clothing, equipment, darkling beetles or in dust can then spread the disease to other houses or farms. Outbreaks occur when susceptible birds ingest massive numbers of sporulated oocysts. The best conditions for oocyst sporulation occurs in wet litter with warm temperatures. Oocysts can survive up to 4 years in the environment if conditions are right.

How is the disease prevented or controlled? Coccidiosis is prevented through good sanitation and litter management. Avoid wet litter conditions, especially under drinkers. Coccidia oocysts are very resistant to harsh environmental conditions and common disinfectants, so changing the litter after each brood will reduce the number of oocysts the birds can ingest. Use of anticoccidial medication or vaccines is never a substitute for good management practices.

Anticoccidial medication is commonly added to poultry feed as a preventative measure against the disease. These medications act to either kill or stop development of the parasite. Some medications, like ionophors – Coban, Avatec, allow leakage of oocysts, so the birds can build up an immunity to the parasite. Changing types of anticoccidial medications reduces the chance of the coccidia parasite to become resistant to one type of medication. Remember, just because the anticoccidial medication is in the feed does not mean that the birds are getting it. Empty feed pans, hot weather or another disease problem that will cause the birds to stop eating the medicated feed, does not stop them from picking at the litter and ingesting more coccidia oocysts.

Treatment of coccidiosis is used to control an outbreak. Amprolium, sulfadimethoxine, and sulfaquinoxaline are effective against coccidia as a treatment, however toxicity and withdrawal times need to be a concern when using sulfa-drugs.