Preventing Blackhead Disease in Turkeys and Game Birds

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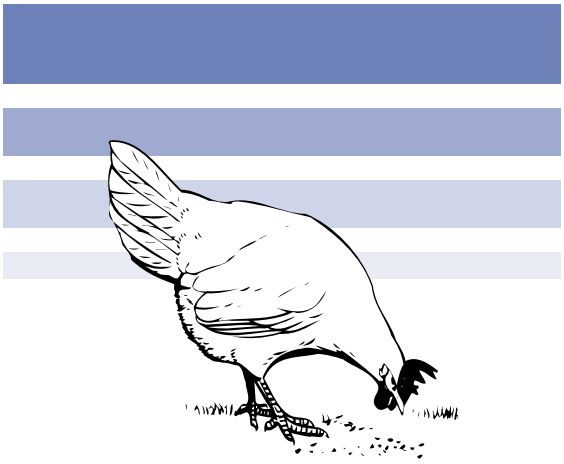

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Many small farms in Kansas raise turkeys for Thanksgiving and other home use. Kansas also is a major producer of game birds used for restocking programs across the state. Kansas State University often receives calls from producers who describe symptoms of their birds that may be related to a disease known as Histomoniasis or Blackhead. Although many of the symptoms described by producers are common to a number of diseases, it is likely that a large number of these flocks are indeed infected with Blackhead. Most flock owners have heard of this disease; however, few understand the cause and development of the illness.

Turkeys seem to be most susceptible to Blackhead. In fact, Blackhead may be the most serious poultry disease confronting the small turkey producer. However, chukkar partridge also are susceptible as well as pheasants, quail and other game birds.

Symptoms of Blackhead

It is not unusual for many producers to note the first observation to be an unusually high degree of mortality. Mortality has been reported to reach up to 70 percent in some flocks. Early signs of this disease may include drowsiness, drooping of the head and wings, walking with an unusual gait, soiled vent feathers due to diarrhea and bright yellow feces resulting from the infection of the liver. The bird also may become anorexic leading to a considerable loss of weight and a depressed, weak appearance. Sometimes, the head of the bird appears to be cyanotic, which is a bluish or black discoloration of the skin due to deficient oxygenation of the blood—hence the name, Blackhead.

The primary lesions of Blackhead develop in the ceca and the liver. These lesions can promote bloody cecal discharges, which are sometimes wrongfully interpreted as a symptom of Coccidiosis.

History and Life-cycle

There is an old saying that many producers may be familiar with, which is that you can't raise turkeys and chickens together. We now know that chickens are carriers of several diseases that can be transmitted to turkeys. Blackhead disease falls under this criterion. A milder form of this same disease often occurs in chickens. Chickens usually do not fall ill from this disease, but if infected, can potentially contaminate facilities. Therefore rearing chickens and turkeys in the same facility should be avoided.

Blackhead is caused by a single celled organism *Histomonas meleagridis*, which damages the cecal wall of the infected bird and has the potential to damage the liver. This organism can find its way to the bird by first being ingested by the common earthworm where it can survive for long periods of time. If infected earthworms are available for flocks of birds to eat, a Blackhead outbreak becomes a possibility. Once a bird internalizes the Blackhead organism, the organism can infect a common parasite of the bird's digestive tract, known as the cecal worm. Cecal worms produce many microscopic eggs that also can be penetrated and infected by the Blackhead organism. Cecal

worm eggs are shed from infected birds in their droppings. It then is possible for healthy birds as well as earthworms to pick up and ingest these eggs, thus, becoming infected themselves and perpetuating the disease cycle. As with many parasite eggs, the cecal worm egg is highly resistant to heat, cold and most disinfectants. As a result of this resistance, a contaminated premise remains contaminated for a long time.

Prevention and control of Blackhead

The causative organisms of Blackhead cannot survive more than minutes without the presence of a host. Therefore, any successful prevention and control of Blackhead must include the elimination of the intermediate host. Because chickens carry many cecal worms, which could be infected, rearing chickens away from production turkeys and game birds is a good preventative measure. Producers should also consider moving facilities to new ground if at all possible.

Growing the birds on wire will eliminate the bird's exposure to earthworms and fecal droppings. In wet weather, earthworms often come to the soil surface in large numbers and are consumed by turkeys and game birds reared on the ground. A 3 to 4 inch layer of crushed limestone covered by dry litter in a ground rearing facility often reduces the prevalence of Blackhead since earthworms usually do not burrow into this type of material. In addition, manure should not be allowed to build up in the facility because of the concern over transmittance from droppings. Reducing the number of cecal worms the birds carry also will reduce risk. Small flock owners should medicate their flock to prevent worms at least annually with an approved medicine.

Once infected, it often is difficult to eliminate Blackhead from a flock. Therefore, prevention is the best strategy. One medication that can be used as a preventative is called Nitarsone, which also is known by the trade name, Histostat-50 (Alpharma, Fort Lee, New Jersey). Histostat-50 is a premix that can be added to the feed and fed to the birds on a continuous basis up to 5 days prior to processing or marketing. Few local feed mills carry Histostat-50 since they are required to purchase a minimum amount of the premix which exceeds the needs of area flock owners and makes the purchase too expensive. However, some feed mills are willing to purchase this additive; checking with a local feed supplier about its availability is always a good idea. Also this additive should be used with extreme caution since it is extremely toxic to waterfowl such as ducks and geese. Currently, Histostat-50 is the only approved medication for use in the treatment of Blackhead. Flock owners must keep in mind, however, that Histostat-50 is a preventative medication and is not effective in treating flocks already showing clinical illness.

Although Blackhead can be a devastating disease causing high mortality in turkeys and game bird flocks, routine prevention strategies can reduce or eliminate its occurrence. For proper diagnoses, a diagnostic clinic should be contacted. Any additional information on the disease can be obtained from your local Research and Extension agency.

References

Diseases of Poultry, 10th edition, B.W.Clark, editor.

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