

Blackhead (Histomoniasis) in Turkeys

Blackhead is the common name for the disease caused by a protozoan (single-celled) parasite called *Histomonas meleagridis*. It is probably more accurately called “Histomoniasis” because the appearance of dark skin around the head (cyanosis), giving the disease its name, is actually a rare clinical sign. The parasite can affect other gallinaceous (chicken-like) birds besides turkeys including chickens, pheasants, partridge, and pea-fowl. But it is the turkey that suffers from the most serious expression of the illness.

Clinical Signs

The first signs seen in an infected flock may just be a sudden rise in mortality. However, early infection with *Histomonas meleagridis* will cause the bird to appear lethargic, with drooping head and wings, a very non-specific observation. Feed consumption may be reduced, leading to weight loss. A very distinctive sign in the live bird is the appearance of sulphur-yellow droppings caused as a result of damage to the liver. Any time signs such as these are seen in live birds, a sample of sick birds should be submitted to a poultry veterinarian or to the Animal Health Laboratory for diagnosis.

Post-Mortem Observations

The classical lesions associated with Histomoniasis are thickened cecal pouches containing yellowish, firm cores, and enlarged livers spotted with target-like lesions representing areas of necrosis, or cell death. While the gross lesions are usually diagnostic, it is important to confirm the diagnosis and rule out similar appearing diseases such as salmonellosis and coccidiosis. This is especially important early in the progression of the disease. To improve the accuracy of the diagnosis, it is useful to submit very fresh dead birds for post mortem examination.

Life Cycle of *Histomonas meleagridis*

Histomonas meleagridis has a complex life cycle that is illustrated on the following page. When understood, the difficulty in managing around this disease becomes evident.

The histomonad itself will not survive well in the environment and will die within a short time. Its ability to penetrate and remain viable within the egg of the cecal worm, however, gives the parasite an enormous survival advantage. Added protection is given when contaminated cecal worm eggs are consumed by

Signs:

- Lethargic, drooping wings, head
- Reduced feed consumption
- Sulfur-yellow droppings

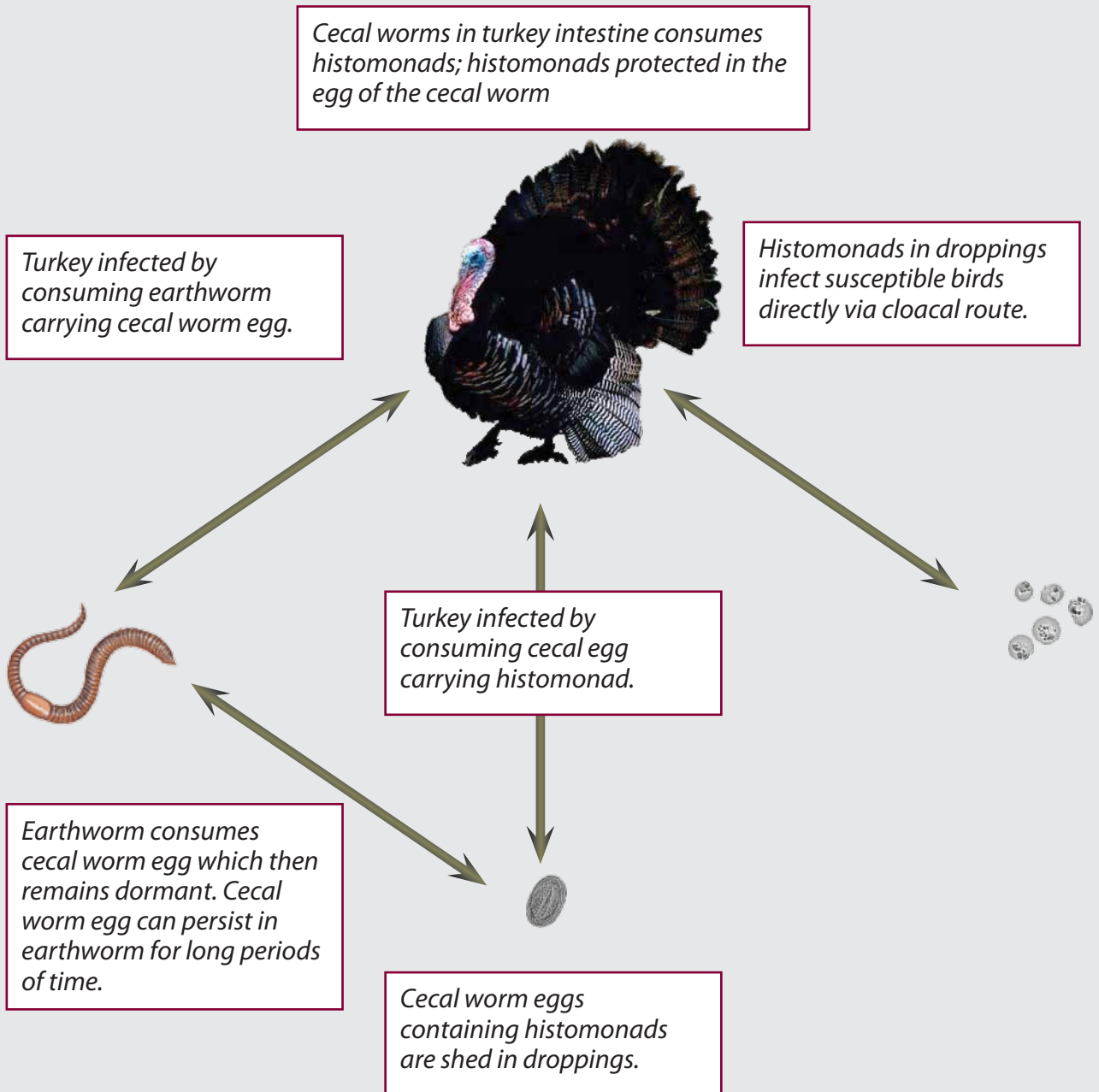
Post-mortem:

- Thickened cecal pouches with yellow cores
- Enlarged liver with target-like lesions



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earthworms. Fields that have been populated with infected turkeys or other birds, can remain contaminated for years. This is particularly important if chickens had previously occupied the premises because they are likely to have only very mild infections but will still shed histomonad-containing cecal worm eggs.



Life cycle of *Histomonas Meleagridis*

Histomonas meleagridis

Treatment of Histomoniasis

Unfortunately, there is nothing currently available for the treatment of Blackhead in food-producing birds.

Prevention and Control of Histomoniasis

The first and best control method is to avoid exposing turkeys to *Histomonas meleagridis*. As simple as this statement is, the reality is that to accomplish control of Blackhead requires a multilayered approach.

The first level of control is to exclude earthworms from the birds' diet. Housing birds inside on a concrete floor will significantly reduce the likelihood of turkeys gaining access to earthworms. It is important, however, to make sure that water from the outside cannot gain entry into the barn, even in small amounts, as this will facilitate the movement of earthworms into the barn. Even a small opening that remains moist will allow the entry of earthworms.

If birds are to be housed on dirt floors or outdoors, ensure that the ground has not been previously inhabited by chickens or turkeys. Previous exposure of the ground to chickens or turkeys that have been infected can result in contamination that can remain active for years. Also ensure that the ground is well drained to discourage earthworms.

The next level of control is to eliminate or reduce the cecal worm parasite. Thorough cleaning of the barn between flocks will reduce the amount of contamination carried over by infected cecal worms. However, it is impossible to be sure that the worm is eliminated. A targeted worming program that is designed to prevent any cecal worms from reaching maturity should be considered if dealing with a high risk situation.

The final level of control, when faced with a very high risk of challenge, is to attack the parasite directly. Because the organism dies quickly when in the environment away from the turkey host or the cecal worm and earthworm vehicles, the only method of control is in the bird itself. Only one product, nitarstone, is available for control of blackhead. This product is included in the feed and must be given prior to any exposure to the parasite. It is important to understand that nitarstone is effective only as a preventative and cannot be used as a treatment.

Finally, make sure that good biosecurity is followed to prevent the entry of blackhead from other farms. Because the parasite itself is so fragile, the greatest risk of infection comes with the cecal worm, specifically cecal worm eggs, which can be easily carried by manure and manure-contaminated equipment and shoes. Blackhead can easily be prevented through routine biosecurity practices.

Treatment:

- None

Prevention

- Prevent earthworms from accessing turkey holding area
- Do not run turkeys on range that has previously held chickens
- Well drained range or dirt floor area
- Control cecal worms
- Preventative in-feed medication if high risk
- Maintain good biosecurity practices

Summary

Blackhead is a disease caused by a single-celled parasite that infects the turkey's intestine and liver, causing serious illness and death. Its complex life-cycle makes the parasite a challenge to control once it gets into a premises. Control requires good biosecurity and an effective worming program aimed at the cecal worm.

