Pennsylvania Game Commission Wildlife Disease Reference Library

Trichomoniasis

Other Names: Canker, frounce

Cause

Trichomoniasis is an infectious disease of birds caused by the single-celled protozoan *Trichomonas gallinae*. There are several different strains of this protozoan, some of which cause clinical disease, while some of which do not. This disease is also known as canker in pigeons and doves, and frounce in raptors. Trichomoniasis is one of the oldest known wildlife diseases with written records dating back to the 1500s. The protozoan responsible for the disease was not isolated until 300 years later.

Significance

Trichomoniasis is considered the most important disease of mourning doves in North America and can result in major die-offs of this species. The largest outbreak of trichomoniasis occurred over 2 years (1950-1951) in Alabama and neighboring states and resulted in the death of 50,000 to 100,000 mourning doves. It is one of the feeder associated diseases and transmission to a variety of songbird species is of great concern and appears to be leading to serious population declines in some species.

Species Affected

Trichomoniasis is primarily a disease of pigeons and doves, but raptors are also commonly affected. On rare occasions waterfowl and upland gamebirds have been affected. Domestic turkeys, chickens, and other captive birds can also be infected. This protozoan is not known to infect humans.

Distribution

Trichomoniasis occurs in birds worldwide except Antarctica, Greenland, and the northern reaches of North America, Europe, and Asia. *T. gallinae* probably occurs at some level wherever rock pigeons and mourning doves are found.

Transmission

Young doves and pigeons acquire the protozoa when infected adults regurgitate into their mouths during feeding; adults are the reservoir host for this organism. The protozoa are shed into the environment in the oral secretions of infected birds.

Protozoa may also pass from one adult to another by direct bill to bill contact which is common during courtship. Susceptible birds may also consume *T. gallinae* in contaminated food or water. The protozoa are killed by drying, but can survive for up to 5 days in moist grain, and 20 minutes to several hours in water. Supplemental feeding and other practices that congeregate susceptible bird species can lead to local mortality. The protozoa are transmitted to raptors when they feed on infected birds.

Clinical Signs

Clinical trichomoniasis is primarily a disease of young pigeons and doves. In fact, 80-90% of adult pigeons carry *T. gallinae*, but show no clinical signs of illness. The protozoa inhabit the upper digestive tract of all affected birds, so there will often be inflammation of the lining of the mouth and esophagus, which can develop into cheese-like masses. The lesions within the upper digestive tract may interfere with eating and drinking; birds that are unable to swallow often become emaciated and listless. Affected birds may also exhibit ruffled feathers, diarrhea, and difficulty breathing. Their necks and faces often appear puffy or swollen. Birds usually die from starvation because they cannot swallow or from suffocation because lesions in the mouth block the trachea.

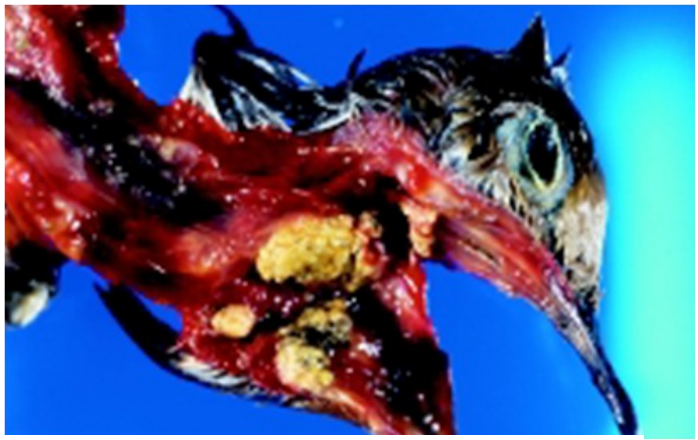

Photo courtesy of USGS by J. Christian Franson

Diagnosis

Trichomoniasis is diagnosed by laboratory identification of the *T. gallinae* protozoan, though when lesions are present like those shown in the photo the diagnosis can be presumed.

Treatment

Medications are available that can successfully treat trichomoniasis in birds. Captive birds can be treated by oral administration of the medication or by applying the medication to food and water. Treatment is challenging and probably not feasible in wild populations because of widespread availability of food and water.

Management/Prevention

Doves and pigeons should be prevented from congregating in large groups, particularly at bird baths and feeders; where feeding does take place, both food and water should be kept fresh and changed daily. Feeders, platforms, and other associated surfaces should be decontaminated regularly with a 10% bleach solution (9 parts water: 1 part bleach). Infected captive birds (symptomatic and asymptomatic carriers) should be culled or treated.

Suggested Reading

Cole, R. A. Trichomoniasis. Pages 201-206 *in* M. Friend, and J. C. Franson, technical editors. Field Manual of Wildlife Diseases: Birds. United States Geological Survey.

Forrester, D. J., and G. W. Foster. 2008. Trichomonosis. Pages 120-153 *in* C. T. Atkinson, N. J. Thomas, and D. B. Hunter, editors. Parasitic Diseases of Wild Birds. Wiley-Blackwell, Ames, Iowa, USA.

Michigan Department of Natural Resources. Wildlife Disease. Trichomoniasis. <http://www.michigan.gov/dnr/1,1607,7-153-10370_12150_12220-27288--,00.html>.