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**BROODER PNEUMONIA (ASPERGILLOSIS)**



**This disease  
is known to  
occur in  
Afghanistan.**



**1. Definition**

Brooder pneumonia is a subacute to chronic fungal respiratory disease of chickens and other birds. Other names for the disease include: aspergillosis, Pneumomycosis, Mycotic pneumonia, pneumonocystis, air-sac disease, pseudo-tuberculosis.

**2. Etiology**

The causative agent is *Aspergillus fumigatus*, a fungus that is found in many environments and the number of spores produced increases with warm, moist conditions.

**3. Transmission**

Birds become infected through inhaling spores of the fungus. The greater the environmental contamination with fungus, the larger the number of animals that will be affected with the disease. Moldy food or litter can contain abundant organisms. A serious problem happens when hatcheries are infected, as the spores can penetrate the egg shell and result in disease in large numbers of hatched chicks.

**4. Species affected**

Chickens, turkeys, geese, ducks, pheasants, and canaries are all susceptible to infection with *Aspergillus* and development of disease. It is also a very common disease of pigeons and zoological birds.

Care should be taken when working over open carcasses of birds with aspergillosis as the spores from the fungal masses can aerosolize and infect humans through inhalation. Disease in humans can be severe, especially in the immunocompromised.

*Aspergillus* spores from the lesion can infect humans and cause a fungal respiratory disease.

### **5. Clinical signs**

Incubation period is 2-6 weeks. Morbidity is usually low but can be high in cases of massive hatchery infection. Birds are inappetent and become emaciated. There is nasal discharge, dyspnea, and gasping. Birds become debilitated and susceptible to many other infections. In some cases the fungus invades the brain or eye and then there is encephalitis or blindness. Mortality is usually high.

### **6. Pathologic findings**

Grossly, there can be caseous or necrotic masses in multiple locations, especially the respiratory tract, where the fungus can grow in large accumulations and form visible masses. These can appear as plaques in the nasopharynx. In the air sac, they appear as fuzzy “buttons”, often with the appearance of stemless mushrooms, attached to the wall, and the surface consisting of a mycelia mat that can discharge spores. In the lungs, the lesions are more nodular and distributed throughout the parenchyma.

### **7. Diagnosis**

The appearance of the lesions is highly characteristic. Field or laboratory confirmation can be done by an impression smear. For this, a small piece of nodule or scraping is crushed in 10% potassium hydroxide or sodium hydroxide, put on a slide with a cover slip, and mycelia structures with fruiting bodies are evident. Additional confirmation can be done through

culturing of the fungus. Differential diagnoses for clinical disease includes: Newcastle disease, infectious bronchitis, chronic respiratory disease, pullorum disease.

### **8. Treatment**

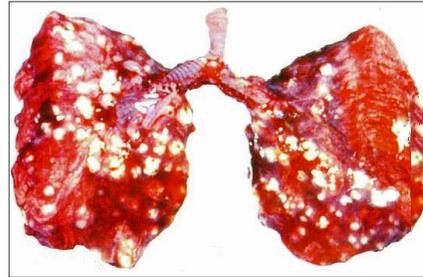
There is no effective treatment for birds with aspergillosis.

### **9. Prevention and Control**

Affected chicks should be removed and destroyed. Fumigation of litter will kill the spores. Hatchery should not be located near feed mills or other installations which exhaust organic dust that could have spores. Overcrowding and moist litter should be avoided.



*Aspergillus* plaque on the palate of a starling



*Aspergillus* miliary nodules, lung