



7. Fungal infections in turkey flocks

by Albert Nakielski, DVM, Specialist of Poultry Diseases, BioPoint, Stawiguda, Poland. www.biopoint.eu

The most common fungal infections in turkey flocks are aspergillosis and candidiasis. In order to develop they need contributory factors, such as inappropriate conditions affecting bird welfare, the use of mouldy bedding material, fodder contaminated with fungal spores, lack of vitamins or accompanying infections causing lowered immunity.

ASPERGILLOSIS

Caused by: *Aspergillus fumigatus*, *A. flavus*, *A. niger*, *A. nidulans*.

- One of the most dangerous diseases among turkey poults is aspergillosis.
- It usually develops in poults during the first two weeks of life.
- The occurrence of the disease has been linked to poults hatching or rearing in an environment contaminated with fungal spores.
- Young birds during their rearing are most vulnerable to the disease but it may also occur in older birds.
- Fungal spores enter the organism through the respiratory tract. When they reach parabronchi and epithelium of the air capillaries, the spores sprout and reach the circulatory system from there.
- The disease usually has an acute character and causes a sudden, uncontrollable increase in flock mortality.
- Characteristic mycosis symptoms are dyspnoea, frequent gasping, neck stretching and closing eyes.
- Main post-mortem lesions are single or multiple whitish fungal nodules in lung tissues and air sacs.
- Hyperaemia of the upper and lower respiratory tract and focal fungal lesions in the brain are also found.
- Sometimes necrotic lesions in nasal turbinates and fungal nodes on the surface of the cornea are noticeable as well.
- Prevention is currently the preferred approach to control this disease.

CANDIDIASIS

Caused by: types of yeast – *Candida albicans*, *C. crusei*, *C. tropicalis* – and often referred to as a fungal infection.

- It usually affects poults younger than three weeks, sometimes older, and 11-14 week-old birds.
- The infection is foodborne and

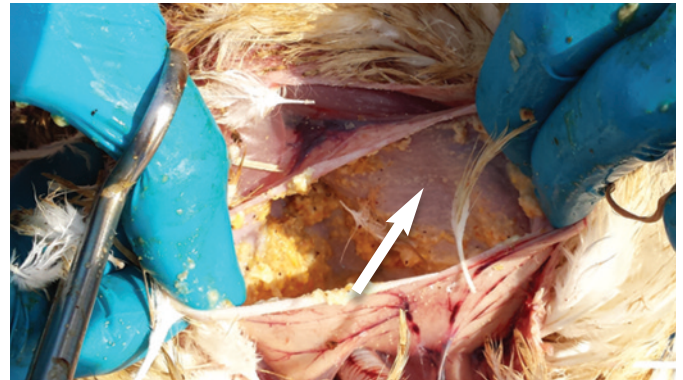
occurs as a result of consumption of fodder, water or bedding contaminated with blastospores.

- The most important factor which encourages spreading of the fungal spores in the organism and the development of symptoms is long-lasting antibiotic treatment.
- Spores populate mostly the beak cavity, oesophagus, crop and proventriculus.
- Under appropriate conditions for development the fungus can spread on the surface of these organs and fungal filaments may penetrate into the top layers of epithelium.

The latter undergoes pathological outgrowth and a grey and yellow coating in the form of a pseudomembrane appears on the surface of epithelium.

- Non-specific symptoms, such as lack of appetite, inhibition of growth, decrease in activity or ruffled feathers are commonly found in the course of the disease.
- Pendulous crop, neck stretching and beak opening as well as nervous ticks are also sometimes found.
- Confluent yellow or white coating tightly covering the mucosa can be seen in post-mortem observation of preferential sites of fungal

Caseous nodules due to aspergillosis in an air sac (2-week old turkey male).



Candidiasis – crop surface wrinkled and coated with confluent mass of white pseudomembrane (8-week old toms).

development (usually in the crop). When the coating is removed, ulcers of varying intensity are noticeable.

Management of flocks in respect of fungal infections, as with many other health issues, should be focused on prevention, as treatment of the disease is difficult and often ineffective.

The best available solution to protect birds against infection is strict adherence to sanitation on the farm. However, both during prophylaxis as well as during disease outbreak, additional measures can be taken, such as application of herbal preparations.

In our practice we often apply with positive results: Defungal (a combination of herbal materials and potassium iodide) and Mintamix (a

combination of herbal materials and vitamin A).

PROPHYLAXIS

As a prophylaxis the following programme can be applied:

Defungal 200ml/1000l of drinking water/12 hours daily.
Duration of treatment: 3-5 days, starting from first week of birds' life.
Application route: Drinking line.

Prevention against Aspergillosis (additional measures):
Defungal 200ml; Mintamix 200ml/10l of warm water.
Frequency of administration: 2-3 times per week.
Duration of treatment: First two weeks of birds' life
Application route: Spray.

DURING DISEASE OUTBREAK

Barns should be fumigated with enilconazole according to label directions. Defungal may additionally help reduce the challenge.

Defungal 200 ml/1000l of drinking water/12 hours daily.
Duration of treatment: five days, starting from first signs of occurrence.
Application route: Drinking line.

Aspergillosis outbreak (additional measures): If enilconazole is not applied daily, then between successive applications of enilconazole spray application of Defungal is recommended. ■