International Poultry Production's
Poultryhealth BYTES
YOUR OWN REFERENCE SOURCE ON POULTRY HEALTH

052 – Cryptosporidiosis

Introduction

Cryptosporidiosis is a disease of the respiratory and digestive tracts caused by a coccidial-like parasite known as Cryptosporidium. Cryptosporidial infections have been seen in chickens, turkeys and quail as well as some species of wild birds. Although crytoporidiosis is important in man, especially immunosuppressed individuals, there is no evidence that the avian species, Cryptosporidium bailey, causes problems in man nor that the common human isolate, C. parvum, is an issue in poultry.

Life cycle

There are six key stages:

- Excystation – the release of infectious sporozoites.
- Merogony – asexual multiplication in epithelial cells (lining digestive or respiratory tract).
- Gametogony – formation of male and female gametes.
- Fertilisation – the union of gametes.
- Oocyst wall formation.
- Sporogony – the formation of infective sporozoites in oocyst wall.

When the sporozoites are released they invade neighbouring cells in the host.

Epidemiology

Hard to diagnosis unless revert to histopathology. Screening can be done by ELISA and surveys have shown levels of up to 40% in American broilers.

As few as 100 oocysts can result in intestinal infections. Infection is usually from the ingestion of contaminated faecal material and no vectors have been identified although wild birds and vermin may be mechanical carriers of this infection.

Clinical signs

Intestinal and respiratory signs can be seen as soon as three days post infection although, in the case of the latter, the appearance of clinical signs after seven days is much more likely. Air sacculitis and pneumonia are most common two to four weeks after infection, although by four weeks of age resistance to infection is pronounced.

Intestinal cryptosporidiosis in chickens can cause gross lesions and/or overt clinical signs and it would appear that in broilers performance can be adversely affected.

In turkeys cryptosporidiosis is associated with diarrhoea, unthriftiness and some mortality in two week old poults and cases of respiratory disease have been attributed to cryptosporidial infection. If the upper respiratory tract is involved, infra-orbital swellings and mild conjunctivitis can be seen.

Diagnosis

Diagnosis is best done by demonstrating the causal cryptosporidium in respiratory tract samples or faeces.

Histopathology can be used to demonstrate intracellular stages of the cryptosporidial in the infected bird.

Control

The oocysts of Cryptosporidium Spp. associated with infections in poultry are very resistant to chemicals and so destruction of oocysts in commercial premises is not a viable or practical proposition.

Immune protection would appear to be short, thereby making vaccination not a practical proposition except, perhaps, for protecting broilers during the second half of their lives.