MANAGEMENT OF COCCIDIOSIS OUTBREAK IN TURKEY GROWERS

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ABSTRACT

An outbreak of coccidiosis was recorded in the forty per cent of Nandanam – II turkey growers maintained at TANUVAS – Regional Research Centre, Pudukkottai and 6.25 per cent of the affected birds died after 5 – 10 days from the onset of symptoms. The microscopic examination of superficial scraping of the mucosa from intestines and caecum of dead birds revealed the presence of large numbers of schizonts (+++) and oocysts (++) of *Eimeria* sp. in the caecal / intestinal contents. Coproculture for *in vitro* sporulation of coccidial oocyst revealed the following species; *Eimeria meleagrimitis* (upper small intestine) and *Eimeria adenoides* (caeca). The entire flocks of turkey grower were treated with anticoccidial drugs Supercox (Diaveridine and Sulphaquinoxaline) in drinking water and Amprolium hydrochloride in feed as a shuttle programme. All the affected turkey growers recovered after 7-10 days from the onset of infection and showed marked improvement in feed intake and body weight gain.

KEY WORDS: *Eimeria*, Anticoccidial, Turkey, Ccoccidial oocyst

INTRODUCTION

Coccidiosis, a diseased condition of the digestive tract caused by a protozoan coccidial parasite of the genus *Eimeria,* developing within the intestine of most domestic and wild birds and remains one of the major disease problem in spite of advances made in prevention and control through chemotherapy.

Coccidiosis is a major problem and causes a huge economic loss to poultry industry. Even though coccidiosis is a disease known for many years, it is still considered as the most economical important parasitic condition affecting poultry production worldwide (Parvez *et al.,* 2000). Turkeys were susceptible to seven species of *Eimeria*, but only two of these, *Eimeria adenoeides* and *Eimeria meleagrimitis,* were considered significant pathogenic (Souslby, 1982). Although coccidiosis was controllable under most circumstances, the cost of control made the disease one of the most expensive parasitic diseases encountered in the poultry industry (Majaro, 1981).

The present paper documents occurrence of coccidiosis in Nandanam – II turkey growers maintained at turkey unit, TANUVAS – Regional Research Centre, Pudukkottai.

MATERIALS AND METHODS

A total number of 200 Nandanam–II variety turkey growers housed in four separate pens were maintained under intensive system of housing at TANUVAS – Regional Research Centre, Pudukkottai. The turkey birds were reared in deep litter with standard managemental practices. Turkey growers were maintained in ground haulms litter materials with a floor space of 4 sq.ft/ bird. Turkey birds were offered feed and water *ad libitum*.

An outbreak of disease occurred during the month of July 2013 characterized by enteric disorders and mortality in one of the four pens in the age group of 12-14 weeks of age. Subsequently the

occurrence of disease was also noticed in other pens in the age group of 14-18 weeks of age. The clinical signs observed in the affected turkey growers were recorded. Post-mortem examination was carried out in the dead birds and the samples of proventriculus, gizzard, intestine, and caecum were collected in 2.5 potassium dichromate solution and 10 per cent formalin and glycerol and sent to Department of Veterinary Parasitology, Veterinary College and Research Institute, Tirunelveli for diagnosis. The superficial scrapings of the mucosa from different areas of intestine and cecum were collected on a glass slides and dilute with an equal quantity of normal saline and then covered with cover glass. The prepared glass slides were then examined for occysts and schizonts under low and high power objectives of microscope (Reid *et al.,* 1984).

RESULTS AND DISCUSSION

An outbreak of disease involving the turkey growers was characterized by enteric disorders starting from 12th week of age. A first attempt in controlling the syndrome with antibiotics (Sulphadiazine and Trimethoprim) was unsuccessful. Forty per cent (80 out of 200) of Nandanam – II turkey growers in the age group of 12 -18 weeks showed the sign of ruffled feathers, drooping of wings, reduced feed intake, weight loss, depression and watery diarrhea occasionally blood stained with a foul odour and 6.25 per cent (05 out of 80) of the affected birds died after 5 – 10 days from the onset of symptoms especially in the age group of 12-14 weeks.

Fig 1. Intestine of Nandanam – II turkey grower affected by Coccidiosis

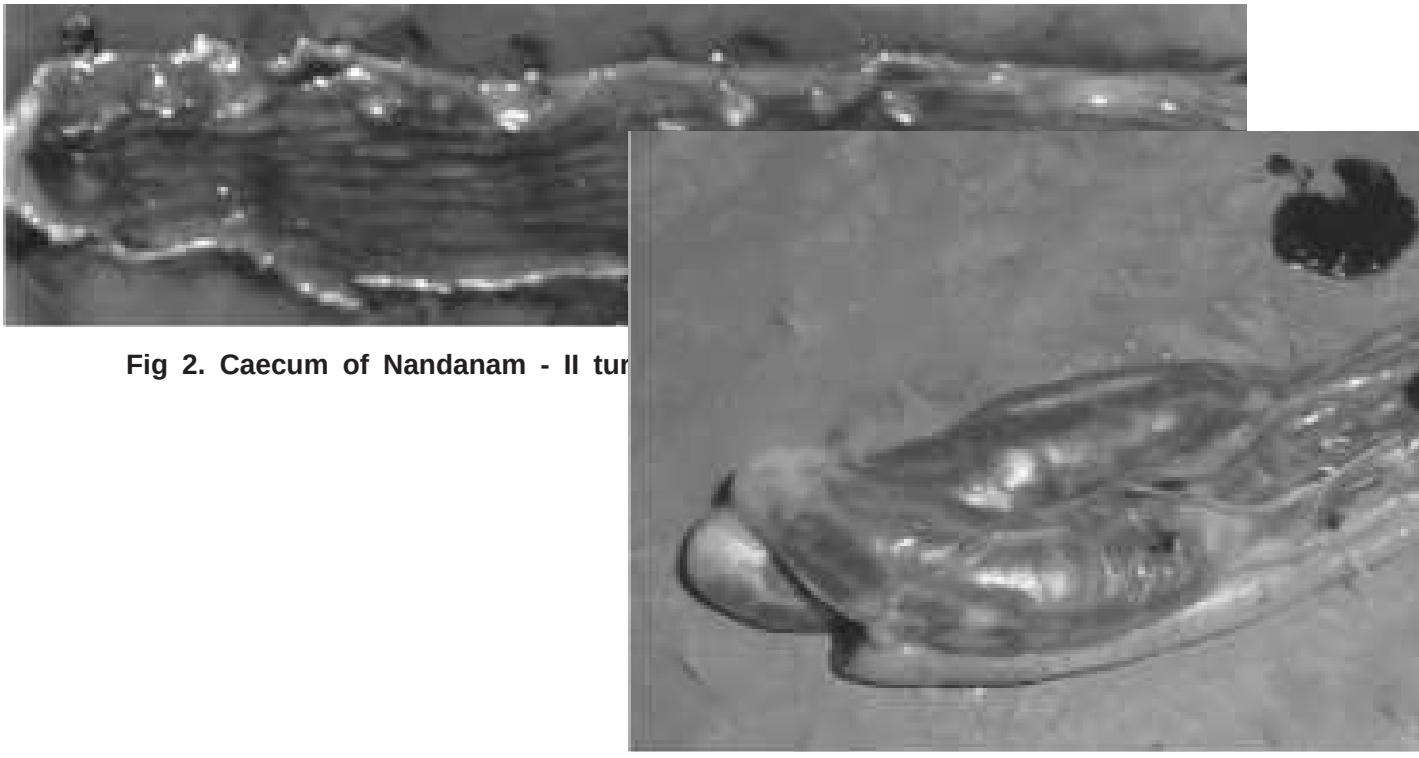

Fig 2. Caecum of Nandanam - II tur

The disease was mainly transmitted to other birds by ingestion of coccidial oocysts shed in the feces of infected birds. Oocysts were environmentally stable and were not killed by most disinfectants. The complex life cycles of the coccidia strains virtually ensured its survival in the poultry environment. It usually infected immature turkeys before their immune system develops (Larson, 2007).

The dead birds which were subjected to post mortem examination revealed that the entire small intestine were affected, the mucosal surface of intestine were congested, the intestine have streaks of blood, the intestine wall thickened and ballooned with red pinpoint lesions and the intestinal contents were hemorrhagic (Fig. 1). The caecum of the gut was severely affected and filled with blood **(**Fig. 2**)** in most of the dead birds and with semi-liquid to solid white cores in few birds. Similar pathology has been reported for coccidiosis in turkey (Reid *et al.,* 1984). The microscopic examination of superficial scraping of intestinal and caecal mucosa revealed the presence of large numbers of schizonts (+++) and oocysts (++) of *Eimeria* sp. in the caecal / intestinal contents. Coproculture for *in vitro* sporulation of coccidial oocyst based on morphometry and morphology revealed the following species; *E. meleagrimitis* (upper small intestine) and *E. adenoides* (caeca). The affected flocks were then treated with 0.1 per cent of Supercox (Diaveridine and Sulphaquinoxaline) through drinking water for 5 days and then followed by unmedicated drinking water for next 2 days. Meanwhile the entire sheds were disinfected and the litter materials in all the pens were removed and replaced with new bedding materials. Then again the entire grower flock were treated with 0.5 per cent of Supercox through drinking water for next 5 days and in addition the feed was also mixed with a dietary coccidiostat 50 g (Amprolium hydrochloride 200mg in 1g powder) in 50 kg of grower mash feed and fed to the entire stock as a prophylactic treatment for one month period of time. This treatment is a shuttle programme which is a planned switch of drug in the middle of the growing period of birds (Reid, 1975). All the turkey birds recovered from the illness after 7-10 days from the onset of infection and then showed marked improvement in feed intake and body weight gain. Management of poultry houses plays a significant role in the control of coccidiosis because coccidial oocysts are ubiquitous and are easily disseminated in the poultry house environment.

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