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RESEARCH PAPER

Clinical signs and pathology of *Eimeria* species in layer birds

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ABSTRACT

Present study was undertaken on clinical signs and pathology of *Eimeria* spp. in layer birds at Sai poultry Farm, Selu Kalmeshwar, Nagpur during 2006. The birds were suspected to be infected with coccidia by clinical signs and post mortem lesion. The presence of the eggs of coccidia from the intestinal scrapping and faecal material was morphologically identified. The study revealed that more losses in terms of eggs production and mortality in the flocks were observed due to the infection with the coccidia. The egg production potential was also hampered for 10 to 15 days and cost of expenditure on treatment and medicine accounted much. Loss in body weights with generalised weakness and immunosuppression in the flocks made prone to another diseases. The mortality and losses may rise up if the disease is not diagnosed and treated timely.

Key words : *Eimeria*, Layers, Immunosuppression, Enteritis.

Eimeria tenella and *E. necatrix* are the most widely distributed coccidia of poultry and commonly encountered in every part of the world in poultry industry(Chakravarty, 2007). These are localised in caeca and small intestine and affect the system which exert greater economic effects by means of heavy mortality and drop in eggs production. It causes lesions on caecal wall, pinpoint haemorrhages on intestinal wall and wall of duodenal loop. The most pathognomic lesion of coccidia is enteritis characterised by bloody diarrhoea, progressive weakness, anaemia and loss in feed consumption (Williams, 1998). High mortality with drop in egg production is a most important economic effect. This form is a most common where average mortality is high but can be controlled if it is diagnosed earlier. Keeping this in view, the present investigation enunciates the pathology and symptoms of *Eimeria* species in layer birds.

MATERIALS AND METHODS

The present investigation was carried out during the outbreak of coccidiosis in layers (BV-300) of 24000 at the age of 35 weeks at Sai Poultry Farm, Selu, Kalmeshwar, Nagpur during 2006. There was a history of increasing mortality of birds, daily decline in egg production by 2 to 3.5 % and loss in feed consumption. The birds were suspected to be infected with coccidia by clinical signs and post mortem lesion. The presence of the eggs of coccidia from intestinal scrapping and faecal material was morphologically identified as key given by Soulsby (1982). The faecal samples were examined by direct smear technique for the presence of eggs as per the standard method described Levine (1985). During the post mortem, gross pathological changes were noted particularly with caeca, intestine and duodenal loop. Small pieces of the same part were collected and preserved in 10% buffered formalin for histopathological study (Shastry,1983). The tissues were sectioned 4-5 µm and with haematoxylin and eosin.

RESULTS AND DISCUSSION

Multiple enteritic lesions with pinpoint haemorrhages were observed throughout the intestine and button shaped haemorrhages on caeca of all birds were found. Same type of disease symptoms were observed by Williams (1998). The intestinal and caecal content was mucoid mixed with blood. Histopathologically, the mucus membrane in general showed congestion of intestinal mucosa and necrosis of the superficial part of villi, infiltration of lymphocytes, mononuclear cells, large numbers of microgametes within macrogametes and some oocysts in the epithelial cells. Macrophages and RBCs in lamina propia has been found. However, the infiltration of lymphocytes in the mucous membrane were more at affected part of the duodenum and intestine. Lillehoj and Trout (1996) found that gut associated lymphocytes, duodenum and intestine caused more damage . The coccidiosis in poultry generally causes generalised weakness and loss in body weight due the destruction of RBCs, immunosuppression due to affection in lymphocytes and drop in eggs production due to the disturbances in digestive system.