

The Prevalence and Pathogenicity of Cryptosporidium Sp. (Protozoa) in Livestock.

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Abstract:

A survey of the incidence of cryptosporidial oocysts in the faeces of pigs, sheep, goats and cattle was carried out using Giemsa stained faecal smears. A total of 230 pigs, 150 sheep, 130 goats and 105 cattle were tasted. Cryptosporidial oocysts were detected in 78.13% diarrheic and nondiarrhoeic pigs examined. 12%, 3.8%, and 7.6% clinically healthy sheep, goats and cattle respectively were found shedding the oocysts of the organism. Incidence of cryptosporidial oocysts was significantly ($P < 0.05$) higher in young animals between 110 weeks old than in older animals. Animals with and without diarrhea were found to be shedding oocysts in their faeces. Five piglets were experimentally infected with approximately 1,500 sporulated cryptosporidial oocysts, whilst five others served as uninfected controls. None of the five infected piglets developed clinical illness of cryptosporidiosis.

There was neither diarrhoea, vomiting nor inappetence. Sheddings of oocysts in the faeces of the infected piglets began as from day post infection (p.i) and this continued throughout the eight week period of the experiment. Slight decrease in the body weight of the infected piglets were observed on the 2nd-5th week p.i., however, these animals regained their body weights 6th week p.i. There was a significant difference ($p < 0.05$) in the average weekly body weight gain of infected piglets when compared with control piglets (120gm/wk Vs 400gm/wk).

Two control and two infected piglets were slaughtered eight weeks p. i. There were minimal pathological lesions along the small intestine of the infected piglets. Histologically, there were the stunting and fusion of the villi of the small intestine. The sub-mucosa was eroded and the lamina propria, were infiltrated with cellular debris consisting of sloughed epithelial cells. Cryptosporidia were found attached to the villi of the small intestine. There was a proliferation of Kupffer cells in the liver, indicative of phagocytic activities in the liver of the infected piglets. The kidney and the spleen were not affected histologically.

Keywords: Cryptosporidial/ Histology/ oocysts/ Body weight/ Pathology

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