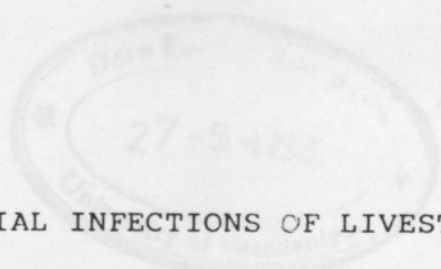


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INTESTINAL COCCIDIAL INFECTIONS OF LIVESTOCK
IN SRI LANKA

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A thesis presented to the
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by

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This study was initiated in the first instance to identify the intestinal coccidia species parasitising buffaloes, cattle, goats and pigs in livestock farms in Sri Lanka. This study was also directed to determine the prevalence and abundance of various species of coccidial oocysts as regards to the age and their association with diarrhoea in buffalo calves. For this purpose, 49 buffalo calves born over a period of six months in a large farm in the North Western Province, were examined at 9-13 day intervals from birth.

Wet smears following concentration, and dried, stained smears were examined for detection of coccidia. Morphological studies on sporulated oocysts were carried out for species confirmation. Oocyst counts were made, where necessary.

A total of 27 species of Eimeria were identified from buffaloes, cattle, goats and pigs. Faecal samples from buffalo calves revealed nine species of Eimeria namely, E. subspherica, E. zuernii, E. cylindrica, E. ellipsoidalis, E. bareillyi, E. bovis, E. canadensis, E. auburnensis and E. ankarensis. Six species of Eimeria namely, E. subspherica, E. zuernii, E. ellipsoidalis, E. bovis, E. cylindrica and E. auburnensis were recorded from cattle. Eight species of Eimeria namely, E. pallida, E. alijevi,

E. ninakohlyakimovae, E. apsheronica, E. hirci,
E. arloingi, E. jolchijevi and E. christenseni were
found in goats, whereas from pigs, four species namely,
E. debliccki, E. neodebliccki, E. scabra and E. porci
were identified. Further, Cryptosporidium oocysts
were detected from 2 of 56 apparently healthy
calves. They were not detected from buffalo calves.
Eimeria zuernii, E. ellipsoidalis and E. bovis from
cattle and E. christenseni, E. alijevi, E. pallida,
E. apsheronica and E. arloingi from goats were
documented previously by other workers. The other
19 species of Eimeria from buffaloes, cattle, goats
and pigs are documented, for the first time, in Sri
Lanka. Further, this study records the first isolation
of Cryptosporidium from cattle in Sri Lanka.
The earliest detection of coccidial oocyst excretion was
made in buffalo calves, as young as, 15 days. The
maximum oocyst discharge occurred between the 21st
and 30th days of age. Eimeria bareillyi was the
species found most frequently and excreted most
numerously by calves between the 15th and 40th days
of age. Eimeria subspherica was the second most
prevalent and numerously discharged species by calves
between the 15th and 30th days of age. After the
second month of life, a low grade of infection with
all nine species of Eimeria was observed.

Thirty two of the 49 (65.3%) buffalo calves studied manifested diarrhoea. Twenty seven of the 32 (84.4%) calves . . . showed diarrhoea first between the 16th and 30th days of life. Twenty diarrhoeic calves had oocyst counts of 1.2×10^5 to 8.69×10^6 oocysts/gm of faeces. Only two species of intestinal coccidia namely, E. bareillyi (90-100%) and E. subspherica (0-10%) were present in these calves. Nine calves which had diarrhoea died between the 23rd and 42nd days of life.

This study clearly illustrates that E. bareillyi and E. subspherica are the two species of intestinal coccidia most prevalent, particularly among young buffalo calves and furthermore, they could be important aetiological agents of diarrhoeal disease in these animals.

work has been carried out. I am indebted to Mr. Sarath Bandara, Assistant Manager NIDB farm, Malsiri-pura for helping me in the collection of faecal samples.

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