

## ESCHERICHIA COLI SEROTYPES IN CAPTIVE HERBIVOROUS ANIMALS

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(Received for publication on 20.3.92)

The prevalence of *Escherichia coli* (*E. coli*) serotypes in captive herbivorous animals, having different pathological conditions, of the Assam State Zoo, Guwahati was studied. A total of 24 animals belonging to 11 different species died with different disease conditions during the period of 1988-1991. The species of the animals were spotted deer, barking deer, sambar, mouse deer, black buck, nilgal, serow, giraffe, elephant, rhinoceros and zebra. Twenty eight different specimens from these animals were collected aseptically at the time of post mortem (Table). The samples were brought immediately to the laboratory and processed for isolation of the bacteria. The methods of Edwards and Ewing (1972) were followed to isolate and identify the *E. coli* strains. The isolated *E. coli* strains were sent to the National Salmonella and *Escherichia* Centre, Kasauli, H.P. for serotyping.

All the 28 specimens examined were found positive for the bacteria. Of the 28 strains of *E. coli*, 19 strains

were typable and belonged to 16 different serotypes. Six strains were untypable and the remaining 3 strains were rough. The distribution pattern of the *E. coli* serotypes in different species of the animals is shown in Table.

The study revealed the involvement of different *E. coli* serotypes with similar type of pathological conditions of different species of animals. *E. coli* serotype 037 could be isolated from the intestinal content of two barking deer having the pathological conditions of enteritis and diarrhoea, while serotype 017 and 08 could be isolated respectively from the intestinal content of a black buck and a nilgal showing the symptoms of diarrhoea. The present finding suggests that different *E. coli* serotypes may have enterotoxic activity and are associated with the cause of diarrhoea. Likewise different *E. coli* serotypes were isolated from the lung and heart blood samples of animals showing similar pathological condition (Table). This

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Table. *Escherichia coli* serotypes in captive herbivores

Animal	No. of animals	Nature of sample tested	<i>E. coli</i> Serotype
Spotted deer	4	i. Pus swab from liver	097
		ii. Lung	060
		iii. Intestinal content	Untypable
		iv. Lung	05
Barking deer	4	i. Intestinal content	074
		ii. Lung	04
		iii. Intestinal content	037
		iv. Intestinal content	037
Sambar	4	i. Swab from the back wound	0154
		ii. Swab from the cervical region wound	017
		iii. Duodenal content	07
		iv. Intestinal content	Untypable
Mouse deer	2	i. Intestinal content	Rough strain
		ii. Intestinal content	Untypable
Black buck	2	i. Swab from wound	0133
		ii. Intestinal content	017
Nilgai	2	i. Intestinal content	08
		ii. Intestinal content	Untypable
Scrow	1	i. Intestinal content	Rough strain
Giraffe	1	i. Heart blood	Rough strain
Elephant	1	i. Intestinal content	08
Rhinceros	3	i. Heart blood, lung and intestinal content	Untypable
			0163 and 043
		ii. Heart blood	09
		iii. Heart blood	018
Zebra	1	i. Heart blood	0156

finding also attributes to the enteroinvasive nature of different *E. coli* serotypes. Interesting finding in the present study is the isolation of different *E. coli* serotypes from three different clinical samples of a rhinoceros. This is possibly due to the existence of different *E. coli* serotypes in the intestinal tract of the animal and enteroinvasive strains depending upon their site of predilection localized in different organs and cause pathological condition.

#### ACKNOWLEDGEMENTS

The authors are grateful to the Assam State Zoo authority and Assam Agricultural University for providing necessary facilities. Thanks are also to the Director, National Salmonella and Escherichia Centre, Kasauli, H.P., India for serotyping the *E. coli* strains.

#### REFERENCE

- Edward, P.R. and Ewing, W.H. (1972). Identification of Enterobacteriaceae. 3rd Ed. Burgess publishing Co., Minneapolis, Minnesota.