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CAMPYLOBACTER SP. IN FECES OF MARSH DEER (*BLASTOCERUS DICHOTOMUS*)

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ABSTRACT

Campylobacter spp. was studied in feces samples from 74 marsh deer (*Blastocerus dichotomus*) from the western part of central Brazil, using direct growth in Butzler medium and filtration techniques. No strain species were isolated; these findings are discussed.

KEY WORDS: Deer, enteropathogens, campylobacteriosis.

RESUMO

CAMPYLOBACTER SPP. EM FEZES DE CERVOS DO PANTANAL (*BLASTOCERUS DICHOTOMUS*). *Campylobacter* spp. foi estudado em amostras fecais de 74 cervos-do-pantanal (*Blastocerus dichotomus*) da região centro-oeste brasileira, utilizando técnicas de semeadura direta em meio de Butzler e técnicas e filtração. Não foram isoladas estirpes bacterianas, sendo os resultados discutidos.

PALAVRAS-CHAVE: Cervídeos, enteropatógenos, campilobacteriose.

INTRODUCTION

Bacterial of the *Campylobacter* genus have been isolated from several domestic animal species. The agent is eliminated mainly in feces; fecal-oral dissemination is the main transmission route to animals and man (LUECHTEFELD et al., 1981; ACHA & SZYFRES, 1986). In humans, immunosuppressive factors are of major importance in triggering campylobacteriosis, especially in people with acquired immunodeficiency syndrome (ANGULO et al., 1994). In view of the potential risk of zoonosis from *Campylobacter* reservoir animals, research into its occurrence in domestic and wild animals should be stimulated. Cervids have been reported as transmitting infectious diseases to humans and domestic animals (HUBALEK et al., 1993; FLETCHER, 1997; MACKINTOSH, 1998), including those by bacterial enteropathogens *Campylobacter*. This poses a risk to public health due to fecal-oral dissemination, worsened by increasing consumption of cervid meat (ADESIYUN et al., 1998). There is little data in Brazil on the role of these animals in the elimination of pathogens to the environment.

MATERIALS AND METHODS

This study included 74 marsh deer (*Blastocerus dichotomus*), commonly found in flooded areas of the western part of central Brazil. The area for marsh deer capture and feces collection was between South 21º 43'39" West 52º 13'15" and South 22º 12'58" West 52º 36' 35", an area about 10 km wide which will be flooded by a hydroelectric project. The animals were captured using the *Bulldoging* technique, anesthetized, and 74 feces samples were collected. Samples were refrigerated in glycerin medium and transported to the Animal Health and Preventive Veterinary laboratory of Botucatu School of Veterinary Medicine –UNESP, São Paulo State. The feces were submitted to two parallel procedures: 1) Filtration – one gram of feces was suspended in a test tube with 9 mL saline, vigorously homogenized for 1 minute, centrifuged at 2,500 rpm for 5 minutes, and filtered using a 0.65µM cellulose acetate membrane filter. Three drops of this filtrate were grown on *Petri* dishes in sodium thioglycolate agar supplemented with 20% bovine blood and incubated at 37º C. 2) Direct growth – one aliquot of feces was grown in streaks in the same agar with *Butzler* selective supplementation (bacitracin,

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novobiocin, cyclohexamide, colistin, and cephazoline) and incubated at 43° C. In both procedures, the plates were incubated under microaerophilic conditions for 72 hours. Suspect colonies were examined using a phase-contrast microscope (1000x) for evaluation of vibrion characteristics and typical spirillum movement. After presumptive diagnosis, these colonies were replicated in Tarozzi medium and incubated at 37° C for 72 hours to obtain the inoculum; density was adjusted to 1 MacFarland standard turbidity (3×10^8 CFU/mL). Definitive diagnosis was made using the following tests: catalase production; growth at 25°C, 43° C, in 1% glycin, and in 3.5% NaCl; production of H_2S with and without 0.02% cysteine; hippuricase production; tolerance to 2'3'5' triphenyltetrazoline chloride; sodium selenite reduction; and resistance to nalidixic acid and/or cephalotin (HARVEY et al., 1980; QUINN et al., 1994). The nomenclature used is in Bergey's Manual of Determinative Bacteriology (HOLT et al., 1994).

RESULTS AND DISCUSSION

In *Campylobacter* strain was isolated from the 74 marsh deer feces samples. These results suggest 0 prevalence of *Campylobacter* spp in cervids from western São Paulo State. Similar data were reported by PAGANNO et al. (1985) and PACHA et al. (1987), who did not isolate this bacterium from cervids and other wild animals from North America. ADESIYUN et al. (1998) reported low prevalence of this enteropathogen in cervids from Trinidad. One case of enteritis by *Campylobacter hyointestinalis* was documented by HILL et al. (1987) in cervids of the species *Cervus timorensis* subsp. *Moluccensis*. *Campylobacter* spp. was not detected in marsh deer despite its frequent isolation and wide dissemination in domestic animals and birds (LUECHTEFELD et al., 1981). Our findings are corroborated by data from literature allowing the hypothesis that these cervids are not colonized by *Campylobacter* spp. under natural conditions. This may be related to the peculiar epidemiological situation of these animals, which live in an isolated ecological niche restricted to humid areas, and also to this bacterial pathogen's inability to survive for long outside a host gastrointestinal tract.

CONCLUSIONS

Marsh deer are not colonized by *Campylobacter* spp. under natural conditions, but further detailed studies about the occurrence of this enteropathogen in these animals should be performed.

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