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Authors: WEBBER, JONATHAN, and SELBY, LLOYD

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A SURVEY OF WHITE-TAILED DEER *(Odocoileus virginianus)* FOR EVIDENCE OF *Moraxella bovis* INFECTION

JONATHAN WEBBER and LLOYD SELBY, Department of Veterinary Microbiology, College of Veterinary Medicine, University of Missouri, Columbia, Missouri 65211, USA.

Abstract: Eye swabs for attempted isolation and identification of *Moraxella bovis* were taken from 293 white-tailed deer *(Odocoileus virginianus)* in the fall of 1979. *Moraxella bovis* was not isolated from any of the deer sampled and examination of the corneal surfaces did not reveal any evidence of prior keratitis.

INTRODUCTION

Infectious bovine keratoconjunctivitis (IBK) is a highly contagious disease of cattle caused by *Moraxella bovis*.[5,6] This disease is of considerable economic importance to the Missouri cattle industry.[9,10] Cattle can harbor *M. bovis* infection for an extended period of time in the absence of clinical disease.[1,3,7] While convalescent and subclinically infected cattle are thought to be the chief reservoir of *M. bovis* infection, the possible role of other animal species as a potential reservoir of *M. bovis* has never been investigated.[7] The only reports of the natural isolation of *M. bovis* from a species other than domestic ruminants, are from a horse[4] and from a common waterbuck, *Kobus ellipsipyrmnus ellipsipyrmnus*.[2]

The purpose of this survey was to evaluate the potential role of the white-tailed deer, *Odocoileus virginianus,* in the epizootiology of IBK, by determining if deer were naturally infected with *M. bovis.*

MATERIALS AND METHODS

Deer. Samples were collected from white-tailed deer harvested on the first day of the Missouri Department of Conservation's statewide regular deer hunt of 1979. The first 100 deer presented at each of the Conservation Department's check stations in Callaway, Morgan and Osage counties were sampled. The sex and age of each deer was recorded.

Samples. A sterile cotton-tipped applicator was used to swab the ventral conjunctival sac. Swabs were immediately streaked on to brain-heart infusion agar [1] containing 5% bovine blood, transported back to the laboratory and incubated for 24 h at 35 C. Colonies resembling *M. bovis* were subcultured on to 5% blood agar and, after incubation at 35 C for 24 h, smears were prepared from oxidase positive [2] colonies for direct fluorescent antibody (FA) staining and examination (modified from Pugh *et al*).[8] All eyes were examined visually for active or healed corneal lesions.

RESULTS

All deer were culturally negative for *M. bovis.* Corneal opacity, frequently seen in convalescent cases of IBK, was not observed in any of the deer. Three deer had keratitis due to mechanical irritation from fescue grass awns (still *in situ*).

DISCUSSION

The results of this study indicate that white-tailed deer from the three sampling areas in Missouri are not naturally in-

[1] Difco Laboratories, Detroit, Michigan 48233, USA.

[2] Pathotec Cytochrome oxidase, General Diagnostics, Morris Plains, New Jersey 07950, USA.

fected with *M. bovis* and therefore are unlikely to play a role in the epizootiology of IBK in this region of Missouri.

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