



CANINE HEARTWORM IN WYOMING - A CLOSER LOOK

The WSVL has been watching for canine heartworm, *Dirofilaria immitis*, for many years. Infected dogs have been found sporadically by necropsy, serotest and/or microscopic examination of blood samples. An unknown number of veterinary clinics in Wyoming also test for the worm, but their results are not reportable, therefore the true prevalence in our state is unknown. The logistics of sampling, trapping and otherwise acquiring specimens of, or from potential reservoir mammals for testing are formidable, unacceptable to certain segments of society and inefficient. Considering the number of potential hosts, including dogs, coyotes, wolves, cats, foxes, ferrets, and possibly other animals in our state, the likelihood of the worm being resident here is reasonably high. Another suggestive factor is the known endemicity of the worm in all of our neighboring states.

In all of the years during which WSVL Parasitology has been watching for the worm, infected dogs have been regularly found, most of which were known to have come from a heartworm-endemic state, or were taken to an endemic area during the mosquito season, when transmission risk is high. Only 4 infected dogs have been identified as hosts possibly or probably infected within Wyoming. One was near a state border adjacent to a neighboring state known to harbor endemic *D. immitis*. Two of the dogs were from more central locations, but were transported to areas of the state near borders, for hunting or general family purposes. Recently, from 2000 to 2004, 8 dogs have tested positive at the lab, 1 each from Crook, Laramie and Sheridan counties, 2 from Washakie and 3 from Albany county. None of those 8 are suspected of having acquired the infection within the state.

Recently, the laboratory has examined blood collected from black-footed ferrets located in Wyoming and other states. Thirty samples from Wyoming ferrets have been tested, with 3 positives. One of those positive samples was rated very weak, and therefore possibly falsely positive. The two solid positives suggest that canine heartworm does, in fact reside in Wyoming. The finding of infected wild ferrets in our state was a surprise, and an indication that we do harbor one or more endemic sites.

A graduate research project has just begun in the Department of Vet Science to survey mosquitoes collected from areas where suitable mosquito vector species are known or believed to reside. The project involves collecting, identifying and sorting mosquitoes trapped in 5 areas thought to be optimal for habituation by the vector species. A polymerase chain reaction (PCR) analysis will be performed on batches of 200 mosquito heads for detection of the L3 larvae of *D. immitis*, present in the salivary glands of the vectors. The test has been shown to be capable of identifying 1 infected mosquito head in a batch of 200. It is specific for the canine heartworm.

The graduate student is Roy Fenoff and he is preparing for the mosquito trapping phase of the study, which will continue through 2005 and possibly 2006 mosquito activity seasons, after which the laboratory testing will begin. Whether or not *D. immitis* is prevalent, scarce or absent from Wyoming should be revealed within the next year or two, after which we will inform you of the results.

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