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02. Animal Science

Northeastern State University

Abstracts from the 2015 Oklahoma Research Day

Held at Northeastern State University

05. Mathematics and Science

02. Animal Science

05.02.01 Investigation of Rickettsia rickettsii infections in Northeastern Oklahoma Dogs

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The bacteria Rickettsia rickettsia is responsible for causing Rocky Mountain spotted fever (RMSF) in infected mammals. The American dog tick, Rocky Mountain wood tick, and Brown dog tick are the primary hosts and transfers the bacterium to a secondary host, such as dogs, during feeding. The purpose of this study was to investigate exposure to R. ricketsii in Northeast Oklahoma dogs currently exhibiting tick-borne disease symptoms, such as fever, lethargy, anorexia, and depression. Blood was collected from 26 dogs exhibiting tick-borne disease symptoms between September and December 2014 at a local veterinary hospital. Sera were tested for antibodies to R. rickettsii using an indirect immunofluorescent antibody (lgG) assay. EDTA-treated whole blood was obtained from all animals that tested positive for the antibody and end-point polymerase chain reaction (PCR) was employed to confirm the presence of the organism. Antibody testing revealed that 17 (65%) dogs had positive titers to R. rickettsii. Positive samples were evaluated by PCR to confirm the presence of Rickettsia spp. However, only 11 (65%) samples tested positive for the Rickettsia spp. spotted fever group ompA gene. These data conclude that while symptomatic dogs may test positive for antibodies to R. rickettsii, it doesn't necessary mean that they are currently infected with rickettsial bacteria.