The Presence of Borrelia burgdoeferi in Ixodes scapularis

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Ixodes scapularis (black-legged ticks) infected with Borrelia burgdorferi, the causative agent of Lyme disease, is endemic throughout the upper Midwest. Over the most recent years, the number of reported cases in Wisconsin has skyrocketed. Wisconsin alone makes up 25% of the United States Lyme Disease cases, with cases being reported in every single county totaling 4,300 cases from 1990-2015. Buffalo County, Wisconsin is one of the state's leading counties for reported Lyme Disease cases, with 74 reported cases in 2015. The researcher hypothesized that the percentage of ticks positive with the Borrelia burgdorferi pathogen would exceed 20%, due to anecdotal observations. Sixty-five random Ixodes scapularis samples were collected from deer during the 2018 fall deer harvest. A maximum of 5 Ixodes scapularis were collected from deer carcasses, collecting only in the neck and chest region. Each tick sample was tested for Borrelia burgdorferi using PCR and electrophoresis methods to determine the presence of Lyme disease in Buffalo County, WI. The results obtained supported the hypothesis; with 49% of samples testing positive for the disease. This study indicates it is in the best interest of Buffalo County to develop and implement tick reduction and awareness plans to protect the health of the population.

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