

E/IV-4**MODELING THE TEMPERATURE-RELATED AVERAGED ANNUAL RUN OF RELATIVE LB INCIDENCE IN THE PERIOD OF 1998-2012 IN HUNGARY**

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Ixodidae ticks, -the main vectors of *Borrelia burgdorferi*-, take only one or a few very large blood meal per life stage to develop. The development highly depends on the ambient temperature. Between both the interstadial development rates of ticks and the daily questing can be described by non-linear relationships with temperature. It is important for modeling that ticks vary their questing activity in response to their immediate climatic conditions. Our aim was to model the Lyme season using a population dynamics model. The weekly incidence of LB data for the period 1998-2012 were retrieved from the Hungarian National Epidemiological and Surveillance System. We handle the country as a homogenous unit. The daily mean temperature data were derived from the European Climate Assessment & Dataset. Our approach was that the relative (percentage) weekly LB-incidence is the function of a temperature-dependent activity factor of ticks– the tick activity positively correlates with the outdoor temperature –, and the potentially questing ratio of tick population. Secondly we expected, that there is a start whole hungry nymph and adult tick population before the tick season. These population starts to decrease in the first week and to the end of the season only low percentage of the start population remains. The model calculate the next week's percentage population iteratively from the same week's calculated activity and the previous week's remained population. We found that this model can well describe the observed Lyme season.

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