P 28 Tick-borne diseases in South Bohemia (Czech Republic)

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Tick-borne diseases (TBDs) represent a problem of increasing importance. In Europe, Lyme borreliosis and tick-borne encephalitis have a major impact on public health. Both diseases are recognized as zoonoses with natural nidality – they circulate in more or less geographically localized areas among ticks and their hosts. A number environment-, host-, tick-, or pathogen-associated factors influences the circulation of the pathogens, and thus these systems are very complex and have to be studied in their complexity.

The presented study is focused on description of the intensity of occurrence of ticks, tick-borne encephalitis and Lyme borreliosis in the region of South Bohemia, and on identification of the key factors influencing the distribution.

In 3 sampling events (May, June, September), 20,056 ticks (18,829 nymphs, 578 females, and 650 males) were sampled by flagging in a network of 30 sampling sites spread over the region of South Bohemia. The density of host-seeking ticks differed considerably among the localities (range 11–70 ticks/100 m^2) and among different sampling events (4.6–0.74 ticks/100 m^2).

The ticks have been tested for the presence of tick-borne encephalitis virus (TBEV) and *Borrelia burgdorferi* s.l. by (RT-)PCR. So far, 11,278 ticks were tested for TBEV reaching the minimum infection rate of 0.48%. TBEV was detected in ticks from 19 sampling sites, in 6 other sites, no TBEV was detected, from 5 sites, insufficient numbers of samples were tested so far. The prevalence of borrelia reached 12% (11,146 ticks tested) and differed considerably among the sampling sites and individual sampling events.

The data on tick activity were analysed in order to identify any associations with specific environmental factors. Significant association was found with altitude and vegetation cover. These 2 variables were used for development of a spatial model of acarological risk.