

Comparison of bacteria and fungi entomopathogenic activity against *Ixodes ricinus* L. and *Dermacentor reticulatus* Fabr.

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Entomopathogenic microorganisms as natural element of environment are also known as factors of biological control of the arthropods which are important from medical, veterinary and agricultural point of view. Up to now, crystalliformes bacteria *Bacillus thuringiensis* and fungi *Beauveria bassiana* and *Metarhizium anisopliae* are the most successful in biocontrol strategies. In the practice, they are widely used against agricultural pests and mosquitos. Presently, the need for searching natural bioagents of ticks (Ixodidae) is connected with their growing vector role of many pathogens of human and animals.

Because in Poland, the biggest importance is related with *Ixodes ricinus* L. (*Borrelia burgdorferi* s.l. transmission) and *Dermacentor reticulatus* Fabr. (*Babesia canis*) in own research their susceptibility to some entomopathogenic microorganisms were tested in the laboratory conditions. For biotests we used some *B. thuringiensis* strains from own collection of the Institute of Genetics and Microbiology, Wrocław University as well as *M. anisopliae* fungi soil strains isolated from the tick habitats in Wrocław Agglomeration (Poland). The number of used ticks was 30 of different gender and specimen for each strain (total 380 ticks with the control group). The bacterial concentration of *B. thuringiensis wratislaviensis* strains (PO12) and *B. thuringiensis* (KPC1, OPQ3, QPB11) was 10^4 – 10^9 cfu/ml with spore percent 20–79,38. The lethal concentration for the 50% of specimens was high ($LC_{50} = 1,5 \times 10^9$ – 1×10^{11}). Thus, two of used own bacilli strains (KPC1, QPB11) were weekly effective contrary to soil fungi strains. The *M. anisopliae* [LO4(1), LO52(2)] concentrations 10^5 – 10^6 [conidia/ml] caused significant mortality in the range (LC_{50} was 5×10^5 – 5×10^6). Our results show the promising role of newly isolated soil fungi strains as microbial biological agents against *I. ricinus* and *D. reticulatus* ticks.

Their ability to eliminate insects or acari is used in the practice to search for the best one, that will be the great alternative for chemical agents of pest control.