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Red deer fascioloidosis – a model for host-parasite interaction

Fascioloidosis is a parasitic disease caused by non-native parasite *Fascioloides magna. F. magna* originally parasitize in the North American deer species. It was introduced to Europe at least twice, forming the three foci of infection: Italian, Czech and Danubian. The latter two gave origin to other, newly formed areas, including the Croatian one. *F. magna* was detected in Croatia in 2001 and since then have spread to the majority of its lowland areas. The fact that *F. magna* is a non-native parasite enables us to observe development of host-parasite interactions, but also to create conditions of case-control study in the wild, large mammal population. In this research we aimed to compare variability and presence of specific alleles of MHC class II – DRB exon 2 in relation to *F. magna* infection. A total of 117 red deer livers and faecal samples originating from lowland (Baranja, Lipovljani and Spačva) and mountain area (Gorski Kotar) were collected. Of them, based on location and parasitological analysis, 46 individuals were selected and tissue samples were sent for analysis using next generation sequencing (NGS). We have detected 44 DRB alleles (2-4 alleles per individual). Four alleles were already known (our references - DRB_NS36, DRB_NS38, DRBref01 i DRBref02). Statistically significant difference was detected in the level of infection in the case of animals with DRB_ref01 and DRB_ref06 alleles ($\chi 2 = 0, 939$, $p = 0, 332$). This implicates on a potential development of host-parasite interaction in the case of red deer and *Fascioloides magna*.

Speaker Biography

Dean Konjevic is currently working as a professor at the department of veterinary economics and epidemiology, University of Zagreb Veterinary Faculty. He received his DVM in 2000 and PhD in 2009. He is active diplomate of the ECZM and European veterinary specialist in zoological medicine. Since 2016, he serves as vice-dean for science, postgraduate studies and lifelong learning. He was member of scientific and organizational committees of several international conferences, workshops and summer schools. He was principal investigator on two Croatian Science Foundation projects and one ESF project and associate on FP7 and IPA projects. His fields of interests are veterinary epidemiology, wildlife diseases, species conservation and comparative odontology.

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