Comparison of Two Tick Populations in Domat/Ems (GR, Switzerland) on a Hiking-Trail and on a Golf Course According to the Amount of Ticks, Hosts and Infections with the Pathogens of Tick-borne Encephalitis, Lyme Borreliosis and Tularemia

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There are several diseases that can be passed on from ticks to humans. Three of these diseases are tick-borne encephalitis, Lyme borreliosis and tularemia. Lyme borreliosis occurs in many parts of the northern hemisphere, while tick-borne encephalitis only occurs in parts of Europe, Russia and Central Asia. Tularemia is rather unknown in Switzerland, but its distribution worldwide is close to the distribution of Lyme borreliosis. In this paper two locations, a golf court and a hiking trail, were examined on the quantity of ticks and their infections with the three diseases. These two locations were chosen because they are well frequented. This could be confirmed by photo-trappings. Especially the photo-trapping that was placed by the hiking trail made photos of many humans (n=61), whereas the one on the golf court only made a few (n=4). 96 samples with 597 ticks were examined in collaboration with the LaborTeam WAG. Only six ticks were found on the golf court, while 583 ticks were found on the hiking trail. 82.3% of the samples were positive for B. burgdorferi s. l., 2% were positive for the TBE virus and 11.45% were positive for F. tularensis. The percentage of infected ticks with B. burgdorferi s. l. is approximately between 50%-82.3%, infected with the TBE virus are about 0.34%-2% and infected with F. tularensis are approximately 1.84% of the ticks. Especially the many positive samples of tularemia were unexpected, because another Swiss study would have suggested a much lower percentage of positive samples.

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