

ESOVE 2024

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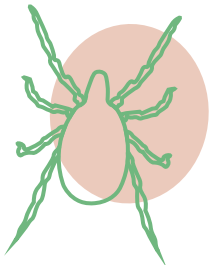
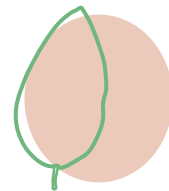
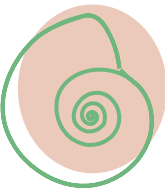
ONE HEALTH IN ACTION:
supporting and accelerating
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14-17th Oct. 2024
Montpellier, France

BOOK OF ABSTRACTS

Program - Abstracts - Posters
Lists of participants, partners & exhibitors

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S4-P11

Spatio-temporal re-colonization of top-predators modulates zoonotic infections in ticks

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Introduction and Objectives

Predator community can change abundance and composition of their preys, affecting emergence and spread of tick-borne infectious diseases for which some preys (e.g., ungulates, rodents) are often common hosts. We aim to evaluate if sites with gradual temporal re-colonization of a top-predator, the wolf (*Canis lupus*), exhibit different infection prevalence in ticks.

Materials and Methods

We identified four study areas (NV = Non Valley, PP = Paneveggio-Pale di San Martino Natural Park, LV = Laghi Valley and GV = Giudicarie Valley) located in the Autonomous Province of Trento (Italian Alps), each characterized by a temporal gradient of re-colonization from east-to-west of wolf in recent years. Specifically, in NV the species is considered stable since 2017, in PP since 2019, in LV since 2021, while yet sporadic in GV. During 2023 in each study area, we collected host-seeking ticks in forested habitats by dragging the vegetation. PCR-based methods were used to detect infection of *Borrelia burgdorferi* s.l., *Anaplasma* spp. and *Babesia* spp. in ticks.

Results, Discussion and Conclusion

During this first year, we collected 394 *Ixodes* spp. ticks across the study areas. We preliminary obtained higher prevalence of *Borrelia* spp. in areas historically colonized by wolves (NV: 28.72%; PP: 15.48%), compared to where wolf is sporadic (LV: 13.11%; GV: 11.70%) and the opposite for *Anaplasma* spp. (NV: 1.06%; GV: 4.25%). *Babesia* spp. prevalence rates did not show any specific pattern. We speculate that the established presence of wolf may interfere differently with the circulation of tick-borne pathogens, both indirectly affecting *Borrelia*-competent rodent hosts' predators, such as foxes, or directly by hunting *Anaplasma*-competent hosts, such as ungulates.

These preliminary findings suggest that predator community may have a crucial role in modulating zoonotic disease circulation by affecting preys local presence or abundance that will be incorporated in our forthcoming analysis.