Title
Diversity of parasite communities in co-existing wild and domestic ungulates in Kenya

Authors

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Abstract

Co-existence of wildlife and livestock is a common occurrence, yet there remains a limited understanding of parasite sharing between these species across the wildlife-livestock interface. Gastrointestinal nematodes pose significant concerns due to their association with production losses in livestock and potential detrimental impacts on species abundance in wildlife. This concern is particularly pronounced in regions experiencing increased interactions between livestock and wildlife, such as the Maasai Mara ecosystem in Kenya. In our study, we aimed to evaluate variations in gastrointestinal parasite communities in co-grazing animal species across different interface areas. We collected nematode infective larvae from ~1000 fresh faecal samples obtained from 14 sympatric wild and domestic herbivore species (>10 kg) across mixed livestock-wildlife and single-occupancy pastures. Larval DNA was analysed through metabarcoding of the variable ITS-2 region, and sequences were grouped into Amplicon Sequence Variants (ASVs) and cross-referenced with a database (nemabiome.ca) to identify nematode species. We will present the parasite diversity observed among the 14 co-existing host species and highlight the impact of host traits and phylogenetic relationships on the composition of parasites within the sampled animal hosts. Our findings shed a light on the parasite communities inhabiting wild and domestic animals in the Maasai Mara ecosystem and underscore the implications of parasite transmission dynamics in wildlife-livestock interface areas.