Ticks infesting Italian hares (*Lepus corsicanus*) and their habitat in southern Italy

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AIM- The Italian hare (*Lepus corsicanus*) is an endangered species whose natural populations have decreased significantly in central and southern Italy in the past recent years. Hares (*Lepus* spp.) are known hosts for many tick species, but so far there are no studies on ticks infesting Italian hares. The objective of this study was to identify the tick species infesting Italian hares and their habitats in a natural wildlife reserve in southern Italy.

MATERIAL AND METHODOS- In June 2009, ticks were collected by dragging (total sampling effort, 339 minutes of slow dragging) in three transects set in a meadow habitat within an enclosure inhabited by Italian hares and in three similar transects outside this enclosure. Additionally, in September 2009, ticks were collected from 12 Italian hares living in the same enclosure. Ticks were identified morphologically and molecularly (by PCR amplification and sequencing of a partial region of the 12S rDNA gene). Meteorological data was correlated with the number of ticks collected daily by dragging.

RESULTS- A total of 55 ticks (36 males, 19 females) were collected by dragging, being 54 inside and 1 outside the enclosure. The tick density (number of ticks/hour) collected by dragging in each transect varied from 5.7 to 12.9. Most ticks were collected in the afternoon (n = 44; 80%) and no tick was collected during evening. Ticks were identified as *Hyalomma marginatum* (34 males, 17 females), *Dermacentor marginatus* (2 males, 1 female), and *Rhipicephalus bursa* (1 female). A total of 286 ticks were collected from Italian hares, with an overall mean intensity of infestation of 24.3 ± 22.4 (range, 11 to 28 ticks per hare). Ticks were identified as *Ixodes ricinus* (2 larvae, 45 nymphs, 35 males, 37 females), *Rhipicephalus turanicus* (1 males, 1 nymph), and *Hyalomma* spp. (165 nymphs). Nymphs of *Hyalomma* spp. were subjected to PCR amplification and sequencing of a partial region of the 12S rDNA gene, which allowed their identification as *H. marginatum*.

CONCLUSIONS- This study suggests that host presence is a factor determining the level of environmental tick infestation as well as the species of free-living ticks in the study area and that Italian hares serve as host for *I. ricinus* (all stages) and *H. marginatum* (immature stages). Further studies to assess whether Italian hares and their associated ticks are infected by pathogens of medical and veterinary concern are needed.