

Studies regarding the distribution and ecology of ticks in dogs from Eastern Africa are scarce. Our research was based on a long-term screening of ticks parasitising the domestic dogs living with indigenous people around Lake Turkana, Mt. Kulal and Mt. Nyiru areas, Northern Kenya. A total of 9977 ticks were collected from 1464 dogs of all ages and both sexes. Identification was performed using morphological keys and data were analyzed using the Repeated Measures ANOVA, post-hoc Scheffe test and F test, relating independent variables as seasons and regions. Final results were translated to maps using GIS software. Five species of ticks were identified: *Rhipicephalus pulchellus*, *Rhipicephalus sanguineus sensu lato (s.l.)*, *Rhipicephalus armatus*, *Amblyomma gemma* and *Hyalomma truncatum*. Our results suggest a statistical difference of the tick community structure related to seasonal and altitudinal distribution. Parasitism with *R. armatus* and *R. pulchellus* was higher in September–October than in January, whereas, *R. sanguineus s.l.* was not influenced by the season. *Rhipicephalus armatus* was present exclusively on dogs living in semi-desert areas, while *R. sanguineus s.l.* was the dominant species present on the shores of Lake Turkana. Although *R. pulchellus* was present in the all studied areas, this species had a significantly higher abundance in the afro-montane region of Mt. Kulal and montane xeromorphic forest of Mt. Nyiru; these regions are characterized by elevated humidity and cooler climate. Similar geo-climatic distribution is typical also for *A. gemma*, which was found in dogs exclusively in Mt. Kulal afro-montane area. The current work represents the most extensive study performed on the tick community structure of dogs in Eastern Africa. The results showed a relatively limited tick species diversity, with clear seasonal differences and altitudinal distribution.