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**Ants and scuttle flies as potential biological control agents of spinose ear tick
*Otobius megnini***

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Current control strategies of ticks are exclusively based on applying chemical acaricides. Regardless of their effectiveness, intensive use can have negative impact on non-target organisms. *Otobius megnini* is a soft tick (Acari: Argasidae) that parasitizes many domesticated animals and humans and is a serious problem for the horses in the Nuwara Eliya race course. We studied the potential use of ants and scuttle flies in controlling *O. megnini* under laboratory conditions. *O. megnini* infesting the ear canal of stabled horses in Nuwara Eliya racecourse was brought to the laboratory and separated according to their life stage (larvae/ nymphs) and allowed to moult. Adults that hatched out were maintained in plastic grid plates to lay eggs and then the eggs were incubated in Eppendorf[®] tubes. Eggs, unfed/engorged larvae, nymphs and adults were left on the laboratory bench for ants to predate and scuttle flies to lay eggs. Observations were recorded from September 2014 to January 2015. A total of 50,000 eggs (500 batches having 100 eggs in each), 576 larvae, 650 nymphs and 450 adults were exposed to ants. Five ant species: two species of *Monomorium* (small black ant), *Pheidole* (big headed ant), *Tapinoma melanocephalum* (ghost ant) and *Crematogaster* (acrobat ant) were identified as predators of *O. megnini*. One *Monomorium* sp. and *Pheidole* sp. predated on 97 and 64 unfed larvae, respectively. Engorged larvae (n=206) and adults (n=150) were completely destroyed by *Crematogaster* sp. Rest of the ant species fed on adult ticks. Among the ants, *T. melanocephalum* was the best predator as it fed on free living adults (n=194) and eggs (213 batches). Nymphs were not predated by any ant species. Yet, nymphs are not free living and hence it is unlikely that the ants get a chance to predate on them under natural conditions. The scuttle fly *Megaselia scalaris* (Diptera: Phoridae) laid eggs on nymphs (n=41) and adults (n=84) of *O. megnini* and later, maggots fed on nymphs and adults. Pupae of *M. scalaris* were found attached to the emerged adult ticks. Adult flies emerged 15 days after the appearance of maggots. During the process, 90.2% of the adults were found dead and those remained alive were lethargic. Although the ants and scuttle fly can be used as effective biological control agents, more attention must be paid on consequences and subsequent impacts in the natural context.

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