

# Hypoaspis nr. aculeifer: a Mite Predacious on Root-knot and Cyst Nematodes<sup>1</sup>

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Among the biological agents that may limit nematode population densities, mites are the least well known and studied. There are only a few reports (1,2,3,4,5) of mites feeding on nematodes. There is also a lack of information on the species of mites that are nematode predators. Evidence that soil mites of the suborder *Mesostigmata*

feed on the egg sac of *Heterodera* sp. and on *Meloidogyne* sp. has been shown experimentally (2,3). Unidentified species have also been reported preying on root-knot nematodes (1). *Macrocheles muscaedomesticae* (Scopoli) and *Lasioseius scapulatus* Ven. have been reared, respectively, on a microbivorous nematode, *Rhabditella leptura* (Cobb) Chitwood, and a mycophagus nematode, *Aphelenchus avenae* Bastian, (2,4).

Colonies of a laelapid mite, *Hypoaspis* nr. *aculeifer* (Canestrini), have been found in greenhouse soil at Logan, Utah, in association with tomato (*Lycopersicon esculen-*

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Fig. 1. *Hypoaspis* nr. *aculeifer* feeding on *Meloidogyne chitwoodi* egg masses on the surface of a tomato root. Scale bar = 248  $\mu$ m.

tum Mill.) roots infected with *Meloidogyne chitwoodi* Golden et al. and *M. hapla* Chitwood, and sugarbeet (*Beta vulgaris* L.) roots infected with *Heterodera schachtii* Schmidt. Several specimens were observed feeding on the egg masses of both the cyst nematode and root-knot nematodes (Fig. 1), indicating that *H. aculeifer* is a nonspecific biological agent, as are many other predators. The possibility that *H. aculeifer* feeds only on the gelatinous matrix that surrounds the nematode eggs can not be excluded, though several mite specimens have been observed with the rostrum and the chelicerae penetrated into the gelatinous matrix. Mite colonies with eggs were found in cracks on the stem and roots of tomato plants. Specimens of a similar, but as yet unidentified, species were also detected in soil samples collected from *M. chitwoodi* infested fields at Fort Hall, Idaho.

Whether *H. aculeifer* is a factor in limiting plant-parasitic nematodes is not known, but *H. aculeifer* has also been re-

ported feeding on nematodes in Europe (G. O. Evans, personal communications). It appears that this mite, as well as other possible biological agents, may be important in balancing these pest nematode populations in field ecosystems.

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