



## Research Note

# Report of entomopathogenic nematode, *Steinernema carpocapsae* (Weiser) (Nematoda: Steinernematidae) from North Gujarat

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**ABSTRACT:** Natural occurrence of entomopathogenic nematode, *Steinernema carpocapsae* (Weiser), from Lodpa village of Dantiwada Tehsil of Banaskantha District, Gujarat, India, is reported along with morphometric observations of third stage infective juveniles. The IJs were 571.92 µm long and 24.25 µm in width. The distance recorded from anterior end to excretory pore was 43.62 µm, while the distance from anterior end to nerve ring was 91.11 µm. The oesophagus length was 130.17 µm, the tail length was 52.87 µm and anal width was 15.00 µm. The a,b,c ratios recorded were 22.61, 4.49 and 10.88, respectively. The D% and E% were 27.70 and 60.70, respectively.

**KEY WORDS:** Entomopathogenic nematode, *Steinernema carpocapsae*, infective juvenile

(Article chronicle – Received: 07.07.2009; Sent for revision: 18.09.2009; Accepted: 15.01.2010)

The entomopathogenic nematodes of Steinernematidae and Heterorhbditidae families are important biocontrol agents for the management of insect pests because of their wide host range and high virulence (Poinar, 1979). Soil samples collected from the field of Lodpa village of Dantiwada tehsil in September 2006 were baited with *Corcyra cephalonica* (Bedding and Akhurst, 1976) and incubated at 27 ± 2°C in a BOD incubator. After one week, the baited *C. cephalonica* from soil sample of Lodpa village (Dantiwada Tehsil) were found dead. The nematode progenies emerging from the cadavers were extracted by White's trap. The infective juveniles (IJs) were tested against *C. cephalonica* by petridish assay and were found effective in killing the host within 48 h. The cadavers turned yellowish brown in colour. The IJs of first generation that oozed out after 3<sup>rd</sup> day from the infected dead larvae were processed through Steinhorst's methodology (Steinhorst, 1959). The processed IJs were mounted in dehydrated glycerin on glass slides and morphometric data of fifteen IJs were recorded.

The IJs were characterized as having L: 571.92 (457.65–645.80) µm; W: 24.25 (20.00–30.00) µm; Exc. Pore: 43.62 (40.50–59.17) µm; Nerve Ring: 91.11 (70-99.) µm; Oesophagus: 130.17 (107.5-154.8) µm; Tail: 52.9 (47.85-60.7) µm; ABW: 15.00 (13-21.8) µm; a: 22.61 (19-24.8); b: 4.5 (4.03-4.9); c: 10.9 (9.31-11.7); D: 27.7

(23.4-34.7) %; E: 60.7 (56.5-71.1) %. The morphometric observations of IJs were in close conformity with *Steinernema carpocapsae* (Weiser) (Homnick *et al.*, 1997). The nematode culture was also identified at NBAIL, Bangalore in 2007 as *S. carpocapsae* (Weiser). The presence of EPNs may be due to favorable conditions like sandy loam soil which favors free pore space for nematode movement and availability of soil dwelling pests like white grub (*Holotrichia* sp.), termites (*Odontotermes* sp.) and cut worms (*Agrotis* sp.) serving as hosts for the entomopathogenic nematodes and their persistency. So entomopathogenic nematodes have a great scope for the effective biological management of soil dwelling pests of North Gujarat area.

## ACKNOWLEDGEMENT

The authors wish to thank Dr. S. S. Hussaini, National Bureau of Agriculturally Important Insects (ICAR), Bangalore, for the identification of entomopathogenic nematode species.

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