Pathogenicity of Entomopathogenic Nematodes, *Heterorhabditis bacteriophora* and *Steinernema carpocapsae* on the Common Earwig, *Forficula auricularia*

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Earwigs include a group of diverse insects with different feeding behaviour like phytophagous, saprophagous as well as predator. Occasionally, some species like common earwig, *Forficula auricularia* L. damage in crowd density, leading to lower seed and flowering of small plants. Given the harmful effects of chemical pesticides on the environment and human health, application of biological control agents is a priority in many pest management programs. Entomopathogenic nematodes are effective biological control against many pests. In order to assay the pathogenicity of the entomopathogenic nematodes, *Heterorhabditis bacteriophora* Poinar, 1975 and *Steinernema carpocapsae* Weiser, 1955 on the common earwig, *Forficula auricularia* L. damage in crowd density, several concentrations including 100, 250, 500, 1000, 1500, 2000 and 3000 (IJs/Earwig) with 40 replication were used in the laboratory condition. The maximum mortality caused by the 3000 IJs/Earwig after 72 hours of treatment. In order to measuring nematode reproductive potential within the earwig body, the concentration of 500 IJs/Earwig in 10 replication was used that the nematode *H. bacteriophora* was reproduced and collected from the earwig body while few adult nematodes of *S. carpocapsae* were collected from three earwig that could not be considered as potential breeding. The average reproductive rate for *H. bacteriophora* was 599.5 IJs/Earwig. The purpose of this study was to identify the possible interaction among earwig - nematode toward addressing about possible pathogenicity of entomopathogenic nematodes like *H. bacteriophora* and *S. carpocapsae* on earwig (non-target species) and earwig. The results of this study showed that both species of nematodes have caused deaths can be in common earwig. The current work presents the first survey dealing with pathogenicity of *H. bacteriophora* on common earwig.

Keywords: earwig, infectivity, entomopathogenic nematode, insect pathogen