Compatibility of entomopathogenic nematodes (Nematoda : Rhabditida) with pesticides and their infectivity against shoot borer (*Conogethes punctiferalis*)

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ABSTRACT: Studies on the compatibility of promising four entomopathogenic nematodes, Heterorhabditis sp. (IISR-EPN 01), Steinernema sp. (IISR-EPN 02), Oscheius gingeri (IISR-EPN 07) and Oscheius sp. (IISR-EPN 08) with insecticides (malathion, chloropyriphos and quinalphos), fungicide (mancozeb) and botanical (neemgold) has been examined and effect of the exposed infective juveniles (IJs) infectivity against shoot borer Conogethes punctiferalis larvae (SBL) was also tested. Results showed that, O. gingeri (IISR-EPN 07) was found more compatible with all tested pesticides followed by Heterorhabditis sp. (IISR-EPN 01) and Steinernema sp. (IISR-EPN 02). However, Oscheius sp. (IISR-EPN 08) was found least compatible with tested pesticides. Among the tested pesticides, maximum mortality of IJs was found in mancozeb, followed by chloropyriphos, whereas less mortality of IJs was recorded in neemgold, which was on par with control. The infectivity of exposed pesticides EPNs was not much affected against SBL as compared to control. Among the tested pesticides, maximum infectivity of EPNs was recorded when exposed with neemgold, followed by chloropyriphos. However, O. gingeri (IISR-EPN 07) infective juveniles found more pathogenic followed by Steinernema sp. (IISR-EPN 02) to SBL. Our study revealed that, tested pesticides had no adverse effect on the activity of IJs. Hence, tested EPNs are compatible with pesticides. Further study on the residual effects of the pesticides in the field, which directly affects the EPNs populations are to be explored.

Key Words: Entomopathogenic nematodes, pesticides, compatibility, shoot borer.