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Integration of bio-agent and botanicals for the management of root-knot nematode, *Meloidogyne incognita* on okra (*Abelmoschus esculentus* L.)

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ABSTRACT : Root-knot nematode, *Meloidogyne incognita* causes severe losses on okra in India as well as in Rajasthan due to favourable environmental conditions. Due to unawareness of farmers and ignorance of nematode management practices, the losses caused by root-knot nematodes increasing day by day due to relay cropping of susceptible vegetables including okra. Looking to it's economic importance and to fulfil the public needs of vegetables, present investigation was undertaken to find out management of root-knot nematode, *M. incognita* infecting okra. Under this experiment, bio-agents *viz., Paecilomyces lilacinus, Pochonia chlamydosporia* and *Pseudomonas fluorescens* were used at 2 per cent w/w as seed treatment along-with leaves powder of *Azadirachta indica , Parthenium hysterophorus* and *Lantana camara* at 4 g/plant as soil application for the management of *M. incognita* on okra. Results exhibited that among bio-agent and plant leaves powder combinations, maximum shoot length (32.48 cm) was obtained with *P. lilacinus* at 2% w/w + neem leaves powder at 4 g/plant, followed by *P. chlamydosporia* 2% + neem leaves powder 4 g/plant and *P. lilacinus* 2% + *Lantana* leaves powder 4 g/plant. *P. chlamydosporia* 2% + neem leaves powder 4 g/plant and *P. lilacinus* 2% + *Lantana* leaves powder 4 g/plant increased shoot length of okra to the tune of 77.87%, 62.76% and 52.57%, respectively. Similar trend was observed with respect to other plant growth parameters (shoot weight, root length and root weight) and nematode reproduction parameters (galls per plant, egg masses per plant, eggs and larvae per egg mass and nematode larvae population per 100 cc soil). The present investigation suggests that bio-agents and plant products may be effectively used in combination to manage infestation of root-knot nematode, *M. incognita* of okra in nematode prone areas.

Key Words: Management, root-knot nematode, *Meloidogyne incognita*, okra, bio-agent, botanicals.