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RESEARCH PAPER

Management of root-knot nematode [*Meloidogyne incognita*] in bhendi under pot culture condition using zero cost inputs

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Abstract : Bhendi scientifically known as Abelmoschus esculentus belongs to family Malvaceae and also known as Ladies Finger, Okra, Bhindi . It is the most important vegetable crop of the tropical and subtropical regions of the world. It belongs to the genus Abelmoschus and family Malvaceae. Okra is a multipurpose crop valued for its tender and delicious pods. In West Africa, leaves, buds, and flowers of okra are also consumed. The dried seeds provide oil, protein, vegetable curd, and a coffee additive or substitute. Okra dry seeds contain 18–20% oil and 20–23% crude protein. Foliage can be used for biomass, and the dried stems serve as a source of paper pulp or fuel. To a limited extent, okra is used in canned, dehydrated, or frozen forms. It has an average nutritive value of 3.21. It is commercially grown in India, Turkey, Iran, West Africa, Yugoslavia, Bangladesh, Afghanistan, Pakistan, West Bengal, Burma, Japan, Malaysia, Brazil, Ghana, Ethiopia, Cyprus, and the southern USA. Chitin has been extracted from various sources like prawn shells, crab shells, egg shells, jack fruit peel, garlic peel and onion peel. The efficacy of chitinase amendments on mortality of active juveniles of Meloidogyne incognita was estimated at various concentrations viz, 100%, 75%, 50% and 25% under three replications of 24 hours, 48 hours and 72 hours and assessment of plant morphometric characters, nematode mortality and root knot index under pot culture conditions.All the six chitinases amendments were tested in vitro to study the nematicidal action on Meloidogyne incognita. In treatment – concentration interaction, the highest nematode mortality (79.65 percent) was observed in Egg shell (100percent) followed by Crab shells (58.16 percent) Similar results were observed in 75, 50 and 25 per cent concentration of the amendments.Among the different chitinases amendments tested, Egg shell showed high degree of nematicidal effect against M. incognita in vitro and the lowest nematode mortality was recorded in onion peel (18.40) at 25 per cent concentration.Among the amendments tested, Egg shell treatment showed significant increase in root length and shoot length (40.22 cm 21.30 cm respectively) and the untreated control plants recorded the least root length and shoot length (19.11 cm and 21.30).All the treatments were found to reduce nematodes population in roots and highest reduction was noticed in egg shell treated plants (189.54 and 161.20) soil (250g) and root(5g) respectively.Significant reduction in root knot index (1.5) were observed in the treatment egg shell and carbofuran which recorded (1.0) per cent. The untreated control plant roots showed root knot index of 5.00 per cent.

Key Words : Bhendi, Root knot nematode, Chitin

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