

Evaluation of Nematicidal Action of Some Botanicals on Plant-Parasitic Nematode

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Abstract : From the back of centuries, plant-parasitic nematodes (PPN) have been recognized as a major threat to agriculturalists globally. It causes 21.3% global food loss annually. The utilization of harmful chemical pesticides to minimize the nematode population may cause acute and delayed health hazards and harmful impacts on human health. In recent years, a variety of plants have been evaluated for their nematicidal properties and efficacy in the management of plant-parasitic nematodes. Several Phyto-nematicides are available, but most of them are incapable of sustainable management of PPN, especially *Meloidogyne* spp. Thus, there is a great need for a new eco-friendly, highly efficient, sustainable control measure for this nematode species. Keeping all these facts and after reviewing the literature, aqueous extract of *Cymbopogon citratus*, *Tagetes erecta*, and *Azadirachta indica* were prepared by adding distilled water (1 g sample mixed with 10ml of water). In vitro studies were conducted to evaluate the efficacious nature of targeted botanicals against PPN *Meloidogyne* spp. The mortality status of PPN was recorded by counting the live and dead individuals after applying 100µl of selected extract. The impact was observed at different time durations, i.e., 24h and 48h. The result showed that the highest 100% mortality was at 48h in all three extracts. Thus, these extracts, with the addition of a suitable shelf-life enhancer, may be exploited in different nematode control programs as an economical, sustainable measure.

Keywords : *Meloidogyne*, *Cymbopogon citratus*, *Tagetes erecta*, *Azadirachta indica*, nematicidal

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