

The effect of hydroalcoholic extracts of *Mentha piperita* L., *Eucalyptus camaldulensis* and *Allium sativum* on biological inhibition of *Pratylenchus loosi* in vitro

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ABSTRACT

In this research, the inhibitory effect of aqueous, ethanolic and methanolic extracts of three medicinal plants including *Mentha piperita* L., *Eucalyptus camaldulensis* and *Allium sativum* on the mortality rate of juveniles and adults of *Pratylenchus loosi* were studied at the Tea Research Center (HSRI, AREEO) of the country. The experiment was carried out as a two level factorial experiments in a completely randomized design with three replications. The first factor was the different concentrations of mint, Eucalyptus and garlic extracts in 5 levels (0, 500, 1000, 1500 and 2000 ppm for mint; 0, 500, 1100, 2300 and 4000 ppm for Eucalyptus and 0, 50, 125, 250 and 500 ppm for garlic) and the second factor included four intervals of 24, 48, 72 and 96 hours. The results analysis of variance showed that there were significant differences between concentrations and time intervals at 1% probability level. Based on the results, the mean comparison of the interactions of concentration × time interval, each of the aqueous, ethanolic and methanolic extracts of mint, Eucalyptus and garlic showed a significant effect on the mortality of larvae and adults, and the results indicated the efficacy of the secondary metabolites in the extracts of these plants on the control of tea root-lesion nematode. The highest mortality rate of juveniles and adults was observed using 500 ppm garlic extract after 96 hours with 93.9 and 90.92%, respectively.

Keywords: Tea, *Pratylenchus loosi*, herbal extracts, Population control percentage.

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