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Embelia Schimperi Extracts Potential to Control Meloidogyne Incognita and Pratylenchus Zeae

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Abstract

Embelia schimperi, a plant belonging to Myrsinaceae family, occurs in the tropical and sub-tropical regions of Africa, eastern Asia, North & South America and Australia. The tree thrives best in zones with an altitude ranging from 1,700–2,800 m above sea level. The tree is one of the medicinal plants used traditionally for treatment of intestinal tape worm, dysmenorrheal, bacterial and fungal infections in humans. Previous research has revealed the presence of phenols, alkaloids, tannins and flavonoids in the tree extracts. In the present study, *Embelia schimperi* stem extracts were prepared using hexane, dichloromethyl and ethanol as solvents. 1g of the extract was dissolved in 10mls of 10 % dimethyl sulphoxide (DMSO) and treated as the stock solution and later screened for egg hatchability potential and nematicidal activity against *Meloidogyne incognita* eggs and *Pratylenchus zae* J2 respectively. The nematode eggs and juveniles were exposed to different concentrations of the extract (25, 50, 75 and 100 %) for 24, 48, 72 and 96hrs in 96 well plates. The sample was stored at room temperature (19) and covered with parafilm. Dimethyl sulphoxide was used for control experiment. Results showed gradual increase in *P. zae* juvenile mortality with increase in extract concentration. Hexane solvent recorded 100 % mortality after 72 hours at 75 % concentration compared to dichloromethane which had 53 % mortality at the same extract concentration. Ethanol solvent reduced *M. incognita* egg hatchability to 23 % compared to dichloromethane (33 %) and hexane (42 %) after 96 hours at 100 % solvent concentration. The results give an insight of *E. schimperi* potential to control plant parasitic nematodes.

Keywords: *Embelia schimperi*, *Meloidogyne incognita*, nematicidal activity, *Pratylenchus zae*