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**Nematicidal activity of *Annona glabra* aqueous plant extract and extracellular metabolites of two *Trichoderma* species on root knot nematode *Meloidogyne incognita***

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The root knot nematode, *Meloidogyne incognita*, is the most widespread and serious nematode pest damaging root systems of a variety of agricultural and ornamental crops in tropical and subtropical countries throughout the world. Management of this nematode species by integrated application of synthetic insecticides and variety of non-chemical methods are suggested but many are not very effective. Even though, mature leaf extraction of *Annona glabra* (pond apple or alligator apple; Family Annonaceae), contains some insecticidal properties, there is no clear evidence of its nematicidal effect. This study was conducted to find the efficacy of aqueous leaf extracts of *A. glabra*, on root knot nematode species, *M. incognita* attacking spinach plants in comparison to the extracellular metabolites of two species of antagonistic fungi, *Trichoderma harzianum* and *T. viride*. Polythene bags were filled with nematode free soil. Single spinach plants having 6 leaves were transplanted into each pots. 10-12 mature adult female nematodes were added to spinach plant pots. These pots were kept outdoor for 2 weeks prior to inoculating the treatments. Above ground growth parameters such as number of total leaves, length of stem, below ground growth parameters such as number of root galls, root length were used to determine nematicidal effect on the nematode infested plants. One-way ANOVA was performed to test whether there is significant difference (95% confidence interval) between each concentrations of treatments. Results revealed that spinach plants treated with *A. glabra* plant aqueous leaf extract showed highest stem length and higher number of leaves compared to the control treatment. Nematicidal effect of *A. glabra* aqueous extract is more effective than *T. viride* but lower than *T. harzianum* when considering above ground plant growth parameters. 125 g/L of *A. glabra* plant aqueous leaf extract and 140 mg/L of fungal mycelium *T. viride* extract and 100 mg/L of *T. harzianum* concentrations showed the highest effect for controlling root knot nematodes. This study concludes that there is a nematicidal activity of *A. glabra* aqueous plant leaf extract even at lowest concentration (100 mg/L) and extracellular metabolites of *T. harzianum* and *T. viride* on *M. incognita*.

**Keywords:** *Annona glabra*, *Meloidogyne incognita*, *Trichoderma* sp.