

INTERACTION BETWEEN ENDOMYCORRHIZAL FUNGUS *GLOMUS FASCICULATUM* AND ROOT-KNOT NEMATODE, *MELOIDOGYNE INCOGNITA* ON *PUERARIA PHASEOLOIDES*

S. Thankamony, R. Kothandaraman, C. Kuruville Jacob, Kochuthresianma Joseph and V.T. Jose
Rubber Research Institute of India, Kottayam – 686 009, Kerala, India.

Submitted: 8 August 2003 Accepted: 30 December 2005

Thankamony, S., Kothandaraman, R., Jacob, C. K., Joseph, K. and Jose, V. T. (2005). Interaction between endomycorrhizal fungus *Glomus fasciculatum* and root-knot nematode, *Meloidogyne incognita* on *Pueraria phaseoloides*. *Natural Rubber Research*, 18 (2): 183-187.

Interactive relationship of the vesicular arbuscular mycorrhizae, *Glomus fasciculatum* and root-knot nematode, *Meloidogyne incognita* on *Pueraria phaseoloides* was studied. Mycorrhizal association enhanced total biomass as well as fresh root weight of plants while the nematode infection reduced them. Mycorrhizal colonization percentage and spore count was more when VAM was inoculated alone or prior to nematode inoculation. The reproduction factor of *M. incognita* decreased in presence of mycorrhizae. The inoculation of VAM induced tolerance in *P. phaseoloides* to *M. incognita*.

Key words: *Meloidogyne incognita*, *Pueraria phaseoloides*, Vesicular arbuscular mycorrhizae.

INTRODUCTION

Vesicular arbuscular mycorrhizae (VAM) and plant parasitic nematodes occur together in the rhizosphere. Both the organisms colonise almost similar root tissues for their growth and reproduction and exert a characteristic but opposite effects on plants. The interaction between VAM fungi and plant parasitic nematodes have been studied by several workers (Suresh and Bagyaraj, 1984; Hussey and Roncadori, 1982 and Saleh and Sikora, 1984). The leguminous cover crops grown in association with rubber, *Hevea brasiliensis* is attacked by root-knot nematode, *Meloidogyne incognita* (Mammen, 1973). Among the different leguminous cover crops used in rubber plantation, *Pueraria phaseoloides* is reported as highly susceptible to *M. incognita* (Thankamony

et al., 1989). Under various environmental conditions, the adverse effects of plant parasitic nematodes were reported to be reduced by the presence of an endomycorrhizal association (Bagyaraj *et al.*, 1979). Rajeswari *et al.*, (1993) reported that the pre-inoculation of mycorrhizae could offset the deleterious effect of nematodes. Earlier studies on cowpea shows that VAM induce tolerance to nematode (Jain and Sethi, 1987). Soyabean plants inoculated with VAM and *M. incognita* had less number of galls per gram of root and increased root weight compared to plants inoculated with nematode alone (Kellam and Schenck, 1980). Reduction in number of galls of *M. incognita* on cowpea roots by prior colonisation of VAM has also been recorded (Jain and Sethi, 1988). The mycorrhizal association is reported to