

INTERACTION OF ROOT-KNOT NEMATODE, MELOIDOGYNE INCOGNITA AND BRADYRHIZOBIUM SP. ON PUERARIA PHASEOLOIDES

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The effect of interaction of root-knot nematode, *Meloidogyne incognita* and *Bradyrhizobium* sp. on growth, nodulation and nitrogen content in *Pueraria phaseoloides*, a cover crop grown in rubber plantations, was studied in a pot-culture experiment by inoculating different inoculum levels of *M. incognita* and *Bradyrhizobium*. Significant reduction in nodulation due to nematode infestation was observed. Maximum gall formation was recorded in plants inoculated with nematode alone. Simultaneous inoculation of *Bradyrhizobium* and nematode or nematode inoculation after 10 days of bacterial inoculation reduced the adverse effect of nematode. Plant growth was increased by 5 to 13 per cent over control. Nitrogen content in the root and shoot of *P. phaseoloides* was considerably reduced by nematode inoculation at different inoculum levels. However, pre-inoculation of *Bradyrhizobium* could increase nitrogen content of the plants.

Keywords: *Bradyrhizobium*, Interaction, *Meloidogyne incognita*, *Pueraria phaseoloides*.

INTRODUCTION

Natural rubber (*Hevea brasiliensis*) is an important plantation crop in India. A number of agricultural practices have been introduced to improve the production of natural rubber. Establishment of leguminous cover crops in the initial stages of cultivation is an important agronomic practice adopted in rubber plantations (Chin, 1977). Leguminous cover crops enrich soil with nitrogen, prevent soil erosion, reduce soil temperature, augment organic carbon in soil and support soil microbial activity (Purnoose *et al.*, 1994). All these beneficial effects of cover crop help

in increasing the growth rate and yield of *H. brasiliensis*. Among the various cover crops used in rubber plantations, *Pueraria phaseoloides* is the most popular one in India and elsewhere (Potty *et al.*, 1980). Several biotic and abiotic factors are reported to influence the growth, nodulation and nitrogen fixation in *P. phaseoloides*. Among them, an important biotic factor is the infection by the root-knot nematode, *Meloidogyne incognita* (Mammen, 1973).

The root-knot nematode, *M. incognita* has caused significant changes in growth, nodulation, nitrogen fixation and