

# Selection of Medicinal Plants to Suppress Occurrence of *Meloidogyne hapla* in *Codonopsis lanceolata*

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Medicinal plants of 90 species were surveyed to see if they have any suppressive effects on the density of root-knot nematodes at the exhibition field in the Chinan medicinal herbs experiment station. In 70 species including *Achyranthes japonica*, root-knot and/or egg sac of root-knot nematode was not found and these plants were planted in *C. lanceolata* field to check the degree of root-knot nematode infection. In 26 species including *A. japonica*, root-knot nematode infection was not observed. Simultaneously, 30 species were planted in pots to find out degree of infection by *M. hapla*. *Lithospermum erythrorhizon*, *Dianthus chinensis*, *Rudbeckia bicolor*, *Sedum kantschaticum*, *Ricinus communis*, *Anemarrhena asphodeloides*, *Malva verticillata*, *Chelidonium majus*, *Sesamum indicum*, *Agrimonia pilosa*, *Geum aleppicum*, *Sanguisorba officinalis* and *Scrophularia buergeriana* were free from infection.

Possible nematicidal effects of plant extracts of 25 species uninfected by *M. hapla* were observed at the 5× dilutions in all treatments and at the 10× dilutions in *A. asphodeloides*, *A. calamus*, *A. japonica*, *A. pilosa*, *D. chinensis*, *G. aleppicum*, *H. cordata*, *R. bicolor*, *R. communis*, *S. buergeriana*, *S. indicum*, *S. kantschaticum*, and *S. officinalis*.

The 13 species plant extracts of 5× dilutions were evaluated for the suppression effects on reducing densities of *M. hapla* by treating to *C. lanceolata* sown and transplanted later in pots. All the plant extracts showed suppressive effects on *M. hapla* except for *A. pilosa*.

In a plot test, all 12 plant species showed over 80% suppressive effects on *M. hapla* except for *A. pilosa*.

When the selected plants had been incorporated into the soil before *C. lanceolata* was sown, the numbers of root galls, egg sacs and J<sub>2</sub> appeared lower in the treatment of 12 plant species than in control except for *S. indicum*. But the suppressive effects were lower than the effects of selected plants being cultivated simultaneously in the field. *A. calamus* and *A. japonica* exhibited over 70% suppressive effects, among the tested plants.