

## Resistance to the South African Root-Knot Nematode Population Densities in *Artemisia annua*: An Anti-Malaria Ethnomedicinal Plant

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**Abstract :** Nematode resistance to the tropical root-knot (*Meloidogyne* species) nematodes is one of the most preferred nematode management strategies in development of smallholder resource-poor farming systems. Due to its pharmacological and ethnomedicinal applications, *Artemisia annua* is one of the underutilised crops that have attracted attention of policy-makers in rural agrarian development in South Africa. However, the successful introduction of this crop in smallholder resource-poor farming systems could be upset by the widespread aggressive *Meloidogyne* species, which have limited management options. The objective of this study therefore was to determine the degree of nematode resistance to the South African *M. incognita* and *M. javanica* population densities on *A. annua* seedlings. Uniform three-week-old seedlings in pots containing pasteurised growing medium under greenhouse conditions were inoculated using a series of eggs and second-stage juveniles of two *Meloidogyne* species in separate trials. At 56 days after inoculation, treatments were highly significant on reproductive factor (RF) for *M. incognita* and *M. javanica* on *A. annua*, contributing 87 and 89% in total treatment variation of the variables, respectively. At all levels of inoculation, RF values for *M. incognita* (0.17-0.79) and *M. javanica* (0.02-0.29) were below unity, without any noticeable root galls. Infection of *A. annua* by both *Meloidogyne* species had no significant effects on growth variables. In conclusion, *A. annua* seedlings are resistant to the South African *M. incognita* and *M. javanica* population densities and could therefore be explored further for use in smallholder resource-poor farming systems.

**Keywords :** ethnomedicinal plants, medicinal plants, underutilised crops, plant parasitic nematodes

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