

# DIVERSITY AND DISTRIBUTION OF PLANT PARASITIC NEMATODES OF *PHASEOLUS VULGARIS* L. AND IMPACT OF SELECTED NEMATODE MANAGEMENT STRATEGIES

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A study to determine the distribution and population densities of plant parasitic nematodes associated with beans was undertaken in Kakamega, Kiambu and Siaya districts of Kenya. *Meloidogyne spp.* and *Pratylenchus spp.* were the most predominant endoparasites, occurring in 86 and 61% of the root samples respectively. *Scutellonema* and *Helicotylenchus* species were recovered in 86 and 59% of the soil samples respectively. Field experiments were conducted to determine the efficacy of organic amendments in the control (chicken manure, compost, neem baobab and farm yard manure) of root-knot nematodes. The amendments showed varying levels of nematode suppression with chicken manure being rated as the most effective while sisal wastes were least effective. Application of commonly used organic amendments (chicken and cow manures, *Mucuna pruriens*, *Tagetes minuta* and *Azadirachta indica*), in soil fertility management were found to stimulate build-up of the nematode destroying fungus, *Verticillium clamydosporium*, and *Bacillus Spp.* in the soil. The potential of different *Bacillus* isolates in reducing infection by root-knot nematodes in beans was investigated using Leonard jars under greenhouse conditions. The isolates had varying effect with the majority (93%) of the isolates causing a reduction in root galling when compared to the control (water). Twelve percent of the isolates were more effective than carbofuran (nematicide). In another greenhouse experiment investigating the interaction between *Bacillus spp.* and *Rhizobium* strains inoculations using N-free sterile sand, 4 out of the 20 *Bacillus* isolates significantly promoted nodulation in bean plants.