

Abstract

Green manure plants were evaluated to determine their suitability as rotation crops with common bean to suppress root-knot (*Meloidogyne* spp.) nematodes. They were also evaluated as soil amendments in nematode control. The plants were *Calliandra calothyrsus*, *Canavalia ensiformis*, *Chenopodium quinoa*, *Crotalaria juncea*, *Desmodium uncinatum*, *Gliricidia sepium*, *Leucaena leucocephala*, *Mucuna pruriens*, *Tephrosia purpurea*, *Tithonia diversifolia*, *Vicia villosa*, *Sesbania sesban* and *Tagetes minuta*. In the glasshouse, pots were filled with steam-sterilized soil and sown with green manure plants. The rotation experiment entailed growing green manure plants for three months before uprooting them and planting beans in the same pots. The potting medium was infested with 6000 eggs/juveniles of *Meloidogyne javanica*. The field experiments were carried out in microplots infested with a mixture of *M. javanica* and *M. incognita*. Damage to bean roots due to root-knot nematodes was based on galling indices while nematode reproductive potential was based on egg mass index. *Tithonia diversifolia*, *D. uncinatum*, *T. minuta*, *L. leucocephala* and *C. juncea* were among the most effective in root-knot nematode suppression when used in rotation with beans. Their galling indices ranged between 1.0 and 1.5 under field conditions and were thus considered resistant. *Vicia villosa*, *T. purpurea* and *S. sesban* were susceptible with galling indices ranging between 6.2 and 7.7. The resistant plants reduced the reproductive potential of *Meloidogyne* spp. by up to 80% while the susceptible plants caused an increase of up to 600%. Therefore, *T. diversifolia*, *D. uncinatum*, *T. minuta*, *L. leucocephala* and *C. juncea* can be recommended for use in fields infested with root-knot nematodes.