Evaluation of legume intercrops on the population dynamics and damage level of burrowing nematode (Radopholus similis) in banana (Musa spp.)

James Chitamba,Pepukai Manjeru,Cleopas C. Chinheya &Maxwell Handiseni

Abstract

Radopholus similis is the most destructive plant parasitic nematode in banana production systems. A glasshouse experiment was carried out to evaluate the effect of legume intercrops on R. similis population and damage level in banana. A trial was laid out in a randomised complete block design with five treatments and five replications. The treatments were banana/cowpea (Vigna unguiculata) intercrop, banana/sunn hemp (Crotalaria juncea) intercrop, sole banana, sole banana with nematicide (Fenamiphos) and sole cowpea. Sunn hemp intercrop was suppressing R. similis population densities and reduced banana root damage the most compared to tested treatments. The legume intercropped banana plants had a significantly higher fresh root mass as the sole-cropped banana with nematicide while the sole-cropped banana without nematicide had significantly lowest fresh root mass. Sunn hemp and cowpea legumes are recommended for adoption by smallholder banana farmers as alternatives to nematicide use.