

ABSTRACT

Frequent detection of galls on coffee roots has raised concerns of nematodes in coffee production systems in Kenya. This study aimed at determining the occurrence of nematodes associated with coffee in Kenya and the role of crop management, cultivars, soil properties and agro ecological zones on the abundance and frequency of nematodes. A survey was conducted in the prime coffee growing areas in 10 counties namely; Machakos, Makueni, Kiambu, Embu, Kirinyanga, Nyeri, Meru, Kisii, Nandi and Trans-Nzoia. Nematodes were extracted using a combination of centrifugal floatation and Modified Baermann techniques and identified to genera level. Nutrient analysis was carried out using the Double Mehlich method. Results showed that nematodes belonging to 30 genera were recovered from coffee agro-ecosystems. Plant parasitic nematodes were the most prevalent with 64% frequency (19 genera) of occurrence followed by bacterial feeders at 24%. The genus *Tylenchulus*, *Meloidogyne* and *Pratylenchus* were the most dominant across all the coffee growing areas. Coffee farms in the coffee-tea zones (Upper Midland 1) harbored the highest numbers of plant parasitic nematodes, followed by Upper Midland 2 and least in the marginal coffee growing zones (Upper Midland 3). Well managed farms had less plant parasitic nematodes compared to neglected farms. K and P significantly contributed to the variation in the nematode community composition. This study demonstrated the prevalence of plant parasitic nematodes, factors that influence their abundance and distribution and justifies need for further management of nematodes in coffee production. Key words: Abundance, agro-ecological zones, diversity, nematode genera, nutrients