

Control of banana nematodes (*Radopholus similis*) using intercrop

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Accepted : November, 2006

ABSTRACT

An experiment was conducted at K.R.C. College of Horticulture, Arabhavi, University of Agricultural Sciences, Dharwad. The experiment results revealed that, the treatment pared suckers dipped in 0.1125% Acephate for 60 min + sunhemp incorporated 90 DAP effectively reduced the nematodes population from the soil as well as roots. The highest yield (26.58 t/ha) was recorded in the treatment of pared suckers dipped in 0.1125% acephate for 60 min + sunhemp incorporated 90 DAP followed by carbofuran 1.25 g ai/plant (25.61 t/ha) and pared suckers dipped in 0.1125% acephate for 60 min + marigold tops incorporated 90 DAP (22.54 t/ha). The cost benefit ratio was highest in the treatment of pared suckers dipped in 0.1125% acephate for 60 min + sunhemp incorporated 90 DAP (1:4.65).

Key words: Banana, *Radopholus Similies*, Intercrop, Rajapuri, *Musa*.

Banana is one of the major commercial fruit crops, ranking first in fruit production in the world. Banana is known to adopt very quickly and produce higher yield, under favorable environmental conditions. The crop is affected by several disease caused by fungi, bacteria, viruses, nematodes and biotic factors. Among these, nematode constitutes one of the major limiting factors for banana production causing extensive root damage resulting in serious economic losses. It was reported that, crop losses caused by nematodes in banana are very high, with an average annual yield loss of about 20 percent world wide, (Sesser and Freckman, 1987). The burrowing nematode (*Radopholus similis*) has a wide geographical distribution and is notorious for causing root rot of banana growing regions of the world. Its occurrence in Kerala in banana roots causing severe yellowing of leaves and rotting of roots has been reported by Nair et al., (1966). Hence, the present investigation was undertaken for alternate and cost effective method of nematode management with growing of intercrops, which have nematicidal effect.

MATERIALS AND METHOD

An experiment was carried out during 2002-2005 at K.R.C. College of Horticulture, Arabhavi, UAS, Dharwad. There were six treatments viz.,

- T1- Unpared suckers
- T2- Pared suckers + dip in 0.1125% Acephate for 60 min.
- T3- Treatment 2+ sunhemp incorporated 90 DAP

- T4- Treatment 2+ cowpea incorporated DAP
- T5- Treatment 2+ marigold tops incorporated 90 DAP
- T6- Carbofuran 1.25 g ai/plant

Each treatment was replicated four times in a randomized block design with a spacing of 1.8 x 1.8 m. The cultivar Rajapuri (*Musa AAB*) which is susceptible was used for study. Crop received recommended dose of fertilizer (Anon, 2004). Observations were recorded with respect to nematodes population at different stages of plant growth, yield parameters and economics. Intercrops were grown 45 days after planting and incorporated 45 days after sowing.

RESULTS AND DISCUSSION

In first season crop, the experimental results revealed that, the treatment carbofuran 1.25 g ai/ plant was effectively reduced the nematodes population (52.00/200 cc soil) followed by pared suckers dipped in 0.1125% Acephate for 60 min + sunhemp incorporated 90 days after planting (61.50/200 cc soil). The nematodes population was maximum in unpared suckers (224.50/200 cc soil). While In second season crop, the treatment T₂ + sunhemp incorporated 90DAP recorded the lowest nematodes population of 53.75/200 cc soil but this treatment was at par with carbofuran 1.25 g ai/ plant (Table 1).

At 120 days after planting, the treatment carbofuran 1.25 g ai/plant effectively reduced the nematodes population (92.50//200 cc soil) followed by T₂ + sunhemp incorporated 90 days after planting (107.50//200 cc soil) and T₂+ sunhemp incorporated 90 DAP. While in second season crop, the treatment T₂+ sunhemp incorporated 90DAP effectively controlled the nematodes population (61//200 cc soil) followed by carbofuran 1.25 g ai/plant