



Original Article



A Slow wilt of Pepper

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ABSTRACT:

Burrowing nematode, *Radopholus similis* is considered as the important plant parasitic nematode in pepper. The entire foliage eventually turned yellow; the leaves had a faint yellow or yellowish colour.

Loss of leaves, a halt to growth, and indications of a dieback . After three to five years of yellowing symptoms, the vines die and all of their leaves are destroyed. Thus, the condition is referred to as "slow wilt.". The nematode also interacts with the fungal pathogens, *F. solani* and caused the slow wilt or pepper yellow disease. Cultural, chemical and biological methods were employed to manage the slow wilt disease of pepper. Soil application of *Pochonia chlamydasporia* at the rate of 5.14 kg /vine reduced the nematode population.

Keywords: Die back, *Radopholus similis*, slow wilt, management

INTRODUCTION

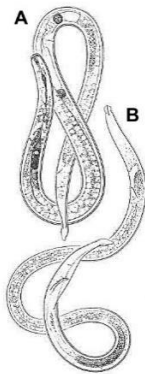
Pepper is considered as the "King of spices". It is scientifically called as *Piper nigrum*, Piperaceae. In India it is mostly cultivated in the regions of Kerala. Several abiotic and biotic factors are responsible to cause an economic damage in pepper. Plant parasitic nematodes like Burrowing nematode, *Radopholus similis* and Root knot nematode, *Meloidogyne incognita* are the important one in pepper.

Burrowing nematode, *R. similis*:

The "slow wilt disease or Pepper yellows "of pepper is caused by *R. similis* in Kerala and Karnataka (Mohandas and Ramana, 1987; Ramana *et al.*,1987) and it caused a 59% of yield losses in pepper (Mohandas and Ramana , 1991).

Symptoms:

- Leaves showed a pale yellow or whitish yellow in color.
- The entire foliage was gradually turned in to yellow color.
- Shedding of leaves, arresting of growth and also showed a die back symptoms.
- During the depletion of soil moisture, the symptoms were prominently developed.
- All the leaves are shredded and death of vines take place on 3-5 years of yellowing symptoms. So, it is called as "slow wilt" disease.
- Orange to purple color lesions developed on white color feeder roots.
- Excess rooting and lacks the feeder roots from the main roots.
- Necrosis developed on larger lateral roots.



Life cycle:

It completed the life cycle of about 25 -30 days at 21 -31 degree Celsius. With the help of carrot disc culture, the nematode culture was mass multiplied.

Host range:

Coconut, arecanut, banana, ginger, turmeric and cardamom considered as the suitable hosts for *R. similis*.

Interaction with other pathogens:

It also interacts with the root pathogenic fungus, *Fusarium solani* and it caused a severe root damage.

Management:

Cultural methods:

- Use of healthy planting material.
- Mulching with Guatemala grass reduced the symptoms of slow wilt.
- Application of organic amendments such as neem cake 200g, green foliage 3 or 5 kg and FYM 1 kg per vine.
- Earthing up on September –October month.
- NPK recommendation: 400 Kg N, 180 Kg P, 480 Kg K effectively reduce the symptoms.

Chemical method:

- Application of carbofuran 3g ai/vine during May-June and Sep-October.
- Aldicarb sulfonate at 8Kg ai/ha gave the best result to reduce the *R. similis* population.

Biological method:

- Soil application of *Pochonia chlamydosporia* at the rate of 5.14 kg /vine reduced the nematode population.

CONCLUSION:

Nematodes, plant parasitic nematodes, are the main cause of pepper's slow decline. Nematicides, biological agents, and healthy planting material were utilised in combination to manage the aforementioned issue.

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