

b. NEMAHARI

Preparation: For one acre, mix 16 kg *Nemahari* with 160 kg FYM or compost

Method of application: Make 15 cm deep trenches near to root zone. Apply *Nemahari* mixture, cover with soil and irrigate immediately.

- Under moderate RKN infection of less than 50 galls per plant, two applications per year (70-80 days after first application).
- Under severe RKN infection of more than 50 galls per plant, three applications per year at 70-80 days interval.



For Nemahari Product Contact :

Rainbow Agrilife India Pvt. Ltd.
Putlampally, Kadapa – 516003
Andhra Pradesh.
Contact No. : 9848477199, 9703814879

4. Chemical method

- Drenching of infected plant with two litres of 0.1% Fluopyrum 34.48% SC solution, (Velum Prime® 1 ml/liter of water) manually or through drip irrigation method.
- Repeat the application during next crop if root knot nematode infestation is severe.
- **Safety period: 15 days**



Velum prime treatment before After

Arunakumar GS, Nisarga NR, Sowbhagya P, Bhavya MR, Mahibha Helen S, Raghunath MK and Mary Joshepha (Shery) AV

For further details Contact:

DIRECTOR
Central sericultural Research & Training Institute
Central Silk Board, Min. of Textiles
Govt. of India, Srirampura, Mysuru - 570 008

www.csrtimys.res.in csrtimys@gmail.com
f csrtimys t csrtimys i csrtimysore

Integrated Root Knot Nematode Management Practices in Mulberry



Central Sericultural Research & Training Institute
Central Silk Board, Min. of Textiles
Govt. of India, Srirampura
Mysuru-570 008

Root-knot nematodes (RKN; *Meloidogyne incognita*) are notorious to cause root galls, leading to severe yield loss in mulberry. RKN management is very difficult due to its wider host range and presence of different races. The disease is widespread throughout the year and more prevalent in sandy soils under irrigated gardens. The RKN causes leaf yield loss up to 20% in addition to deterioration of leaf quality. Association of root-knot nematode with root rot disease caused by various fungal pathogens form a root disease complex further leads to uprooting of mulberry gardens. Therefore, it is advised to take up integrated root knot nematode management practices.

Symptoms

- The severely infected plant shows stunted growth, marginal chlorosis, necrosis and curling of leaves, formation of galls in the roots and reduced vigour of plants.



Chlorosis symptoms on leaves as compared to healthy plant and galling of roots in the nematode infested plants

- Infected plants lose their ability to absorb moisture and nutrients results in reduced metabolic function which leads to deterioration in leaf quality and quantity which intern results in silkworm crop loss.

Integrated RKN Management

1. Physical method

Soil solarization: It is a practice used to manage diseases, weeds, nematodes and insects in soil. The soil surface is covered with transparent plastic mulching sheets, which allows sunlight to pass through and heat the soil.

Steps: Plough the field at 30 cm deep Irrigate the field Mulch the soil surface with transparent plastic sheets (0.04/0.06 mm) Seal all sides by covering the edges of the plastic sheets with soil Keep the plastic in place for 10-15 days.

2. Cultural methods

- The land should be deep ploughed and exposed to the hot sun rays to kill the pathogens in soil.
- Raising of saplings in the root knot nematode free areas to check the spread of disease from nursery to healthy field.
- Uprooting of infected plants and burning.
- Apply organic manures sufficiently to increase soil organic carbon (>0.6%).
- Application of neem oil cakes @ 800 kg/acre/year in two split doses.



- Intercropping with marigold, sun hemp and niger.

3. Biological methods

a. Bio-agent *Trichoderma viride*

- Mix 1 kg of commercially available *T. viride* with 50 kg of FYM and sprinkle water to maintain moisture in the mixture.
- Make a heap under shade and cover the heap with gunny cloth or plant leaves.
- After 4 days, mix the heap properly and sprinkle water if required.
- After 8 days, with the multiplication of *T. viride*, the mixture is ready for application in 1:50 ratio which is sufficient for 100 plants (500 g/plant).
- Apply the bio-mixture at a depth of 15 cm and maintain sufficient field moisture by irrigating the field/plant.

