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AfricaRice
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Rice root knot nematodes (*Meloidogyne graminicola*)

Factsheets for Rice Production, East Africa

Biology

- Rice root knot nematode is a serious pest of rice in light-textured soils and irrigated upland
- It is well adapted to flooded conditions and can survive in waterlogged soil for long periods
- Spreads through contaminated soil, farm tools, machinery and run-off water
- Its development is favored by 27-30 °C, soil moisture of >40 % and pH of 5 to 7

Geographical Distribution

- In Kenya it can be found in (Ahero, Bunyala, Kirinyaga, Kisumu, Kilifi, and Kwale counties), Tanzania (Morogoro, Kilimanjaro, Arusha, Mbeya, Moshi) and Uganda (lake Kioga, Buguri, butalenja and lira districts).



Fig 1. Root infested with nematodes
Source: <http://agritech.tnau.ac.in>

Damage on rice crop

- Causes damage in nurseries, field and reduces number of tillers and forms root galls
- New leaves appear distorted, crinkled along margins
- Uniform yellowing or chlorosis of leaves
- Heavily infected plants flower and mature early, fruit become malformed and drop
- Causes sparse foliage exposing fruits to sunburn damage
- Reduces root systems and death of plant
- It causes economic yield loss in upland and lowland rice. Estimated reduction in upland rice is 2.6% in grain yield in young seedlings.



Fig 2. Knots on rice roots
Source: irri.org



Fig 3. Root knot infected rice field
Source: www.infonet-biovision.org

Management Practices

1. Cultural control

- Plant clean certified seedlings from reliable source (KALRO) in flooded soils.
- Practice crop rotation for 2 years.
- Avoid moving nematode infested soil into clean areas.
- Clean farm tools and machinery of soil using water.
- Remove weeds as they serve as alternative hosts.
- Destroy old plant debris by burning soon after harvest.

2. Chemical control

- Apply soil fumigants such as Basamid Granular or Vapam before planting.
- Drench using nematicides such as Vydate (5 litres/ha), Nemasol (10 litres/ha), Achook 8.1 litres/ha or Rootgard.
- Drench using Azadirachtin (e.g., Neem cake, Nematon, Nimbecidine) at the rate of 600 ml/20l in the nursery and at tillering stage.

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