

## Rice white tip nematode (*Aphelenchoides besseyi*)

### Factsheets for Rice Production, East Africa

#### Biology

- This foliar nematode is ectoparasitic that feeds on leaves and young rice tissues.
- It is seed-borne and can survive in a dormant state for several years on stored grain, but much less under field.
- The life cycle takes 8 days at 23°C.
- It is common in areas with temperature range of 23°C to 30°C.
- It is spread by movement of infested soils, seeds, weeds and rice debris.

#### Geographical Distribution

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

#### Damage on rice crop

- The conspicuous symptoms occur at tillering stage.
- They feed at leaf tips of rice resulting in whitening of the top leaf, leading to necrosis known as "White Tip".
- Leaf tips turn white with a yellow area between healthy and diseased tissue with white areas on leaf edges.
- Diseased plants are stunted, lack vigor and produce small panicles.
- There is distortion of flag leaf that encloses the panicle.
- Affected panicles show high sterility, distorted glumes and small and distorted kernels.
- In infected seed-bed, emergency is delayed and germination is low.



Fig 1. Rice white tip nematodes (Agribusiness Information Portal)



Fig 2. White and necrotic tips ( www.forestryimages.org)



Fig 3. White tips on rice leaves (www.regione.piemonte)



Fig 4. Twisted and crinkled tips ( www.forestryimages.org)

#### Management Strategies

##### 1. Cultural Control

- Plant clean certified seed/seedlings from reliable source (KALRO) in flooded soils.
- Practice crop rotation for 2 years
- Avoid moving nematode infested soil to clean areas
- Clean farm tools and machinery of soil using water
- Treat seed with hot water at 52-53°C for 15 minutes.
- Pre-soak in water overnight and sun dry for at least 6 hrs/day for 2-3 days prior to sowing.
- Remove weeds as they serve as alternative hosts
- Destroy plant debris or infected plants by burning after harvest.

##### 2. Chemical control

- Treat seeds with Seed Plus 30WS (Imidacloprid 10%; Metalaxyl 10%; Carbendazim 10%).
- Spray the crop with Azadirachtin (e.g., Achook EC, Neem cake, Nematon, Nimbecidine) at the rate of 600 ml/20 L in the nursery and at tillering stage