Striga (*Striga hermonthica*) in upland rice

Factsheets for Rice Production, East Africa

Description

- Striga (also called witch weed) is a broad-leafed parasitic weed known for its unique purple flowers.
- The weed thrives in areas with annual rainfall below 1000 mm pa and in low fertility soils.
- The weed produces 90,000-500,000 seeds in one season; which can remain dormant in the soil or in plant debris for 14 years.
- The seeds are spread by wind, water and animal vectors, and also through human activities (machinery, tools and clothing).
- Under favorable conditions, the weed attacks a variety of crops, including rice, sorghum, pearl millet, finger millet, maize and cowpea.
- It grows in close contact with rice within 2-3 weeks of emergence of the crop.

Distribution

- Striga is common under upland rice production systems of Kenya (Coast, Western and Nyanza regions); Tanzania (Shyinyanga, Mbeya, Mwanza and Dodoma); and Uganda (Iganga, Soroti, Kumi, Tororo and Pallisa in Eastern and Gulu and Lira in Northern region).

Crop damage and associated loss

- The weed competes with crops for water and soil nutrients, and it also harbors disease causing organisms.
- Striga attaches itself to the host plant and feeds using structures called haustoria.
- The penetration causes root damage, which deprives the crop of nutrients and water.
- The attacked rice crop shows yellow blotches (0.5-1 cm long) on the leaves.
- Later, the leaves curl and appear water-stressed.
- Attacked young rice plants appear stunted and eventually wilt.
- Witch weed can cause up to 100% yield loss

Fig 1. Witch weed in rice plants

Management Strategies

1. Cultural Control

- Use certified seed to prevent spread of Striga in rice fields.
- Adoption of deep ploughing to expose Striga seed to the surface for subsequent control using herbicides or rouging once they germinate.
- Enhance optimal soil fertility by timely application of the recommended rates of fertilizers (refer to Water and Nutrient Management Factsheet). Manure could be applied as a substitute for synthetic fertilizers.
- Drought should be managed through adoption of alternate wetting and drying method of irrigation.
- Avoid movement of livestock in Striga infested fields, to minimize dispersing the weed.
- Uproot and burn Striga plants found in the rice fields.
- Plant varieties such as NERICAS 1,2,9,10, and 17 which are tolerant to Striga.

2. Biological control

- Trap crops such as Napier grass or Desmodium can be planted off season to enhance germination and subsequent suicide of Striga seedlings.

4. Chemical control

- Plant seed coated with herbicide IMAZAPYR at the rate of 30–45 g/ha.

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