

Control vectors of Maize Lethal Necrotic Disease

Recognize the problem

Maize Lethal Necrosis Disease (MLND) is a viral maize disease. Leaves of infected plants become yellow from the tip and margins to the centre. Older leaves (bottom of plant) remain green. Ears and leaves dry up and sometimes look like a mature plant. The whole plant dies and maize cobs remain without kernels. MLND symptoms can be confused with symptoms of nutrient deficiency but plants affected by MLND appear only in some areas and are scattered or clumped in a field while nutrient deficiency appears on many plants over large areas of a field.

Background

MLND often causes total crop loss and there are no chemical sprays against the disease. MLND is transported by insects such as aphids which are roundish, soft, green or black with or without small transparent wings, and planthoppers which look like tiny cicadas. These insects, which are known as disease vectors, transmit MLND when they feed on infected maize and then fly to feed on other maize fields. The disease is more prevalent in the hot season, when vector populations are high. The control of vectors using contact or systemic chemicals can prevent disease transmission. Systemic pesticides are recommended against aphids and planthoppers. These chemicals penetrate the plant and are taken up by the insects when they suck sap from the plant.

Management

- Start to observe your field 2 weeks after maize emergence
- When 5 to 10 plants become infected per acre, or when the disease is detected in neighbouring farms, uproot diseased plants immediately, and consider chemical sprays against whiteflies or aphids
- Apply malathion products such as Mupathion 50EC, Magic 50EC, Severe 50
- All of these are toxic to you (toxicity class III = slightly hazardous)
- The dosage depends on the products. It is usually 20-30ml per 20 litre of water but double-check with product label
- Do not spray 14 days or less before harvest, and do not enter the field during the 3 days after spraying. Spray a maximum of twice/season.
- Use thiamethoxam products such as Actara 25WG, Tromethoxam 25WG. They are also toxic (class III = slightly hazardous).
- Do not spray 3 days or less before harvest. Do not enter the field for 1 day after spray. Spray maximum twice/season in 7 day intervals.
- Spray early morning when insects are inactive and still on the leaves
- Spray under the leaves and on the growing tips
- Do not re-use chemical containers/ packets. Dispose of them safely.

Maize dying from maize lethal necrotic disease. (Photo by Stefan Toepfer)



< 2mm aphids that carry the disease. (Photo by Stefan Toepfer)



When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval.

Scientific name(s) > *Aphid spp.*, *Bemisia spp.*

The recommendations in this factsheet are relevant to: Tanzania



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