

12 steps for control of MLN disease in farmers' fields

What is MLN disease?

- **Maize Lethal Necrosis (MLN) disease is a viral disease that affects maize**
- **MLN disease is caused by the co-infection of Maize Chlorotic Mottle Virus (MCMV) and any of the following viruses; Sugarcane Mosaic Virus (SCMV), Maize Dwarf Mosaic Virus (MDMV) and Wheat streak mosaic virus (WSMV).**
- **In Africa, the disease was first reported in Kenya in September 2011, and later in Tanzania, Uganda, Rwanda, Democratic Republic of Congo, South Sudan and Ethiopia by 2014.**
- **MLN disease is a major challenge in maize production and is considered a threat to food security in Africa because it causes yield losses of up to 100 per cent.**

Symptoms of MLN disease and Transmission Modes

MLN disease symptoms include:



Severe damage of leaves
Severely infected corn leaves may wilt, curl, and show yellow patches of discoloration. Scientists refer to this as severe chlorosis and leaf necrosis.

Sterility of tassels - no pollen production.



Poor or no grain filling on cobs.

Premature drying of husks



Short internodes (part of a plant where leaves emerge)

Dead heart symptoms - withering and drying of central shoot.



How is MLN disease transmitted?

Insects can host and transmit MLN virus (Insect Vectors). Some of these insects include thrips, aphids, leaf beetles and rootworms.



Thrips



Aphids

MLN disease is also seed-borne (i.e. seed produced from an infected plant may carry the virus).



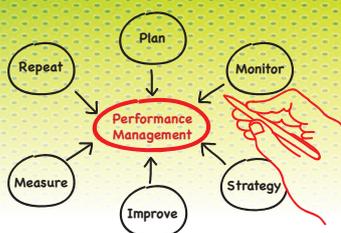
Animal, people, farm machinery or farm tools can also spread MLN viruses through movements in infected fields.



How can farmers prevent spread of MLN disease?

Farmers can avoid the transmission by following 12-steps

1. Find out the cropping or disease history of the field before planting. Practice crop rotation where necessary.



8. Monitor the field every week for presence of insect vector population. A high insect vector population increases chances of attack.



2. Make sure the soil in the farm is fertile at all times. This ensures crops are healthy thus can fight disease infections.



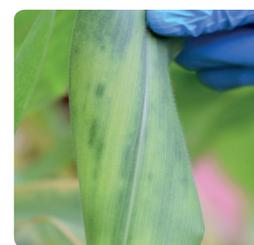
9. Remember chemical control of insect vectors can be done using recommended insecticides (Once every 1-2 weeks).



3. Use certified seed that is free of MLN disease.



10. Try to search weekly for MLN viral symptoms for early detection and control of insect vector.



4. Avoid using grains as seed.



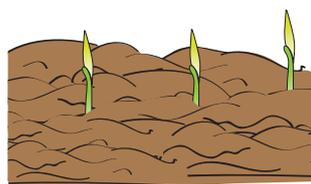
11. Uproot MLN symptomatic plants and destroy them through burning and burying outside the farm to reduce spread of disease. Do not feed infected plants to livestock- animals such as cattle grazing in MLN infected plants can transmit the viruses from infected MLN plots to healthy maize fields.



5. Clean farm equipment or tools using disinfectants before and after use to eliminate MLN virus contamination.



6. Plant early at the onset of rains.



7. Maintain a clean farm by removing grasses, weeds and other alternative hosts from fields.



12. Practice crop rotation for at least one season by growing non-cereal crops preferably legumes (beans, soya and peas). Avoid continuous cropping of maize ensuring a closed maize season of at least 2 months where possible.

