The Maize Lethal Necrosis disease is a new devastating maize disease. It is caused by two viruses namely Maize Chlorotic Mottle virus (MCMV) and the sugar cane mosaic virus (SCMV), which combine to attack the maize crop.

The double infection of MCMV and SCMV or any of the cereal viruses like Maize dwarf mosaic virus or Wheat streak mosaic virus gives rise to what is known as maize lethal necrosis disease (MLND).

These two viruses have been in existence, due to climatic changes and other natural calamities forcing the two to meet and co-infect the crop together making it more disastrous.

The disease presents with loss of green colour in the leaves. Later the leaves and entire plant dries up. Other symptoms include stunted growth, premature drying of cobs, shrivelled cobs and failure in cob development. Once the plant has been attacked, the disease is capable of causing up to 100% yield loss in the affected plant. The disease spreads faster all over the field if the virus is not managed in time.

Presence of the disease in Uganda

In the year 2011, a strange disease, Maize Lethal Necrosis was cited in farmer's fields in Western province of Kenya and it quickly spread to Tanzania and Eastern Uganda in the districts of Busia, Sironko, Kapchorwa, Bulambuli, Manafwa, Bukedea and Mbale.

Since then, scientists in East Africa, mainly Kenya and Uganda, embarked on a number of strategies to curb the disease from farmers' fields.

In Uganda the Ministry of Agriculture, Animal Industry and Fisheries in collaboration with scientists from the National Agriculture Research Organisation and development partners such as Food and Agriculture Organisation (FAO) are putting mechanisms in place to ensure the disease is controlled.

The Assistant Commissioner in charge of Crop Protection Ministry of Agriculture, Mr Stephen Byantwale explains that since the disease was detected in farmer's fields in Eastern Uganda, the ministry officials in collaboration with scientists from NARO carried out a survey and thereafter conducted sensitization with Agricultural district officials from the affected districts on how to advise farmers to use basic methods to control the disease.

Impact

Dr Geoffrey Asea, head of the cereals programme at the National Crop Resources Research Institute (now director, NaCRRI), explains that MLD could turn out to be a major challenge for farmers growing maize in East Africa if measures are not taken. Early planting should be encouraged since pests tend to move from older to younger plants.

Previously observations in Uganda showed that MLND infections were severe in farmer fields where maize was planted late causing up to 100% loss. Therefore, farmers are advised to plant maize at the onset of the main rainy seasons and not during the short rain periods. This creates a break in planting seasons and reduces the populations of pests that spread MLND.

The disease does not only cause loss to farmers but the entire agricultural value chain can be affected e.g. poultry and livestock such as cattle, piggery and aqua fisheries which depend on maize bran as feed.

According to Mr Byantwale, Uganda produces 2 million metric tons of maize per annum and so if the disease is not controlled, the production rate may reduce drastically yet maize is one of the staple food and cash crop of the country.

FAO support to MLN management in Uganda

National efforts to raise awareness on the dangers of the disease and its control in Uganda were boosted by the Food and Agriculture Organization (FAO) through a technical cooperation project on management and control of Maize Lethal Necrosis in Eastern Africa.

The Assistant FAO Representative in charge of Programmes, Mr. Charles Owach, support was centred on facilitating MAADF in the coordination of national institutions, sharing of knowledge and experiences among national players and with other countries, regional and global institutions, capacity building of national and local government technical personnel and undertaking surveillance trips to districts to assess the occurrence and extent of spread of the disease in targeted districts in the country.

Specific achievements included:

- Production and distribution of information materials. These included fact sheets on MLN – identification, mechanisms of its spread and control measures. Articles on MLN were also produced in a magazine with thousands of copies widely distributed to the public and targeted institutions.
- Public education through radio was an integral part of the project in reaching out to the public.

Formulation of the national strategy for MLN management in Uganda as well as development of training manual for use in undertaking training on MLN identification and management was supported. The formulation of the national strategy and training manual was undertaken with participation of various national actors in the maize value chain- maize researchers, academics, extension personnel at national and local government level, seed companies etc.

Preparation of the training has been concluded while the national strategy is undergoing review and subsequently endorsement by relevant structures in MAAF.

The project also facilitated training of extension personnel and maize seed industry actors. About 100 extension personnel were trained and these were to extend the training to other extension staff and farmers in their respective districts.

Surveillance missions targeting some districts in the country were facilitated in view of monitoring the status of the disease within districts where the disease was reported and in other districts that were viewed as having the high risk of the disease getting introduced to them.

In collaboration with NaCRRRI, on farm demonstrations have been set up in five districts that had recorded high disease incidence among selected farmers that have constituted learning fields for targeted farmers/comunities to learn the recommended practices for the management of MLN.

To support laboratory tests for MLN presence/absence on maize samples obtained from farmers' fields, assorted laboratory kits (ELISA kits) have been procured for use at the National Agriculture Research Laboratories (NARL).