Project Brief

CIMMYT MR
International Maize and Wheat Improvement Center

Diagnostics and management of MAIZE LETHAL NECROSIS

The International Maize and Wheat Improvement Center (CIMMYT) is leading collective efforts to control the spread of Maize Lethal Necrosis (MLN) disease that appeared in eastern Africa in 2011 and is considered the worst threat to the region's food security in decades. Initiated in 2015 with support from the United States Agency for International Development (USAID), the MLN Diagnostics and Prevention of Seed Transmission project is pulling together national, regional and international partners to prevent the spread of MLN-causing Maize Chlorotic Mottle Virus (MCMV), support seed companies to produce MCMV-free commercial seed, spread improved farming practices for disease control and create a 'community of practice' for disease diagnosis and management.

The project works primarily in the eastern Africa nations of Ethiopia, Kenya, Rwanda, Tanzania and Uganda where the disease is presently prevalent; and at the same time strengthens MLN surveillance and monitoring in Malawi, Zambia and Zimbabwe, three of the major commercial maize seed exporting countries in sub-Saharan Africa.

Use of immunostrips to detect Maize Chlorotic Mottle Virus in green leaf tissues.

Our Work

The project aims to coordinate regional efforts to strengthen the response to the rapid emergence and spread of MLN in sub-Saharan Africa. Its activities will result in:

- an effective MLN surveillance and monitoring system,
- an established community of practice comprising seed companies and national plant protection organizations,
- harmonized protocols for detecting MLN-causing viruses in commercial seed lots,
- a model for voluntary, private sector driven MLN/MCMV containment,
- the development of appropriate diagnostic and management strategies.

Activity Areas

Prevention of the spread of MCMV

An effective surveillance and monitoring system will be established in MLN endemic countries (Ethiopia, Kenya, Rwanda, Tanzania, Uganda) and key non-endemic countries that produce and exchange commercial seed (Malawi, Zambia, Zimbabwe). In addition, the project strengthens the diagnostic capacity of the National Plant Protection Organizations (NPPOs) and sets up a community of practice among NPPOs, researchers, seed producers and national/regional seed trade organizations to exchange knowledge and expertise across the target countries.

Production and promotion of MCMV-free seed

Seed companies will be supported to produce and supply MCMV-free commercial seed throughout the certified seed value chain through enhanced capacity and rigorous monitoring to ensure they maintain disease-free breeder seed stock. The project will ensure that seed planted by targeted seed companies is disease-free at every stage, right up to certified seed getting to the farmers, through use of MLN-free seed checklists and Standard Operating Procedures developed by stakeholders.

A critical focus of the project is to support commercial seed companies to

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Project Duration:

October 2015 - September 2019

Budget:

$4 million

Key Partners:

Alliance for a Green Revolution in Africa (AGRA)

African Agricultural Technology Foundation (AATF)

National Plant Protection Organizations (NPPOs)

Regional organizations: East Africa Community (EAC), Alliance for Commodity Trade in East and Southern Africa (ACTESA)

Seed trade organizations

Commercial seed companies

Advanced research institutions

Activity Locations:

A plant health inspector at Zambia Agriculture Research Institute collects leaf samples to test for MCMV in a practical session during the MLN surveillance and diagnostic workshop held in Harare, Zimbabwe.

Achievement Snapshots

The MLN Phytosanitary Community of Practice was established with membership from seed traders' associations, NPPOs, seed companies, the East Africa Community, national agricultural research systems, international agricultural research institutions, donor agencies, ministries of agriculture, and national seed quality institutions.

Surveillance protocols for MLN surveillance have been developed, distributed and used by NPPOs.

Optimized immunostrips diagnostics for MCMV are in place and being used by NPPOs' surveillance teams across the target countries.

MLN surveillance activities in major maize growing areas and seed production fields conducted in non-endemic countries of Malawi, Zambia and Zimbabwe, and have been rolled out in the endemic countries of EthiopiaKenya, Tanzania and Uganda.

Checklists for MLN-free seed production developed for Ethiopia, Kenya, Rwanda, Tanzania and Uganda through stakeholders' consultative meetings.

An information portal on MLN was launched, providing an important knowledge hub for researchers, seed companies, farmers, media, etc.

International Maize and Wheat Improvement Center (CIMMYT)

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