BASICS
BUILDING AN ECONOMICALLY SUSTAINABLE, INTEGRATED CASSAVA SEED SYSTEM

CGIAR RESEARCH PROGRAM ON Roots, Tubers and Bananas

Preventing seed-borne entry and spread of viral diseases of cassava in Nigeria

Introduction

Seed certification and quarantine must be central to a nations biosecurity capacity, protecting farmers from pests and diseases. Cassava is of critical importance to many Eastern and Western African countries, providing food security and income. Over the past decades two viral diseases, Cassava Mosaic Disease (CMD) and Cassava Brown Streak Disease (CBSD) have significantly reduced yield and quality. Whereas CMD is endemic to both East and West Africa, currently CBSD is limited to East Africa. Both diseases are seed-borne (in cut-stems); seed presents the main pathway of spread and a main point-of-control.

Characteristics of cassava viruses

Cassava Mosaic Disease (CMD)

- Causal agent: Cassava mosaic geminiviruses (CMGs)
- Symptoms: Clear to see leaf deformation and plant stunting
- Control: Tolerant or resistant varieties developed and distributed
- Spread: Local and distant spread in seed (cut stem) of all varieties (tolerant and susceptible); local spread also by whitefly

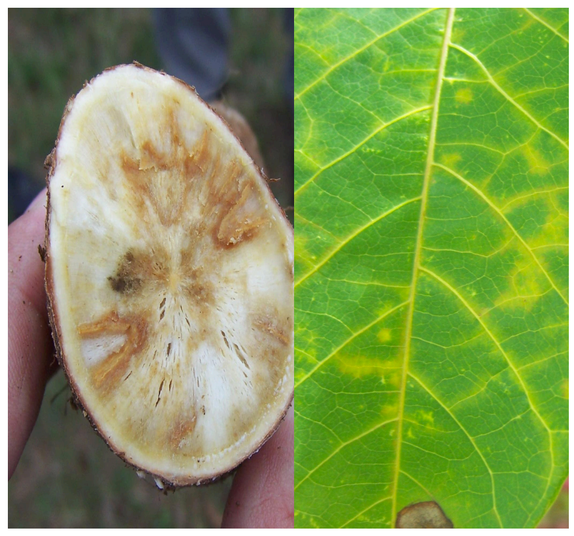
Cassava Brown Streak Disease

- Causal agent: Cassava brown streak virus and Uganda Cassava brown streak virus
- Symptoms: leaf mottling and root rot; leaf symptoms often hard to see and diagnose
- Control: Varieties vary in susceptibility, but no tolerant or resistant varieties; mainly husbandry
- Spread: Local and distant spread in seed (cut stem) of all varieties (tolerant and susceptible); local spread also by whitefly

Recommendations on importance of a seed system

- Seed (stem cuttings) present the main risk from CMD and CBSD viruses
- The highest levels of quarantine should be applied to CBSD viruses to prevent entry
- Seed certification allows for management of CMD and surveillance for CBSD
- Molecular diagnostics is essential for the accurate and sensitive detection of CMD and CBSD viruses

Cassava Mosaic Disease



Cassava Brown Streak Disease

Delivery Partners

NASC ...ushering in quality seeds · NRCRI UMUDIKE · CRS faith. action. results. · fera · IITA Transforming African Agriculture · CONTEXT GLOBAL DEVELOPMENT