



Food and Agriculture Organization
of the United Nations



Efforts of FAO and the Global programme on Prevention of Banana Fusarium Wilt Disease (Foc TR4)

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Banana: Not only a beautiful fruit !

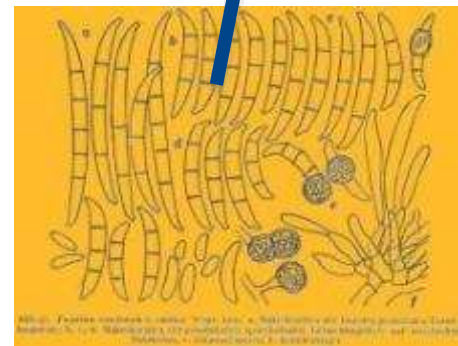
- The most exported fruit globally
- Fifth most produced food crop in LDCs
 - Production: 139 million tons (36.000 billion USD)
 - Exportation: 16 million tonnes (7 billion USD)
 - 400 million people derive food or livelihoods
- An important crop in Asia, Africa and Latin America & Caribbean
 - Staple food
 - Small holder producers
 - Workers
 - Industry – revenue for countries



The disease: Fusarium wilt

Fusarium oxysporum f.sp. *cubense* – Tropical race 4 (Foc TR4)

- Soil borne
- Spread:
 - Infected planting materials
 - Soil particles / spores (tools, vehicles, shoes, water..)
- Challenges:
 - Chemicals: No eradication
 - Resistance: Breeding difficult
 - Agronomy: Practical limitations
 - Cropping systems: Monocultures more vulnerable



Engagement of FAO

Nampula,
Mozambique
(2014)

Relevance to FAO`s mandate

Strategic Objectives:

- **SO 2:** Sustainable production intensification
- **SO 5:** Increase resilience of livelihoods to threats & crises



Emergency Prevention System (EMPRES)

Emergency prevention support to countries in agriculture and food related areas

- **Food Chain Crisis Management Framework:**
 - Plant Protection: Transboundary plant pests and diseases
 - Prevention
 - Monitoring, surveillance and early warning
 - Preparedness and planning
 - Rapid response

World Banana Forum

WG1: Sustainable Production Systems and Environmental Impact

- Promoting dialogue & collaboration
- Joint global efforts to prevent the spread in Latin America and the Caribbean
- Awareness raising and events

International Plant Protection Convention

- International standards and regulatory support
- Pest risk analysis
- Capacity building, Prevention

IGG on Tropical Crops

Activities

- Advocacy at global level:
 - News releases
 - Events in Rome (CCP, IPPC)
- Consultations and dialogue
 - WBF task force meetings
 - African Consortium on Foc TR4 strategy for Africa (Cape Town workshop)
 - Events in Philippines (INREF, BAPNET)
- Awareness raising in regions



Central America and Caribbean

Regional workshop: Prevention and diagnostics of Fusarium Wilt (Trinidad and Tobago, 2014)

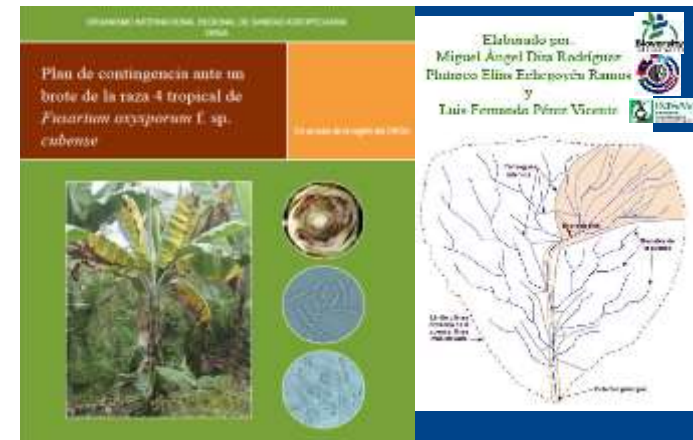
- Sensitisation
- Surveillance and Diagnosis
- Capacity building
- Contingency plans
- Regional collaboration
- Promotion of the contingency plan developed by OIRSA

FINAL REPORT

Regional Sensitization Seminar and Workshop on the
Prevention And Diagnostic of Fusarium Wilt (Panama
Disease) of Bananas and Plantains Caused by *Fusarium
oxysporum* f. sp. *cubense* – Tropical Race 4
Trinidad and Tobago
27 April - 10 May, 2014

Consultants / Facilitators:

Dr. Luis Perez-Vicente, INISAV, Ministry of Agriculture, Cuba
Dr. Miguel A. Dita, EMBRAPA, Brazil
Mr. Einar Martinez de la Parte, INISAV, Ministry of Agriculture, Cuba



Central America and Caribbean

Workshops

- Preventing the introduction of Fusarium TR4 (Guayaquil, Ecuador - October 2014).
- Awareness raising: Guatemala - August 2015

Assessment:

- Preliminary assessment of the situation regarding FOC RT4 in LAC and its possible impacts on production, marketing and Food Security. FAO-RLC, 2016 (includes information on regional and national initiatives - WBF).

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Africa:

African Consortium on Foc TR4

Development of a strategy to address the
threat of Foc TR4 in Africa

22-23 April, 2014

Stellenbosch, South Africa



Africa:

Incorporation into ongoing work



- **Eastern Africa:**
 - Kigali Workshop:
 - The regional platform approach to be continued ...
 - Particularly Banana Xanthomonas Wilt (BXW), Banana Bunchy Top Virus Disease (BBTV), Banana **Fusarium wilt (Foc TR4)** are considered as immediate threats.

- **Southern Africa:**
 - Strengthening control of food safety threats, plant and animal pests and diseases for agricultural productivity and trade (AFSTF): Updated to include Foc TR4

Emergency support to Mozambique

Awareness raising



FUSARIOSE DA BANANEIRA TR4 O QUE É?

Urgent Notice:
Protect Mozambique bananas against Foc TR4



Capacity building



Containment

MINISTÉRIO DA AGRICULTURA E SEGURANÇA ALIMENTAR
DIRECÇÃO NACIONAL AGRICULTURA E SILVICULTURA

Mozambique affected by the destructive Panama disease of banana

Panama disease, caused by the fungus *Fusarium oxysporum* f. sp. *cubense* (Foc) tropical race 4 (TR4), is a devastating banana disease that causes losses up to 100% if not contained. This disease occurs in countries such as Australia, China, Taiwan, Philippines, Indonesia, Malaysia, Oman, Jordan, Pakistan and now Mozambique. In Mozambique the disease was identified near Monapo in the Nampula province in September 2013, and in the Chitane district in the Cabo Delgado province in 2014. Containment measures are being implemented by the affected companies in cooperation with the Ministry of Agriculture and Food Security and its partners. Mozambique is the first country in Africa that reported Foc TR4. Without intervention, it is feared that the fungus can decimate bananas in Africa, as in Mozambique. The Panama disease fungus is soil-borne and spread with propagation as suckers and seedlings, soil from infested fields, irrigation water, the movement of vehicles inside infested fields, and agricultural implements used during land preparation. The TR4 at the affected farms and prevent its introduction into disease-free areas (the agriculture and Food Security announces that it:

- It is forbidden to move plants and seedlings from affected banana farms in the Monapo and Chitane districts of the Nampula and Cabo Delgado provinces, respectively, to unaffected areas, to ensure Foc TR4 containment in the affected areas and prevent its dissemination to disease-free areas.
- It is forbidden to move banana plants and seedlings from the Nampula and Cabo Delgado provinces to the rest of the country to protect the banana industry and ensure food security of families who depend on this crop in the country.
- It is forbidden to move soil and other substrate used to grow seedlings from infested to disease-free areas of the country. This statement comes into force immediately.

Anyone who visits the areas infected by the disease must ensure the disinfection of shoes, boots or other materials that you used in the field and should not visit other banana production fields to avoid possible introduction of the disease with soil particles.

Any additional information may be requested to the nearest Agricultural Services.
O Director Nacional
Maputo, Outubro de 2015

Emergency Support to Mozambique

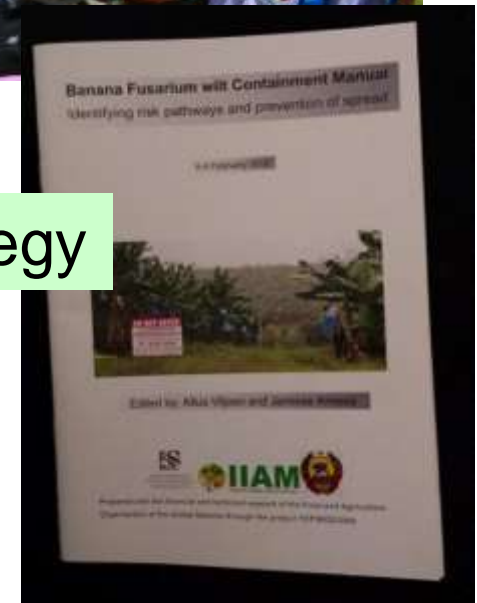
Surveillance



Training



National strategy



Emergency Support to Mozambique

Nampula - Mozambique



International consultation

19-20 December 2014, Rome



International consultation:

- Discussed status, challenges and prospects regarding management and prevention of the disease in different regions
- Provided guidance for FAO`s engagement
- Recommended development and implementation of a global programme
 - A policy and technical guide and a draft programme was developed

Global Programme on prevention of Foc TR4

Outcome: International collaboration and synergy

Outcome: Prevention

- Policy support, awareness and contingency planning
- Surveillance, early warning and response
- Regulations and phytosanitary measures

Outcome: Preparedness and disease management

- Capacity building
- Management: Research, resistance, agronomy

Outcome 1. Improved **prevention** of spread of Foc TR4 into banana-growing countries and regions

OUTPUT 1

Policies and strategies improved and awareness level enhanced at all levels for improved prevention

1.1. **Advocacy** and awareness-raising among decision makers and farmer communities

1.2. Strengthen national crop and disease management **strategies** and plans

1.3. Support coordination among stakeholders through participatory processes for development and implementation of **contingency**

OUTPUT 2

Surveillance, early detection and monitoring approaches and systems improved

2.1 Provide policy and technical support for **national and regional surveillance** and monitoring mechanisms

2.2 Strengthening national and regional disease **surveillance and diagnostic capacities**

2.3 **Conduct** national and regional surveys for Foc TR4 in affected countries and high-risk areas

OUTPUT 3

Risks assessed, and plant health-related legislation and **phytosanitary** practices enhanced

3.1. **Map** the distribution and assess the potential impact of Fusarium wilt disease to global banana production

3.2. **Assess** the status of national phytosanitary legislation and identify needs for improvement

3.3. Improve and **introduce** legislation for the movement of disease-free planting materials

3.4. Support government efforts to **implement** effective plant health legislation and phytosanitary standards

Outcome 2. Improved **preparedness** and integrated **management** of Foc TR4 at field level

Outcome 3. Enhanced Int. synergy and **collaboration**

OUTPUT 4

Capacities strengthened for improved preparedness and prevention

OUTPUT 5

Integrated **management** strategies improved and implemented to reduce disease impact and pathogen spread

OUTPUT 6

Regional and international interaction, **collaboration** and information sharing enhanced

- 4.1. **Support** national authorities to develop, implement and sustain practices that prevent introduction of Foc TR4 onto farms
- 4.2. Strengthen **human resources** capacity of national institutions in disease prevention and management
- 4.3. Introduce Foc TR4 **training** programmes for **farmers** and farm workers in prevention and management of Foc,
- 4.4. Strengthening of **infrastructure** of national institutions in disease surveillance, prevention and management

- 5.1. Identify, select and disseminate Foc TR4-**resistant** banana varieties
- 5.2. **Promote** the use of Foc TR4-resistant bananas in collaboration with national programmes through seed campaigns and field demonstrations
- 5.3. Promote **integrated disease management** practices to prevent spread and limit damage caused by Foc TR4 to banana plantations

- 6.1. Organize national and **regional conferences**, technical workshops and meetings
- 6.2. Promote international collaboration and networking to manage Foc TR4 **globally**
- 6.3. Support technical **field studies** and consultations for management of Foc TR4 at field level
- 6.4. **Facilitate knowledge sharing** and dissemination

Prioritised actions



- Already present
- At high risk
- At risk

Prevention

- Awareness raising
- Preparedness
- Contingency planning
- Regulations
- Risk assessments
- Seed system support

Preparedness and response

- Risk assessments
- Contingency planning
- Seed system support
- Resistant / tolerant varieties
- Research and surveillance
- Regulations

Management

- Resistant / tolerant varieties
- Seed production support
- Research
- Agronomic practices
- Cropping system regulations

Approach and principles:

- Joint efforts with internal units / teams & decentralized offices
- Collaboration with international partners
- **Principles:**
 - Avoid duplication and complement existing efforts
 - Promote synergies among the existing initiatives & institutions
 - Consultative, transparent and inclusive process
 - Support regional and local actions to empower smallholders
 - Differentiated priorities and strategies based on
 - production systems
 - Geographies and risk levels

Partnerships :

- Open ended
- Public private partnerships
- South – South cooperation

- International organizations / institutions / initiatives – CGIAR centers key
- International and regional networks
- Regional Plant Protection Organizations (RPPO)
- Universities
- National Institutions
- Private sector, producers and NGOs

Implementation:

Steering (Advocacy, Monitoring ...)

- FAO
- CGIAR centers (Bioversity International, IITA)
- African Consortium on Foc TR4
- Asia regional representation
- Latin America and Caribbean Regional representation
- World Banana Forum

Advisory (Advise on technical aspects):

- Collaborating institutions
- Participating country representatives/ focal points

Administration: FAO - Rome

Thank you



**Workshop on Fusarium wilt TR4 in Mozambique – Closure of the project TCP/MOZ/3504 (E)
(Seasons hotel, 17-19 May 2016, Nampula, Mozambique)**