Status of Fusarium wilt and management strategies in Latin America and Caribbean

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Technical Consultation
“Prevention and management of Fusarium wilt disease of banana”
FAO, Rome, 9-10 December, 2014
Musa cropped surface and population under threat in case of extreme events in LA & C.

Total Surface: 1,228,971.00
Persons directly affected: 12,289,710.00
2 persons/ha – 5 family members

Data: FAOStat, 2013
Banana and plantain production in the Antilles

Caribbean (2010) produce:

✓ 2.11% of world *Musa* production

✓ 2.21 % of Cavendish world production
  
  → Produce 1’159,183 tm. and export 583,177 tm. (50.3 %)

✓ 4.78 % of world plantain production (AAB)
  
  → Produce 952,344 tm. and export 7,616 tm. (8.04 %)

Hence:

✓ Banana and plantain production are important in terms:
  
  → Economical [contribute to the Internal Net Country Income and are cash crop]

  → Food Security; provide food (only 50% is exported)

  → Have deep social and cultural roots
Current banana industry is a ‘Cavendish’ ocean

Banana the most important commercialized fruit. The world market:

- 35 countries
- 17 millions of Tm.
- >7,000 millions of dollars

Banana production in French Islands of Martinique and Guadeloupe (Dita et al. 2013; Data FAOStat, Lescot 2010).
EXPORT BANANA IN ECUADOR – SOME FIGURES

NUMBER FARMERS
- Small (0 - 5 Ha)
- Small ( + 5 - 10 Ha)
- Small ( + 10 - 20 Ha)
- Small ( + 20 - 30 Ha)
- Small ( + 30 - 50 Ha)
- Medium (+50 - 100 Ha)
- Big (+ 100 Ha)

People/ha (2 m/ha *5 Fam.memb)
- 634163
- 197552.1
- 237603.2
- 176759.8
- 287496.6
- 442719.2
- 13091.41

Total : 57.170,00

Total : 1.989.385.31

SOURCE: BANANA UNIT- MAGAP
## Main banana cultivars in LAC vs. Foc TR4

<table>
<thead>
<tr>
<th>Genome/Subgroup</th>
<th>Cultivars</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Sucriér, Oro, Orito, Bocadillo, Lady’s Finger, Ciento en Boca, Datil.</td>
</tr>
<tr>
<td>AAA/ Cavendish</td>
<td>Grand nain, Robusta, Giant Cavendish Valery, Williams, Lacatan, Dwarf Cavendish, Red, Green red.</td>
</tr>
<tr>
<td>AAA/ Gros Michel</td>
<td>Gros Michel, Johnson, (Seda, Guineo), Cocos.</td>
</tr>
<tr>
<td>AAB/ Silk / Prata</td>
<td>Manzano (Apple)/ Prata, Prata Ana, Pome</td>
</tr>
<tr>
<td><strong>AAB/ Plantains</strong></td>
<td>Horn ¾; Hembra ¾; Hartón, Dominico, Harton, Curaré, Ingüiri, CEMSA ¾, Cuerno dwarf, Bellaco, Dwarf plantain, Red Plantain</td>
</tr>
<tr>
<td>ABB/ Bluggoe</td>
<td>Bluggoe, Burro criollo, Cuadrado, Cuatro filos, Cachaco, Fongo, Burro CEMSA, Chato.</td>
</tr>
<tr>
<td>ABB/ Pisang awak</td>
<td>Pisang awak (Burro Vietnamita en Cuba), Fougamou, Burro Cenizo, Isla, etc.</td>
</tr>
</tbody>
</table>

Almost 100 % of cvs are susceptible to TR4
Foc: Latin American and the Caribbean

LAC already has problems with FOC and it is just increasing

Banana varieties and Fusarium wilt incidence in San Luis de Shuaro, Peru - Roman et al (2012)

Brazil: Mostly in Prata-type varieties
Gros Michel in intercropping with coffee

Subtropical race 4 in Cavendish Brazil
Fusarium wilt of banana: Global distribution
Possible scenarios for global spreading

This MAP is only a tentative approximation of the distribution of Foc to be used for academic purposes. It is not based on any scientific studies and should not be used by authorities for decision making purposes.
RECOMENDACIONES PARA PREVENIR LA ENTRADA DE ENFERMEDADES CUARENTENARIAS DE ALTA IMPORTANCIA ECONÓMICA PARA BANANO Y PIÑA.

Dirigidas a: Empleados de las compañías fruteras, representantes de compañías de agroquímicos, inspectores de Compañías Certificadoras, representantes de ONG’s, y cualquier otro visitante a plantaciones de banano en el Sur Este Asiático, y plantaciones de piña en Sur América.

RECOMENDATIONS TO PREVENT THE ENTRANCE OF QUARANTINE PLANT DISEASES OF MAJOR ECONOMIC IMPORTANCE FOR BANANA AND PINEAPPLE

Aimed at: Employees of the major fruit producing and processing companies, representatives of agrochemical companies and NGOs, certification inspectors, and any other visitor to banana plantations in South East Asia and pineapple plantations in South America.

RECOMMANDATIONS POUR PRÉVENIR L’ENTRÉE DE MALADIES DE QUARANTAINE DE GRANDE IMPORTANCE ÉCONOMIQUE POUR LES BANANIERS ET L’ANANAS.

Strengthening capacities and increasing preparedness for Foc TR4 in LAC

Bioversity, MUSALAC & National Plant Protection Organizations

PRI, INISAV

Trained

In the pipeline

English & French
West Indies
Surinamre
Multipliers: a logical step for capacity building
Contingency plan for Foc TR4

- A regional template for National Contingency Plans
- Free-online knowledge source for LAC
SUGGESTED ACTIONS TO PREVENT INTRODUCTION AND ESTABLISHMENT OF FUSARIUM WILT TROPICAL RACE 4

1. Prohibition of import of banana plants other than certified as virus, bacteria and fungi-free (tissue-culture indexed plants from trusted sources).

2. Develop of an Emergency/Contingency Plans against an eventual incursion of Foc TR4 following the guidelines of the technical document developed by OIRSA, Bioversity International and INISAV.

3. Develop of a survey of Panama disease risky areas based on cultivars and Foc R1/R2 current presence.

4. Capacity building with extension phytosanitary officials and growers on symptoms identification, sampling, storage, transport and mailing samples.
5. Create brochures for extension officers and growers with disease description and main steps to follow in a case of an incursion

6. Development of low cost disease-free seed programs accessible to growers

7. Developing of tailored technical and legal regulations.

8. Development of biosecurity programs at farms gate levels

9. Distribution of advertising brochures among visitors to countries with presence of Foc TR4
GROS MICHEL

Pisang awak

APPLE

THANKS!!

Burro CEMSA, Bluggoe

Prata Ana