SURVEY FOR THE PRESENCE OF FROSTY POD ROT IN TRINIDAD AND TOBAGO

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INTRODUCTION

Frosty pod rot (FPR) of cocoa, causal agent, *Moniliophthora roreri*, is one of the most devastating diseases of cocoa. It is estimated that in the absence of control efforts the disease reduces crop yield by up to 80%. The most commonly practiced control measure is based on early detection and removal of infected pods.

Trinidad is home to one of the world's most diverse collection of cocoa germplasm, which is hosted at the International Cocoa Gene Bank. It is also recognized as the producer of the highest quality world renowned 'fine flavoured cocoa'. Cocoa provides a source of income for many farmers. Thus if this disease enters the country it will significantly impact on the cocoa industry.

At present the disease is in Central and South America and in particular the western part of neighbouring Venezuela and continues to spread rapidly in this part of the world (Fig. 1).

Figure 1. Map showing distribution of frosty pod rot **(infected areas shown in red).**

Thus it is vital that management strategies such as continued monitoring and surveillance systems for early detection and rapid response be developed to ensure that it does not reach Trinidad and Tobago.

The Ministry of Food Production, Land and Marine Affairs (MFPLMA) is currently implementing a UNEP –GEF project aimed at developing and implementing strategies to prevent the introduction of the disease to Trinidad & Tobago and implement management and control measures if it is detected. One of the strategies include surveying for frosty pod rot.

MATERIALS AND METHODS

- Cocoa farms to be surveyed for FPR during the period November-December 2010, were selected at random from a list of cocoa and coffee farmers in Trinidad and Tobago supplied by the Cocoa and Coffee Industry Board (CCIB).
- Thirty farms from each of the 6 counties (St. George East, St. George West, Nariva / Mayaro, St Andrew / St David, Caroni, Victoria,) were chosen while 15 farms were selected in Tobago and 60 farms were selected from St. Patrick county since this was identified as a likely point through which the disease can enter.
- On each farm 20 plants were examined for the presence of the disease (Figures 2 and 3), the farmer interviewed (Figure 4) and the information recorded on a field data sheet . Farmers were given a copy of "Pest Alert on Frosty Pod Rot" prepared by MFPLMA and was shown pictures of FPR, witches' broom and black pod symptoms Figure 5).
- Pods which were suspected to contain the disease were collected and sent to the Plant Pathology laboratory at Centeno for analysis and verification.

Figure 2. Pod showing extensive internal pod rot and breakdown of seeds due to *Moniliophthora roreri*.

Figure 3. Pod covered with external fungal growth of *Moniliophthora roreri*

Figure 4. Survey personnel interviewing cocoa farmer in Biche, Trinidad

RESULTS

During the period November-December 2010, 225 farms were surveyed for FPR. Farm sizes ranged from < 1 hectare to >5 hectares. Management techniques ranged from minimal weed control to the use of herbicides.

The farms surveyed were mapped using Garmin GPSMAP® 60CSx hand held unit and collated into a map of Trinidad and Tobago (Figure 6).

Symptoms of FPR were not found.

Analysis of the data collected indicated that FPR is not present in Trinidad and Tobago.

All samples brought to the laboratory were negative for FPR.

Other diseases found on the farms surveyed were witches' broom, causal agent, *Moniliophthora* (*Crinipellis*) *perniciosa and* black pod caused by *Phytophthora palmivora.*

RECOMMENDATIONS

- Surveillance for FPR should be an ongoing exercise when pods are on the trees during the wet season.
- Continuous training on FPR disease recognition, identification and reporting for staff from MFPLMA and CCIB.
- Cocoa farmer should be trained in the recognition and reporting of the disease.
- Intensify the public awareness exercise in areas where the disease is most likely to enter the country such as the south western peninsula in Trinidad. Mechanisms should be put in place to restrict the possible entry of the disease into the country.

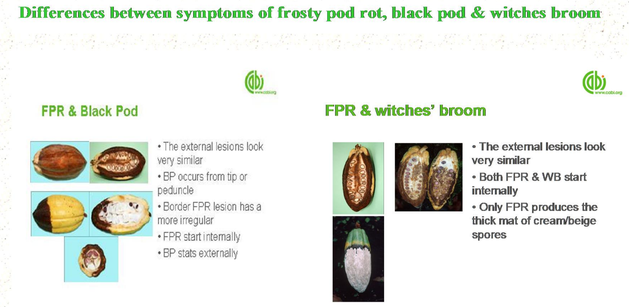

Figure 5: Plates showing differences between FPR, Black Pod and Witches broom

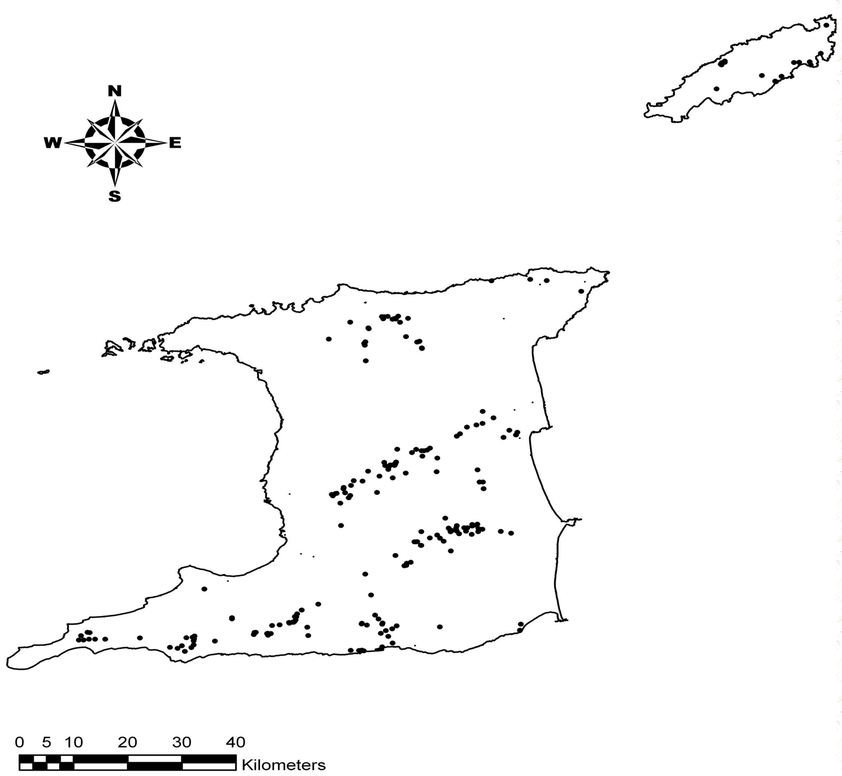

Figure 6: Map showing Farms surveyed for the presence of FPR in Trinidad & Tobago

REFERENCES

- 2007 Edition. Crop Protection Compendium. CAB International.
- 2010 Frosty Pod Rot - A Training Manual. Ministry of Food Production, Land and Marine Affairs, Central Experiment Station ,Centeno 13pp.

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