



## Introduction

Hi everybody. The project has been very eventful in this first half of 2012. The most visible events were the coordination meeting held in Vila Clara (Cuba) at the beginning of December 2011 and the missions to Cuba and the Dominican Republic by our intrepid CIRAD investigator, Aurore Cavalier. All the details can be found in this issue, along with other information on or around the project. Happy reading!

## Second coordination meeting, Villa Clara, 11-12 December 2011

The project coordination meeting was held at the Los Caneyes Hotel in Villa Clara, Cuba, from 11 to 12 December 2011. It was attended by 16 people. A one-day indoor meeting was followed by a day of visits to IBP and INIVIT. In addition to taking stock of the progress made in the project, the meeting offered the opportunity to strengthen cohesion between the partners. Each organization taking part in the project sent at least one representative.



**The participants at the 2<sup>nd</sup> project coordination meeting strike a pose**

1st row (from left to right): T. Lescot, A.-L. Echemendia, A. Cavalier, L. Miniere, D. Renfigo, R.-T. Martinez, O. Simon  
2nd row (from left to right): C. Abadie, P.-Y. Teycheney, J. Carlier, Yanetsy Montero Sanchez, L. Roero Morales, R. Gomez Kosky, M. Folgueras, C. Serra, L. Perez Vicente

## Summary of the 11/12 presentations and discussions

On 11 December, the project partners presented the progress made in their different fields of action. The CIRAD representatives also reported on their recent research work on black leaf streak disease and BSV.

This day also provided the opportunity to explain the conditions for subsidy and donation payments between CIRAD and the operational partners in the project.

There were eleven presentations: 6 by CIRAD, 2 by IDIAF, 2 by INISAV and 1 by INIVIT. They were sent in digital form to all the participants.

## Report on the 12/12 visit

The second day of the coordination meeting was devoted to a field trip for all the project partners, where they discovered the activities of INIVIT and IBP. Mr Morales, Director of INIVIT, welcomed all the partners with a speech, and light

refreshments after a visit to the Musaceae collection. The day ended at the University of Las Villas where the group visited the IBP premises accompanied by R. Kosky.



**Presentation of the Musaceae collection by Lianet Gonzales from INIVIT**



**Visit to IBP (R. Kosky and P.-Y. Teycheney)**

## Field mission for black leaf streak disease in Cuba

Following the coordination meeting, a joint CIRAD (Abadie, Carlier, Lescot, Cavalier) and INISAV (Echemendia A., Montero, L. Perez) mission was undertaken from 13 to 16/12/2011. It consisted in taking leaf samples from FHIA 18 and plantain plots in 4 provinces (Villa Clara, Ciego de Avila, Matanzas and Pinar del Rio). The samples will be used by INISAV (to create a national *M. fijiensis* collection) and by CIRAD (in Montpellier) to study selection by the host.

The mission was followed by a debriefing meeting with CIRAD's partners in Cuba on 15/12 at the French Embassy in Havana.



**Jean Carlier collecting leaf samples from plantain in Ciego de Avila.**

## Aurore Cavalier's mission to Cuba

# Cabaré project newsletter

Aurore Cavalier was on a mission in Cuba from 10 December 2011 to 28 January 2012. During the mission, Aurore diagnosed the health status of banana hybrids of the FHIA 18 variety with the project's Cuban partners. These hybrids were introduced into Cuba in 1994-1995 for their resistance to black leaf streak disease caused by the fungus *Mycosphaerella fijiensis*. However, in recent years, a drop in the level of their resistance has been seen. Aurore's job is to quantify this loss of resistance and gather information to explain the cause. To that end, Aurore and the project's Cuban partners collected banana leaf samples and soil samples throughout the country for nutritional analyses, and also samples of necrotized laminae to isolate the fungus at CIRAD in Montpellier. Some leaf samples with or without BSV symptoms, and some scale insect vectors of BSV, were also collected for later analysis at INISAV. Aurore was accompanied by Luis Perez Vicente and Elisa Javier Higginson, researchers from INISAV and virologists and specialists from the different provincial plant health institutes. In all, 25 FHIA plots, and 25 control plots located around 3 km away from them, were sampled in all the Cuban provinces. The sampling operations were backed up by a questionnaire survey of growers. It was thus possible to describe the environment of the plots and define the associated characteristics and cultural practices (area, surrounding vegetation, any intercrops, fertilization, origin of the plants, disease severity incidence, etc.). Likewise, a provincial questionnaire was used to gather statistical data on the different varieties of dessert and plantain bananas grown on a provincial scale (distribution and area), in order to describe the banana landscape at national level.

## Aurore Cavalier's mission to the Dominican Republic

Aurore Cavalier undertook a second mission to the Dominican Republic from 19 April to 29 May 2012. In collaboration with IDIAF, Aurore diagnosed the health status of FHIA 21 plantain hybrids introduced into the Dominican Republic at the end of the 1990s for their resistance to black leaf streak disease. As in Cuba, a decrease in the resistance of these hybrids to the disease has been noted in recent years.

The purpose of Aurore's mission was to gather data and plant material for analyses, with a view to identifying the reasons for this loss of resistance. Plantain (FHIA 21) leaf samples and soil samples were taken during the mission for nutritional analyses, along with some leaf samples with and without BSV symptoms and, lastly, some scale insect vectors of the virus. Aurore was accompanied in the field by various managers and researchers: Teresa Martinez (IDIAF), Colmar Serra (IDIAF), Ramon Jimenez (IDIAF), Domingo Rengifo (IDIAF), Luis Miniere and Juan Clase (Ministry of Agriculture). In all, 35 FHIA 21 plots were visited and sampled, along with 35 plots planted with a control variety located less than 3 km away from the FHIA21 plots. Only 10 provinces of the territory were sampled, namely those where these hybrids are grown (Monte Cristi, La Isabela, Valverde, Santiago, Espaillat, Hermanas Mirabal, La Vega, Duarte, Monte Plata, and Sanchez Ramirez). A questionnaire survey was also conducted with growers. It was thus possible to describe the environment of the plot and to define the characteristics and associated cultural practices (area, surrounding vegetation, any intercrops, fertilization, origin of the plants, disease severity index, etc.). The samples collected to determine the nutritional status of the plots were sent to both the CIRAD soil analysis laboratory in Montpellier (France) and to the IDIAF analysis laboratory. The same analyses will be conducted in tandem in the two laboratories, for comparison purposes. In addition, 700 leaf samples were collected for virological indexing (BSV) by IDIAF.



Juan Antonio, Aurore Cavalier and Luis Miniere hard at work.

## Miscellaneous information

### Project website

Work on constructing the Cabaré project website has begun. The website can be consulted at the following address:

<http://projet-cabare-travail.cirad.fr/>

It will be completed as the project progresses. Eventually, it will be used to pass on scientific and technical information to the partners and to the public at large, and will serve as a secure platform for exchanging data between the operational members of the project.

### Donation update:

The project allows for the donation of equipment to the operational partners. For instance, the following equipment has been provided:

#### INISAV

- A PCR express type thermocycler
- An IMAX type ELISA plate reader
- A Leica binocular magnifier
- Optical fibres for the Euromex binocular magnifier
- A Canon water-resistant digital camera
- A Dell laptop computer
- An HP printer

#### IBP

- A Canon water-resistant digital camera
- A Dell laptop computer
- An HP printer

#### INVIT

- A Canon water-resistant digital camera
- A Dell laptop computer
- An HP printer

#### IDIAF

- A Canon water-resistant digital camera
- 3 Dell laptop computers
- 3 HP printers

This list is not complete, as IDIAF will shortly be receiving a thermocycler to carry out the experiments planned under the project.



# Cabaré project newsletter

**Reina Teresa Martinez: bilingual and soon to become a Doctor!**

Reina Teresa Martinez (IDIAF) is the national coordinator of the Cabaré project for the Dominican Republic. Since 2011, Teresa has also been a keen student of the French classes dispensed by the Alliance Française in Santo Domingo. And since November 2011, Teresa has been enrolled on a Doctorate thesis course at the University of the French West Indies and Guiana (UAG), in Guadeloupe. Her research topic fits in with the virology activities scheduled under the Cabaré project and is entitled: "Évaluation du risque de dispersion du virus de la mosaïque en tirets du bananier (BSV) par la diffusion d'hybrides interspécifiques de bananiers et de plantains porteurs de séquences endogènes BSV infectieuses" (Risk assessment of banana streak virus (BSV) dispersal through the dissemination of interspecific banana and plantain hybrids carrying infectious endogenous BSV sequences). She will be benefiting from co-supervision at CIRAD Guadeloupe by Dr P.-Y. Teycheney, a virologist, and at IDIAF by Dr. Graciela Godoy de Lutz, a plant pathologist. Teresa will be carrying out her thesis work at IDIAF in the Dominican Republic and at CIRAD in Guadeloupe.

## Expenditure claims

Under the Cabaré project, CIRAD the coordinator is answerable to the Joint Technical Secretariat (JTC), which is the management authority for the European funds providing the finance, and is required to submit expenditure claims. Two expenditure claims have been submitted since the start of the project. The operational partners will also be required to follow the same procedures after receiving from CIRAD the share of funding due to them. To that end, they will have to justify the expenditure made from project funds, notably by way of invoices, time slips for staff working on the project, in compliance with the instructions given to them during the first two coordination meetings. It will be the responsibility of the national project coordinators (A.-L. Echemendia for Cuba and R.-T. Martinez for the Dominican Republic) to gather and send to the project manager (O. Simon) all financial vouchers relative to the project within 6 months of receiving their first tranche of the financial envelope. This information is essential for justifying the expenses incurred by the project, and their transfer to CIRAD, the project coordinator, in good time governs the payment of the 2<sup>nd</sup> tranche of the financial envelope to the operational partners.

**Next CABARE project coordination meeting**

The next coordination meeting will be held in week 49, in December 2012, in the Dominican Republic. All the active partners will be invited to attend. It will provide the opportunity to look at the progress made in the project and take stock of upcoming actions (of CIRAD and its partners). The partners will receive an official notice to attend before November.

## Black leaf streak disease detected in Guadeloupe

Black leaf streak disease was officially detected in northern Grande Terre on 24 January 2012 (see article below). However, some of the samples taken revealed the existence of other foci in Basse Terre, which suggests that its existence in Guadeloupe is prior to January 2012. Containment measures have been set in place to slow down the spread of the disease in Guadeloupe.



**Alerte à la cercosporiose noire**

Elle craint la Guadeloupe depuis des années, sans réussir à y entrer. Cette fois, c'est fait. La pire plaie pour les bananeraies a été repérée en Nord Basse-Terre.

**DES PROJECTIONS SUR L'ENSEMBLE DE L'ÎLE**

Mais jusqu'à quel point elle perce ? C'est ce que les autorités cherchent à savoir. Les équipes de surveillance biologique du territoire de la DAAF (service de l'Alimentation) et de la Hélandation régionale de collaborent avec les organismes sensibles (Freder) ont pour objectif de mettre en évidence la présence éphémère – et probable – d'autres foyers et d'évaluer précisément l'extension de la maladie.

C'est pourquoi des projections sont en cours sur l'ensemble de l'île auprès des agriculteurs mais également chez les particuliers possédant des jardins privés avec des bananiers. Il est donc indispensable que les propriétaires s'opèrent à la propagation de la cercosporiose.

Compte tenu de ce nouveau contexte, il est probable que cette épidémie accroisse jusqu'à juin, sans reculer. Les conditions météorologiques actuelles sont en effet très favorables à la propagation de la cercosporiose.

M.A.

**The local press reporting on the detection of black leaf streak disease in Guadeloupe (French West Indies, 25 January 2012)**



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