

Preparing for battle against Fusarium wilt

Fusarium wilt, one of the most devastating diseases of bananas, is now a major concern in the Asia-Pacific region. Recent reports of severe infection caused by the more virulent Tropical Race 4 of the pathogen *Fusarium oxysporum* f.sp. *cubense* (*Foc*) prompted INIBAP to conduct the International Fusarium Wilt Diagnosis and Characterization Training Workshop at the

Malaysian Agricultural Research and Development Institute (MARDI) in Serdang, Malaysia from 24 to 28 April 2006. The workshop aimed to enhance the capacity of Fusarium wilt researchers in managing the disease and to develop action plans in carrying out *Foc* R&D activities in the region.

The workshop was co-organized by MARDI,

the Forestry and Agricultural Biotechnology Institute (FABI)-University of Pretoria in South Africa and the Queensland Department of Primary Industries and Fisheries (QDPI&F) in Australia. Twenty-five participants from Bangladesh, Cambodia, China, India, Indonesia, Malaysia, Philippines, Papua New Guinea, Sri Lanka, Thailand, Vietnam, Fiji, Taiwan, Costa Rica and Cuba attended the workshop. They will form the core of a network of researchers who will plan and conduct *Foc* research in the region. As initial undertaking, the group proposed the following R&D activities:

- Survey of the extent of Fusarium wilt incidence in collection of samples in each country to map out Fusarium wilt occurrence in the region and in the countries;
- Characterization of samples (VCG and DNA analysis);
- Establishment of national/regional/international repository centers (*Foc* library);
- Standardization of inoculation, pathogenicity/ resistance evaluation protocols; and
- Identification and evaluation of disease management strategies.

Topics covered during the workshop included historical perspective of the disease, field identification, sample collection, identification, isolation and storage of the pathogen, identification of the VCGs in *Foc*, quarantine issues, molecular characterization of *Foc*, somaclonal variation for banana improvement, conventional and unconventional banana improvement, and new developments and challenges in Fusarium wilt research. Altus Viljoen and Gerda Fourie of FABI, Linda Smith and Lisa Gulino of QDPI&F, Shin Chuan Hwang (former director of the Taiwan Banana Research Institute) and Gus Molina, Regional Coordinator of INIBAP-Asia Pacific, served as trainers during the course.



Trainers and participants of the International Fusarium Wilt Diagnosis and Characterization Workshop held at MARDI, Serdang, Malaysia



Gus Molina, INIBAP-AP Coordinator, conducting a field lecture on *Foc* identification

1st Cagayan Valley Banana Stakeholders' Forum

In the northern Philippines' Cagayan Valley, banana is widely grown as a cash crop and is the main source of income for thousands of mostly small-scale farmers. The main cultivars grown include Lakatan, Latundan, Bungulan and Saba/ Cardaba, primarily for the domestic market. However, several diseases, particularly the Banana Bunchy Top Disease (BBTD), practically decimated most of these small-scale banana farms. Banana production in the region dramatically declined to almost nil. Presently, only a handful of banana farms remain. Banana stakeholders in the region agree that a massive rehabilitation programme is needed to revive the industry. In response, INIBAP initiated a collaborative project with the Quirino State College to promote the use of tissue cultured banana planting materials and annual cropping of banana in the region. To kickstart the rehabilitation programme, INIBAP also helped organize the 1st Cagayan Valley Banana Stakeholders' Forum, which was held at the Isabela State University from 30 to 31 March 2006.



Participants of the 1st Cagayan Valley Banana Stakeholders' Forum held at the Isabela State University, Philippines

Led by Drs Nilo E Padilla and Biley E Temanel, Chairman and Vice-Chairman, respectively, of the Cagayan Valley Agriculture and Resources Research Development Consortium (CVARRD), the forum was conducted to determine the current projects and activities of banana agencies in Region 2; identify gaps and formulate recommendations to harmonize rehabilitation efforts. The forum was attended by political leaders, scientists from various state universities, banana exporters and local banana traders, and farmers' groups from the different municipalities in Cagayan Valley.

Fusarium workshop in Australia

On 20-22 February 2006, scientists from Indonesia and Papua New Guinea met in Cairns, Australia to discuss and improve the full proposal of the project on 'Mitigating the threat of banana Fusarium wilt: Understanding the agroecological

distribution of pathogenic forms and developing disease management strategies' (CP2005/136) for submission to the Australian Centre for International Agricultural Research (ACIAR). The 3-year project will cover Indonesia

and Papua New Guinea (PNG) and is expected to start in July 2006.

The participants planned and synchronized details of the project activities, and identified synergy and complementation with an existing ACIAR bilateral project in Indonesia. Project areas discussed included disease survey, collection, characterization and conservation; *Foc* diagnostics and soil

health diagnostics; disease management; and capacity development. Participants of the workshop were:

- Dr TK Lim, Project Manager, ACIAR, Australia
- Mr Bob Williams, Science Leader, Queensland Department of Primary Industry and Fisheries (QDPI&F), Australia
- Mr Tony Pattison, Nematologist, Root-Soil Health Specialist, QDPI&F, Australia
- Ms Lisa Gulino, Molecular Biologist, QDPI&F
- Mr Wayne O'Neill, Plant Pathologist-biotechnologist, QDPI&F
- Mr Jeff Daniells, Horticulturist, QDPI&F
- Dr Peter Taylor, Research Fellow, University of Queensland
- Dr Nasril Nasir, Plant Pathologist, Indonesian Tropical Fruit Research Institute (ITFRI), Indonesia
- Dr Catur Hermanto, Plant Pathologist, ITFRI
- Mr Pere Kokoa, Plant Pathologist, National Agricultural Research Institute (NARI), PNG
- Mr Tony Gunua, Quarantine Officer-Plant Pathology, National Quarantine and Inspection Authority, PNG
- Dr Agustin Molina, Regional Coordinator, INIBAP-AP



The Fusarium planning workshop participants

Bananas galore at Farmers' Field Day

by FS Dela Cruz, Jr. and VC Huelgas
Institute of Plant Breeding, UP Los Baños, Philippines

A farmers' field day showcasing introduced and local banana cultivars was held last 15 March 2006 at the Banana Demonstration Plot, Central Experiment Station of the University of the Philippines Los Baños (UPLB). With the theme "Growing Different Types of Bananas", the event attracted 200 participants composed of farmers, researchers, students, businessmen and other visitors.

The field day highlighted the introduced banana cultivars selected on the basis of performance under local growing conditions in terms of yield, acceptability in taste, processing potential and resistance to common pests and diseases. The introduced bananas, namely FHIA-01, FHIA-02, FHIA-17, FHIA-18, FHIA-23 and FHIA-25, were planted alongside the local cultivars (Lakatan Davao, Lakatan Cavite, Cardaba, Quarenta Dias, Cavendish and Latundan). The plot displayed the morphological features of the bananas as well as their fruiting characteristics. A tour of the site was conducted and tips on growing banana and entrepreneurial prospects were provided by Dr Agustin Molina, INIBAP Regional Coordinator for Asia and Pacific, and Dr Felipe S dela Cruz, Jr and Mr Lavernee S Gueco of the Institute of Plant Breeding (IPB-UPLB), project staff.

An on-the-spot taste test of different banana preparations was also conducted, much to the delight of the participants. The bananas were prepared as chips (salted and honey glazed) and cakes. Fresh and boiled bananas were also available. Farmers and visitors were asked to rate the cultivars in terms of acceptability of the various preparations. Results of this evaluation will be published in the next issue. Ready-to-plant tissue cultured banana seedlings were also given away to farmers for them to grow in their own backyards.

The turnout and response of the participants manifested the interest in growing the new banana cultivars and need for improved ways and better productions methods to make banana production more profitable. ■



(At right, top to bottom) Dr Agustin Molina, INIBAP-AP Coordinator, presenting the different cultivars being promoted by the project; Dr Felipe dela Cruz of IPB-UPLB demonstrating how to transplant tissue cultured banana plantlets; Visitors taste-testing the different banana-based products prepared during the field day



New face at the INIBAP Asia-Pacific Office

Ms Vida Grace Sinohin, a Filipino national, joined the INIBAP-AP Office as Technical Assistant on 2 January 2006. She will be assisting in the coordination of national programs and special projects in the region. Vida, as she is fondly called, holds a Bachelor of Science Degree in Agronomy and is finishing her thesis for her Master of Science degree in Plant Genetic Resources Conservation and Management at the University of the Philippines Los Baños (UPLB). Previously, Vida worked as a Research Associate at the Institute of Plant Breeding - UPLB.



Goldfinger bunches (centre and left; Fa'i Samoa at right) in an Apia market, December 2004 (photo by Jeff Daniells)

Goldfinger reflections in Samoa

by Jeff Daniells, Queensland Department of Primary Industries & Fisheries, Australia

The adoption of Goldfinger (FHIA-01) in Samoa is an interesting story on change. In the early 1990's when Goldfinger was first introduced into the country, Samoans did not think much about the variety, being used to the taste of their local banana cultivars. But time does bring change, albeit slowly, especially in people's tastes and preferences. These days, bunches of Goldfinger could be found in abundance in the markets of Apia, Samoa's capital, and can also be seen planted on many properties as one drives around the city. So what contributed to this change? It seems that the ease by which Goldfinger can be grown played a vital role:

- It requires little attention to grow;
- It has excellent resistance to black Sigatoka;
- It has widely spaced fingers;
- It has good tolerance to scab moth (*Nacoleia octasema*); and
- It has good ability to extract soil nutrients.

Given enough time and exposure, Samoans are getting the taste! ■

Announcements

Fusarium wilt project inception workshop (by invitation), Bukit Tinggi, Indonesia, 22-26 August 2006

This is a workshop for participants of the ACIAR-funded project on Fusarium in Indonesia and PNG.

CTA-ASTI ToT regional workshop on the Innovation Concepts with relevance to the Pacific region, Port Moresby, PNG, 11-15 September 2006.

XVII 2006 ACORBAT international meeting Joinville, Brazil, 16-20 October 2006

Email: info@acorbat2006.org

ACORBAT is the Association for Cooperation in Banana Research in the Caribbean and Tropical America. It is a global association

aimed at promoting studies, investigations or experiments to improve the cultivation, management and processing of bananas.

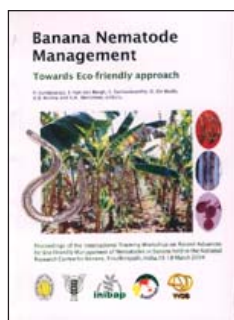
Review and planning workshop of the International Musa Testing Programme (IMTP) (by invitation), Camboriu, Brazil, 23-25 October 2006

This is a global review and planning meeting of Phase 3 of the IMTP.

5th BAPNET Steering Committee meeting (by invitation), Phnom Penh, Cambodia, 4-7 December 2006

This is an annual meeting of BAPNET member country representatives. Selected resource persons are also invited.

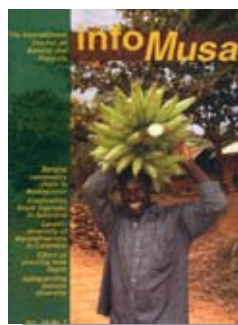
New Publications



P Sundararaju, I Van den Bergh, S Sathiamoorthy, D De Waele, AB Molina and KH Borromeo, editors. 2005. **Banana nematode management: Towards Eco-friendly approach**. Proceedings of the International

Training cum workshop on "Recent Advances for Eco-friendly Management of Nematodes in Banana" held on 16-18 March 2004 at the

National Research Centre for Banana (NRCB), Tiruchirapalli, India. (You may contact the NRCB to get copies of this publication.)



INFOMUSA. Vol. 14 No. 2 December 2005. International Network for the Improvement of Banana and Plantain, Montpellier, France.

RISBAP - The Regional Information System for Banana and Plantain - is a regional mechanism to improve the dissemination, utilization and access to information on banana and plantain in Asia and the Pacific. The *RISBAP Bulletin* is published by the INIBAP's Asia Pacific Office. For article contributions or inquiries, write to us at: INIBAP-AP, c/o IRRRI, Khush Hall, College, Laguna 4031 Philippines; Tel/Fax: (63) 49-536-0532; E-mail: inibap.bapnet@cgiar.org; Website: <http://www.inibap.org>.



INIBAP is a network of the International Plant Genetic Resources Institute (IPGRI)