Facilitating information exchange on plant health through the Plantwise programme

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EFSA/EPPO Workshop - April 2014
CABI’s mission

CABI improves people’s lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment.
We work on behalf of 48 member countries

* UK Overseas Territories. **Associate Member
Global reach

We have 350+ staff across 21 locations worldwide

USA 3
UK 208
Netherlands 3
Switzerland 27
Hungary 1
Serbia 1
Bulgaria 1
Trinidad & Tobago 4
Costa Rica 1
Brazil 2
Chile 1
Ghana 5
Cameroon 1
Uganda 1
Kenya 37
Ethiopia 1
India 18
Malaysia 13
Australia 1
China 6
Pakistan 51
CABI’s relevant projects and services

- CAB Abstracts
- Books
- Crop Protection Compendium
- Plantwise knowledge bank
Lose less, feed more

Supporting smallholder farmers with accessible, practical knowledge, so they can help themselves to lose less of what they grow to crop pests.
Through

- National networks of plant clinics established to provide regular advice to farmers
- Linkages between key actors in a plant health system, including extension, research, regulation and input supply
- Knowledge bank for pest diagnosis, treatment, distribution, and data management.
PW Implementation 2013

CABI member countries in red

Africa
- DR Congo
- Kenya
- Rwanda
- Sierra Leone
- Tanzania
- Uganda
- Ghana
- Ethiopia
- Malawi
- Burkina Faso
- Zambia
- Mozambique

Central & West Asia
- Pakistan
- Afghanistan

East Asia
- China

Southeast Asia
- Cambodia
- Vietnam
- Thailand

South Asia
- Bangladesh
- India
- Nepal
- Sri Lanka

Caribbean & Central America
- Nicaragua
- Honduras
- Barbados
- Grenada
- Trinidad & Tobago
- Suriname

South America
- Bolivia
- Peru
- Brazil
Information flow

**Farmers**

Diagnosis, support, advice

**‘plant doctors’**
(extension/plant protection staff)

Dialogue with farmer, collect key information

**Plantwise knowledge bank**

“Intelligence”: What crops, pests are being seen?

Partner materials/data

Scientific information and expertise

**Improved, evidence-based extension materials; pest alerts; support tools**
Welcome to the Plantwise Knowledge Bank

The Plantwise knowledge bank brings together key plant health information from across the world, including a useful diagnostic tool and factsheet library to help diagnose and manage plant health problems. The Plantwise map allows global pest and crop distribution to be mapped alongside other key information such as climate zones. If you want quick access to information for a particular country, select a country from the dropdown above to see a custom-made information portal for that region and click Continue.

Plant clinics

Plantwise provides training to local people so they can set up plant clinics in their region. These clinics operate on a regular basis, in easy-to-access places, and allow farmers to bring in samples of their crop problems for diagnosis and advice. Find out more about clinics here.
Each Plantwise country with its own homepage

Each CABI Member Country with its own homepage

Each EPPO Country with its own homepage

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Pest management

Pests in Kenya

- Bananas / plantain
- banana weevil
- Panama disease of banana
- Coffee
- coffee berry disease
- coffee leaf rust
- Maize
- African maize stalk borer
- Maize streak virus

Recently added factsheets for Kenya

- Bacterial spot disease management in tomatoes
- Kuzuia ugonjwa wa madoa ya bakitera katika nyanya
- Trapping mice with water buckets in maize fields
- Mtogo wa panya kwa kutumia ndoo ya maji
- Root knot nematodes in tomatoes

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Plant clinics

Go to full list...

See all factsheets for Kenya...

Go to diagnostic tool...

Go to factsheet library...

New pest reports for Kenya

- First report of Maize chlorotic mottle...
- First report of Tomato yellow ring virus...
- A new genus of gall midge (Diptera: Cecidomyiidae)...
- Redescription of Stentorces Quinlan, 1984...
- Contarinia manii sp. n. (Diptera...
Each Plantwise country with its own homepage

Each CABI Member Country with its own homepage

Each EPPO Country with its own homepage
**Datasheet details**

**Panama disease of banana (Fusarium oxysporum f.sp. cubense)**

**Host plants / species affected**
- Heliconia
- Heliconia caribaeae
- Heliconia chartacea
- Heliconia collinsiana
- Heliconia crassa
- Heliconia Latispatha
- Heliconia mariae
- Heliconia rostrata
- Heliconia vellerigera
- Musa (banana)
- Musa acuminata (wild banana)
- Musa balbisiana
- Musa schizocarpa
- Musa textilis (Manila hemp)

**List of symptoms/signs**
- Leaves - necrotic areas
- Leaves - abnormal colours
- Leaves - abnormal forms
- Leaves - abnormal leaf fall
- Leaves - wilting
- Leaves - yellowed or dead
- Stems - discoloration of bark
- Stems - stunting or rosetting
- Stems - internal discoloration
- Stems - distortion
- Roots - soft rot of cortex
- Roots - rot of wood
- Growing point - dead heart
- Fruit - reduced size

**Symptoms**
- Banana

The various symptoms of *Fusarium* wilt on banana are described and well illustrated by Ploetz and Pegg (1999).
Musa Disease Fact Sheet No. 5

FUSARIUM WILT OF BANANA

N. Y. Moore, S. Bentley, K. G. Pegg, and D. R. Jones (June, 1995)

Fusarium wilt or Panama disease of banana is widely regarded as one of the most destructive plant diseases in recorded history. It is caused by the soil-inhabiting fungus Fusarium oxysporum Schlecht. f. sp. cubense (E. F. Smith) Snyder & Hans (Foc). The disease was first recognized in Australia in 1974. Fusarium wilt has now been reported from all banana growing regions of the world except Papua New Guinea, the South Pacific Islands and some of the countries bordering the Mediterranean.

Fusarium wilt is a serious problem on many banana cultivars grown by smallholders for local consumption. These include La-tandu (Philippines), Meiji (Brazil), Pisang Nastali (Malaysia), Raashtal (India) which belong to the AAB 'Stark' subgroup, Lady Finger' (Australia), Prata (Brazil), Vinpakan (India) which belong to the AAB 'Pom' subgroup and Chooi Tai (Vietnam), Kayinja (East Africa), Kuoi Namak (Thailand) which belong to the AAB 'Pisang Awak' subgroup. Other locally important cultivars such as those in the East African Highland subgroup (AAA 'Mutuk/Luyega') and Pisang Mas subgroup (AA 'Sour') have also been reported as susceptible in some environments. If the disease were to spread to the South Pacific, cultivars in the popular Pacific cooking banana subgroup (AAB 'Mata Mofu/Popoulo') would also be vulnerable as representatives have shown susceptibility in field tests. In addition, widely grown clones in the AAB 'Bugen' and AAA 'Gros Michel' subgroups are also susceptible.

Gros Michel was the basis of the early export banana trade in the Latin America/Caribbean region and it was the progressive decline of plantings of this cultivar due to Fusarium wilt in the 1940-50s that led to the adoption of cultivars in the AAA 'Cavendish' subgroup as the main export banana types. Cavendish cultivars have remained the mainstay of the world's export industries to date. These types are also highly favoured for local consumption in countries such as Australia, China, Vietnam, India, Pakistan, Egypt and South Africa. Unfortunately, plantations of Cavendish cultivars in sub-tropical countries such as Taiwan, Spain (Canary Islands), Australia and South Africa are being increasingly attacked by Fusarium wilt. It is thought that plants in these areas are predisposed to systemic infection by certain strains of Poecyphora cold stress during winter. However, recent losses of Cavendish growing in export plantations in Malaysia, Sumatra and Java make it clear that other strains are quite capable of systematically infecting cultivars such as...
Pests in Poland

Click on the pests to find more information including images, descriptions and a distribution map.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

acarinosis of vine (*Calepitrimerus vitis*)  
aialfa dodder (*Cuscuta epithymum*)  
aialfa leaf-cutter bee (*Megachile rotundata*)  
aialfa seed chalcid (*Bruchiphagus roddi*)  
aialfa yellow spot (*Ailalfa mosaic virus*)  
ammond bud failure (*Prunus necrotic ringspot virus*)  
altornaria leaf spot (*Altoraria alternata*)  
American mosaic of peach (*Peach latent mosaic viroid*)  
Ametastegia (*Ametastegia*)  
Amylostereum areolatum (*Amylostereum areolatum*)  
angular leaf spot of cotton (*Xanthomonas citri subsp. malvacearum*)  
annual meadowgrass (*Poa annua*)  
annual nettle (*Urtica urens*)  
annulus tabaci (*Tobacco ringspot virus*)  
an antagonist of Venturia (*Chaetomium globosum*)  
anthracnose (*Apiognomonon errabunda*)  
anthracnose (*Colletotrichum coccodes*)  
anthracnose (*Giomorisia cinquata*)  
anthracnose of bean (*Colletotrichum lindemuthianum*)  
anthracnose of cucurbits (*Colletotrichum orbiculare*)  
anthracnose of flax (*Colletotrichum lincola*)  
anthurium thrips (*Chaetanaphothrips orthidi*)  
Aphanomyces root rot (*Aphanomyces aetiches*)  
apple aphid (*Aphis pomi*)  
apple blossom weevil (*Anthonomus pomorum*)  
apple brown tortrix (*Pandemis heparana*)  
apple collar rot (*Phytophthora cactorum*)  
apple dimple (*Apple scar skin viroid*)  
apple leaf-curving midge (*Dasinoura mali*)  
apple of Peru (*Nicandra physalodes*)  
apple proliferation (*Phytoplasma mali*)  
apple rubbery wood (*Apple rubbery wood phytoplasma*)  
apple rust mite (*Aculus schlechtendali*)
Sign up for pest alerts

You can choose to sign up to alerts for a specific country or for new pest reports from around the globe.

Your country is currently: Kenya.

I am interested in receiving pest reports covering:

- [ ] Kenya

or

- [ ] Please select region

Please provide the following details (* are mandatory):

- Title:
  - Please select

- First name:

- Surname:

- Organisation:

- City:

- Country:
  - Please select

- Email address:

- Telephone:

We would like to occasionally send you news about Plantwise. If you do not want to receive Plantwise news, please uncheck the box.

Sign up
Full references given for each point

Species currently displayed:
Colletotrichum kahawae

Status Present, restricted distribution

Reference
Partner data from CIAT
Papers on modelling
Access controlled area

Clinic data

Data training

Recording

Collating

Analysing
### Access controlled area

#### Data training

**Clinic data:**

- **Recording**
- **Collating**
- **Analysing**

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### Analysing

**Prescription and record sheet**

#### General Information:

- **Name:**
- **Code:**
- **Start date:**

#### Farmer Information:

- **Name:**
- **Address:**
- **Location:**

#### Sample Information:

- **Crop:**
- **Variety:**
- **Date:**

#### Development Stage:

- **Stage:**
- **Stage:**

#### Pest Affected:

- **Stage:**
- **Stage:**

#### When first seen and area affected:

- **Stage:**
- **Stage:**

#### NIPD Affected:

- **Stage:**
- **Stage:**

#### Predicted yield:

- **Stage:**
- **Stage:**
Access controlled area

Clinic data:
- Recording
- Collating
- Analysing

Groundwork

Recording → Transfer → Digitisation

Harmonisation

Sharing

Analysis

Validation

Analysing
Kenya data workshops

WHO
- Quarantine, Pesticides Board, Ministry, Universities, Research Institute

KEY MESSAGES
- Potential new pest – needs confirmation by NPPO
- Pest distribution information, e.g. banana cigar end rot, MLND
- General survey of pests – helps update Kenya’s pest list
- Reviews pesticide use levels on key crops e.g. tomatoes.
- Develop safer and more effective nematode treatments
- Feedback to plant doctors on diagnosis and advice
Validation of recommendations according to plant doctor
Joint IPPC/Plantwise meeting in East Africa

WHO

- Rwanda, Kenya, Uganda and Tanzania:
  - NPPOs, extension, research universities
  - IPPC, IAPC, FAO, Plantwise

KEY MESSAGES

- Need to share information among countries
- PW activities can support the NPPO activities through:
  - Linking stakeholders in Plant Health System
  - Pest reporting
  - Pest risk analysis
  - List of regulated pests
Factsheet app available for Android on Google Play.

Fusarium wilt of banana

Fusarium oxysporum f.sp. cubense

KENYA

The disease is found in the soil where it can survive for many years. It can be spread by diseased soil, suckers and infected materials like boots and hoes from other farms.

Recognise the problem

When a banana plant has Fusarium wilt, the older leaves become yellow, starting at the edge of the leaf. Leaves may start to turn yellow two months after planting. Young plants may stop growing. The plant becomes sick and slowly dies. If you cut across the banana trunk, you will see a reddish brown ring on the cut surface. Sometimes the trunk splits at the base.

Bacterial wilt of banana is a different disease, but bacterial wilt starts from the younger leaves, turning them yellow. The fruits ripen too soon. A sticky, yellow pus comes from the cut of a healthy plant. If you cut a sick plant, no pus will come out.

Factsheet app available for Android on Google Play.
Thank you

www.plantwise.org/knowledgebank

We wish to acknowledge the support of our donors, as well as our national and international partners who make Plantwise possible

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