

Training Stakeholders for Management of Banana Xanthomonas Wilt

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Introduction

Banana Xanthomonas wilt (BXW) is a highly destructive disease, currently posing a serious challenge to food security in East and Central Africa (ECA), where it is spreading in Uganda, Kenya, Tanzania, Rwanda, Burundi and D.R. Congo (Fig. 1). BXW is caused by *Xanthomonas campestris* pv *musacearum* (*Xcm*) and induces rapid wilting of leaves, premature ripening and rotting of fruits (Fig. 2A&B) and death of entire mats. The bacterium is spread by insects, contaminated tools and infected planting suckers (Fig. 2 C,D,E). Disease management measures include removal of male flowers to restrict insect transmission, disinfecting tools and planting suckers from uninfected sources. Other measures are removing infected plants to reduce inoculum sources and enforcing quarantine.

Effective management of BXW requires all stakeholders (farmers, traders, extension and research staff, policy makers) to be well equipped with knowledge for disease identification and management. An effort has been made to address this need through the Crop Crisis Control Project (C3P), a collaborative project implemented by Catholic Relief Services (CRS) in partnership with the International Institute of Tropical Agriculture (IITA), Bioversity International, NARS, NGOs and other partner institutions in ECA. Some challenges to implementation of this training initiative, and progress achieved are reported here.

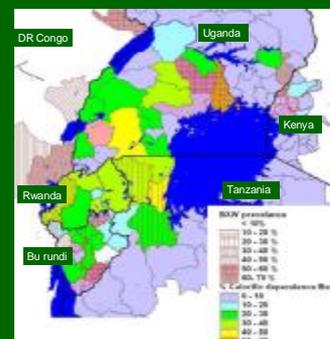


Fig 1. distribution of Banana Xanthomonas wilt

Training approach

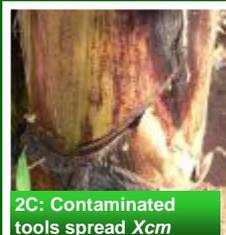
The BXW management training programme was initiated with a one week long regional training workshop (Tier 1) in October 2006. There were five participants per country, selected to represent technical, extension, and policy making institutions. After the training, and upon return to their countries, those trained at regional level were expected to organise in-country training (Tier 2) to increase the manpower (trainers) available within each country, who would then take the training further down to the community level (Tier 3). Half of the participants were from Francophone and half from Anglophone countries. In addition to lectures and field visits for practical demonstrations, additional training materials were provided as printed handouts and electronic copies (CD and flash sticks). The progress achieved in implementation of this training was reported in August 2007 and is summarised in Table 1.



2A: Infected wilting leaves



2B: Infected rotted fruits



2C: Contaminated tools spread *Xcm*



2D: Insects visiting flowers spread *Xcm*



2E: Suckers spread *Xcm*

Table 1: Number of stakeholders trained in BXW management

Country	Tier 1	Tier 2	Tier 3
	Regional level	Country level	Community level
Kenya	5	194	8305 farmers
Tanzania	5	99 (+ 42)*	13764 farmers
Rwanda	5	45	2021 farmers
Burundi	5	184	580 farmers (planned)
D.R. Congo	5	306 (+>20)	1570 brigadiers >20,000 through markets >800 school children 49 university students
Uganda	>5	159	3149 farmers +5397 through PDC +>1600 school children

* No. in parenthesis indicates separate figure for policy makers

Some challenges to implementation of the training program

- Loss of trainers: Some of those trained at regional level were not available for subsequent training within country as envisaged.
- Conversion of electronic training material into locally usable forms: Some participants receiving training materials in soft/electronic form (CD) did not have sufficient access to computers and printing resources to enable widespread distribution.
- Insufficient resources: In all affected countries BXW was spreading much faster than resources available could match.
- Lax local response: Where BXW impact or threat are not immediate stakeholders generally do not appreciate the need for prompt action.
- Inadequate capacity: In some countries there was no readily available extension network that could be mobilized for involvement in training.

Conclusion and recommendations

- The C3P regional training program for BXW management has significantly increased the capacity available in each country for disease surveillance and response, as well as co-ordination of responses to BXW between the affected countries.
- Selection of Tier 1 trainees should take into consideration their ability and availability to participate in training at Tiers 2 and 3.
- Packaging of training materials need to consider ease of immediate use; if electronic the ability of recipients to convert them into locally usable forms should be considered.
- Differences between countries (in terms of resources and capacity) need to be taken into consideration when designing training program; support can be skewed in favor of the needy.



Training lectures before field work



Practical demonstration in the field



Training on "Going Public" method.



Farmers' training during field days