EXPERIENCES IN MANAGING BACTERIAL WILT OF TOMATO IN EAST AFRICA

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Introduction

- Bacterial wilt caused by *R. solanacearum is* reported as a major constraint to tomato production
- *Ralstonia solanacearum* has a long survival in soil
- The pathogen enters plant roots through natural openings or wounds created by pests such as nematodes (Loreti *et al*, 2007)
- Dissemination is through contaminated water sources, latently infected seedlings and contaminated soils spread through human activity (Swanson *et al*., 2007)
- Disease development is favored by high temperatures and moist soil

Introduction….

- Once introduced in a field, *R. solanacearum* is difficult to eradicate but can be suppressed through soil sterilization (fumigation and solarization), crop rotation, flooding and use of soil amendments

- Crop rotation and flooding are not feasible options due to dwindling arable farm sizes

- Solarization is rendered ineffective by re-introduction of the pathogen through run off water and soil contamination

- Fumigation options are limited by their environmental effects and cost

- Host plant resistance is the only effective management of soil borne diseases (Besri, 2005)

Introduction….

- However, commercial varieties with high and stable resistance as well as good characteristics are not available in East Africa
- Tomato grafting using resistant rootstock and scion of commercial varieties has been used in effective management of bacterial wilt in other countries (King *et al*., 2008)

- In Uganda, cultivar MT-56 with good resistance but poor fruit market value has been evaluated and used as rootstock

- Other closely related germplasm evaluated in other countries include: eggplant (*Solanum melongera*), pepper (*Solanum incunum*) and *Solanum violaceaum*

Tomato Bacterial wilt Management Strategies

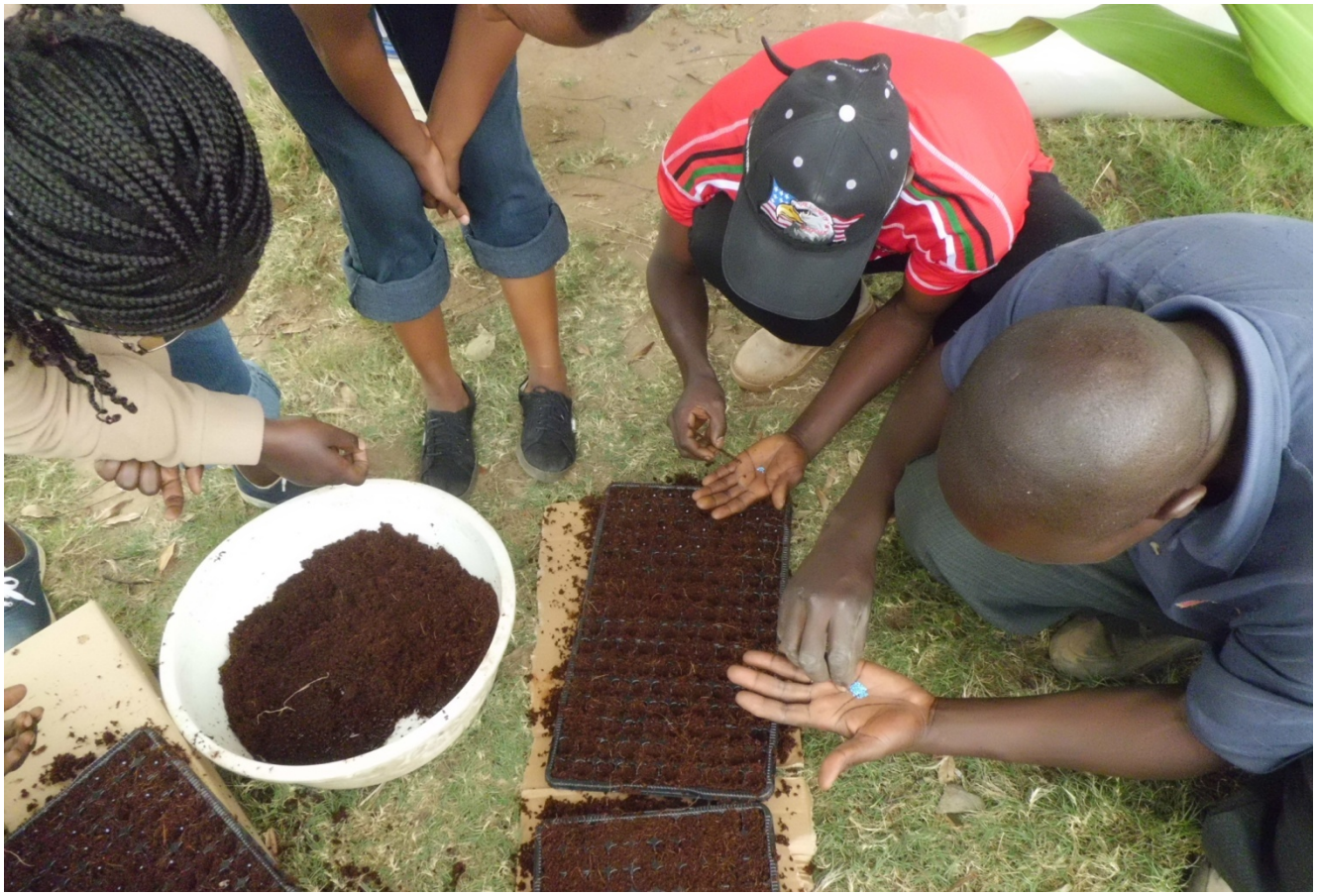
1.Farmer training on disease diagnostics

- Accurate disease identification leads to effective management

- Some farmers would out of ignorance use fungicides for management of tomato wilt

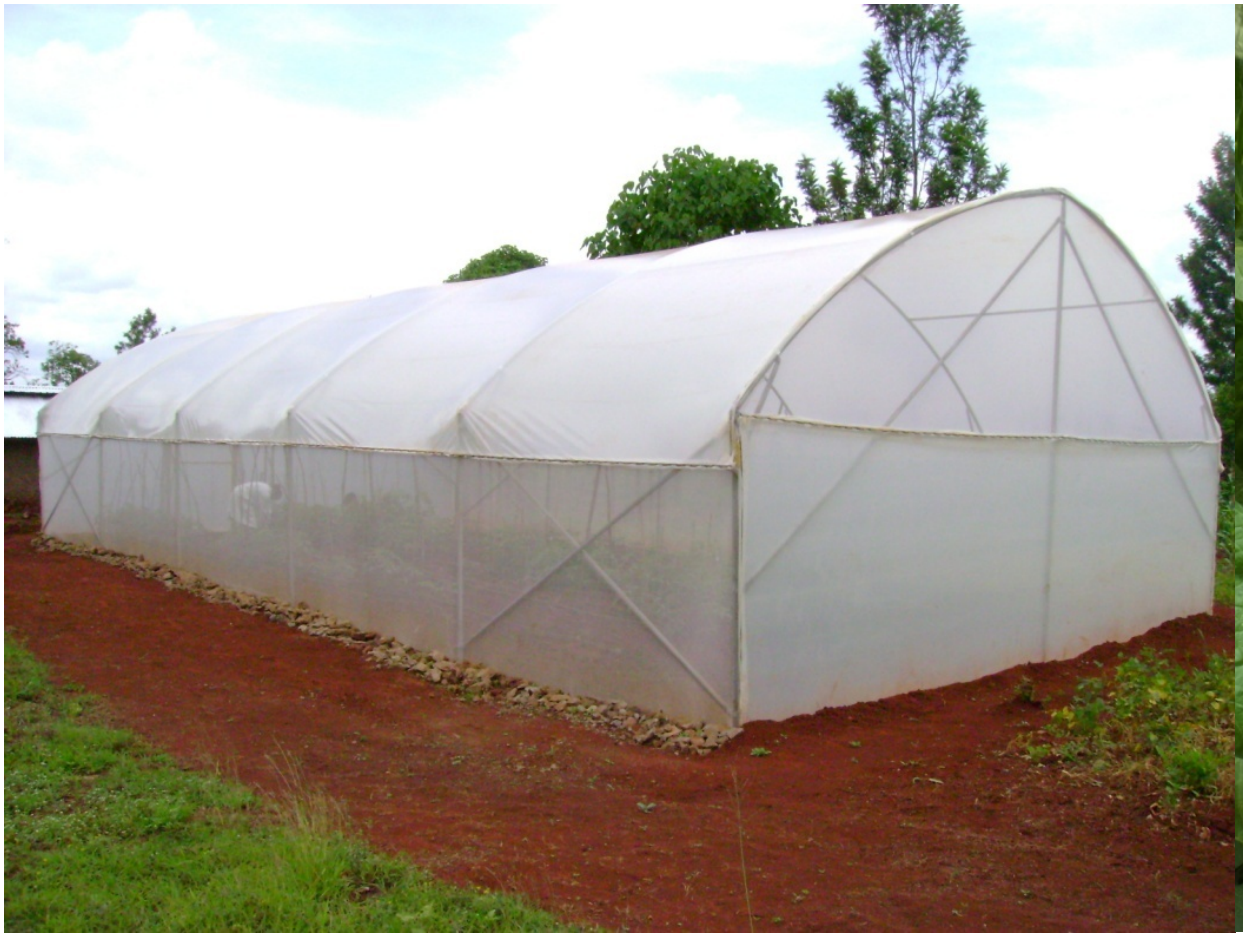
- After the training they understood that there were no chemicals for effective management of bacterial wilt

2. Establishment of clean seedlings



Use of coco peat in germination trays

2. Tomato production in high tunnels



Advantages of high tunnel production

- Economizing on land, labor and farm inputs
- Increases water use efficiency-Drip irrigation
- High quality produce
- Production all year round
- Minimal use of pesticides (double exclusion door)
- Considered by youth as a **smart-more youth involvement in farming**

Challenges in high tunnels

Bacterial wilt in an high tunnel

Challenges ……

- Bacterial wilt is still a major challenge due to:

1. Presence of high inoculum in soil
2. Use of contaminated water
3. Limited hygiene in high tunnels-re-introduction

Managing bacterial wilt in high tunnels

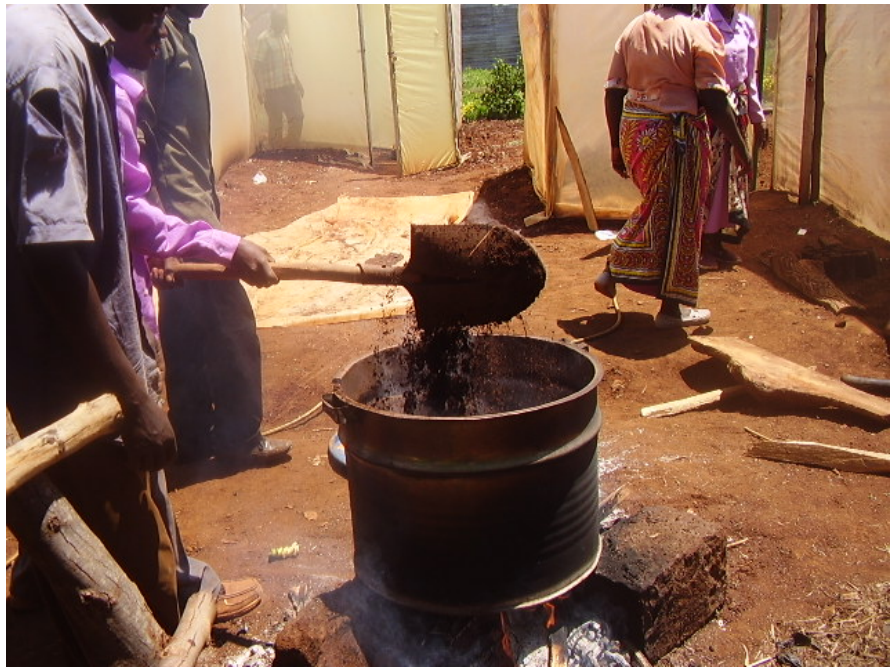
1. Solarization

- Cost of polythene paper is cited as a constraint
- Some areas not hot enough
- Need to know how deep heating can go into the soil
- How far the bacteria are

Managing bacterial wilt in high tunnels…..

2. Sterilizing by heating

- The cost of fuel (wood) may be prohibitive
- Process may pose danger for the workers
- Can only be done for the nursery
- Pathogen can easily be re-introduced through handling



Grafting as a sustainable solution

- MT-56 use as rootstock
- Cleft wedge grafting
- Others evaluated include:
- Cherry tomato & *solanum incanum*
- Scion- commercial varieties

Farmer training on grafting

- Trained farmers become trainers

Gafting…..

Farmer attending to a crop from grafted seedlings

Dissemination

- Farmer and extension staff training for a
- Scientific conferences and workshops
- Local media
- Posts to the internet e.g farmbizafrica.com
- Mobile communications

THANK YOU