Introduction

- While maize is the staple food crop in Malawi

- Sweetpotato is also important in crop diversification as a secondary source of carbohydrate

- It is a source of employment and cash incomes and several important nutrients
<table>
<thead>
<tr>
<th>Varieties</th>
<th>Yield (t/ha)</th>
<th>Origin</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoyera and Kamchiputu</td>
<td>3-7</td>
<td>Local</td>
<td>Eroded- recommended early 80’s</td>
</tr>
<tr>
<td>Lunyangwa</td>
<td>20</td>
<td>Local bred</td>
<td>Released early 1990, low adoption</td>
</tr>
<tr>
<td>Kakoma (TIS 3017)</td>
<td>20-25</td>
<td>IITA</td>
<td>Released in 1994, low adoption</td>
</tr>
<tr>
<td>Semusa (Cemsa 74-288)</td>
<td>25-30</td>
<td>CIP</td>
<td>Released in 1999, Highest yielding among the released, being adopted</td>
</tr>
<tr>
<td>Mugamba (Mogamba)</td>
<td>20-25</td>
<td>CIP</td>
<td>Released in 1999, low adoption</td>
</tr>
<tr>
<td>Tainoni (Tainon 57)</td>
<td>20</td>
<td>AVRDC</td>
<td>Released in 1999, low adoption</td>
</tr>
<tr>
<td>Salera (CIP1941 121)</td>
<td>20-25</td>
<td>CIP</td>
<td>Released in 2002, low adoption</td>
</tr>
<tr>
<td>Zondeni</td>
<td>8-16</td>
<td>Local</td>
<td>Recommended 2008-increased uptake</td>
</tr>
<tr>
<td>Sakananthaka</td>
<td>20-25</td>
<td>Local bred</td>
<td>Released 2008- being adopted</td>
</tr>
</tbody>
</table>
Sweetpotato projects

To complement Gov efforts

Breeding sweetpotato in Malawi for Malawi:
- funded by Alliance for a Green Revolution in Africa (AGRA)
- Aim at variety development (diversification)

Rooting out Hunger in Malawi with Nutritious Orange-fleshed Sweetpotato:
- funded by Irish Aid through International Potato Centre (CIP)
- Aim at improving seed system for farmers to access disease free seed on time (OFSP)
- Value chains
Overall objectives of R & D

To improve rural livelihood

- Important in crop diversification for improved food and nutrition (vitamin A) security

- Source of employment and cash incomes
Implementing Partners

- International Potato Center (CIP)
- The Department of Agricultural Research Services (DARS)
- Concern Universal (CU, Dedza and Phalombe)
- Chikhwawa-Catholic Development Commission (CADECOM)
- The Millennium Village Project (Zomba)
- The Department of Agricultural Extension Services (DAES) and crops (DCD)
Progress - breeding activities

On-station activities

Population development and screening

Over 6000 true seeds in a seedling nursery

Clonal nursery in 2 sites (Makoka and Bvumbwe - under speed breeding)
Over 1200 clones

PYT, AYT and UYT multi-site genotype evaluation
More challenges

White grub
Promising genotypes

**Orange fleshed**
LU06/0146
LU06/0428
LU06/0252
LU06/0527
BV07/008
BV07/019
BV07/028

**White fleshed**
LU06/0056, LU06/0137,
LU06/0196, LU06/0258,
LU06/0299, LU06/0432

Yields≥20t/ha
LU06/0252

- Medium dry matter - 28%
- Medium tolerance to weevil and white grab
- Very good vegetative retention for seed and vegetable
LU06/0527
- Orange fleshed
- Tolerant to weevil
- Moderate tolerance to white grab
- Pale orange
- Best under irrigation and residual moisture conditions in the very hot to hot areas of the Shire Valley
- Edible leaf vegetable
LU06/0428

Very early maturing - 3 moths and therefore good for piece harvesting

- Yields up to 30t/ha
- Edible roots
BV07/008

- Over 25t/ha
- High dry matter content - 33%
On-farm activities

Participatory genotype evaluation and variety development
Seed systems activities

- strengthening the partnership with other gvt departments, NGOs, and private sector
- Seed systems establishment - 3 tier training, visits, and field days
- voucher systems for vine dissemination
- product development and markets
Progress - seed systems

- 4 ha Zondeni (1.5ha other varieties) Primary Multiplication at BV
- 4,033 plantlets of disease free Zondeni to serve as foundation seed stock
- Capacity building - human and infrastructure
- Demand creation - dances, poetry, songs, banners etc)
A 1, 2, 3 (primary, secondary, tertiary) system was implemented:

**Primary**
- Bvumbwe Research Station—2 ha (Y1);
- 4 ha (Y2, Oct. 2010) and tissue culture lab

**Secondary**
- Group of farmers supervised by extension and NGOs; act as demos
- Trained multipliers—4 ha

**Tertiary**
- Decentralized individual or group multipliers, trained (DVMs)

To Producer
Sweetpotato Value addition

Small scale enterprises

Price fluctuations of fresh roots (season)
Utilise the excess produce for more money - nutritious scones/buns (OFSP)
Member of Parliament

Saw this as one of the solutions to sweetpotato market problems

Wants to see replication of the unit
Large scale processors

Sweetpotato crisp - Cordiner, LU06/0527, Mugande, Kenya, LU06/0428, LU06/0252, Zondeni
Sweetpotato flour

• Biscuits from Zondeni flour
• Biscuits ranked high
• Needs more study- pro-vitamin A content in the final product (biscuits)
• Need explore other bakeries
Future plans

- Release of new varieties, cleaning (in-vitro) and multiplication of the new varieties
  → 0.1 ha each variety by November 2011

- Vine beneficiary target (November 2011)
  - 24,000 new households to receive subsidized vouchers
    → 6,000 households per district (4 districts - Chikhwawa, Zomba, Phalombe and Dedza)

More work on value addition and marketing
Thank you very much for your attention