Developing and Disseminating Biofortified Crops Project

Update on Scaling Up in Uganda

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Country Manager
HarvestPlus Uganda

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Research Scientist
CIP Uganda
# Acknowledgements

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<th>USAID</th>
<th>IFPRI – PHND</th>
<th>World Vision</th>
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<td>International Potato</td>
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<td>Makerere University</td>
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<td>Science)</td>
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<td>NARO – Bean Program,</td>
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<td>Sweet Potato Program</td>
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<td>BioCrops Ltd</td>
<td>Africa 2000 Network UG</td>
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<td>Healthy Child Uganda</td>
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<td>Farm Radio International</td>
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Nutrition-led Agriculture
“From Lab to Plate”

• Scaling up with lighter integrated intervention, greater focus on crop diffusion

• 225,000 farming households with OSP and high iron beans (reaching over 1.3 million)
Better Crops, Better Nutrition

Adding iron through beans – more micronutrients ...
Spread in the Country

World Vision

VEDCO

CEDO

Caritas

Samaritan's Purse

Africa 2000 Network

MVP & HCU

Legend:
- OSP Implementation
- OSP Commercial Growers
- OSP Vine Multipliers
- Bean Multiplication
Updates

Radio Mini Drama and Poll Questions

Commercialised Farmers

Clean Vines
My Children - Radio Mini Drama
(Farm Radio International)

"a heady mix of love, domestic strife and... orange sweet potato..."

30 episodes
6 languages
13 radio stations

*PRC campaign in 2 stations under Gates funding
• Poll question attached to each Drama episode
• General interest questions and real time consumer feedback questions
Commercial Growers - John Ekanya

Breaking into Markets
Support through

- Clean Materials
- Deliberate linking to traders and marketing
- Doing promotions
- Helping smooth bottlenecks
Aiming for Urban Markets ...
Supporting seed systems: SPVD and decreased yields
Delivering Quality Declared Vines

In vitro culture virus elimination and multiplication

Mother stock multiplication in the screen house

Multiplication sites in isolated fields in districts

Multiplication sites in farmers fields at sub county level

Clean sweet potato vines in farmers fields
Lab Intervention: Tissue Culture

Makerere University – Crop Science
Virus Free Vine Production in a Protected environment

BioCrops Ltd – private company
Clean Vines to Secondary VMs
Tertiary Vine Multipliers

- Predominantly focused on sale of vines.
- Selling roots to local markets and schools
The Late Eugene Ekinyu, SOSPPA
Promoting application of the Triple “S” method in northern Uganda

Namanda S., Mwanga R., Kyalo R., Low J. & Musoke C.
Objective
Promote the use of Triple S technology at scale and build a cadre of trained extension personal to monitor its adoption

Approach
• Identified, sensitised, trained community resource persons (CRPs) and extension workers in 4 selected districts in northern Uganda
• Conducted Triple S demonstrations
Positive selection of seed roots
### Results:

Mean # of 30-cm long cuttings harvested

<table>
<thead>
<tr>
<th>District</th>
<th>Site</th>
<th>Triple S</th>
<th>Previous fields</th>
<th>Lsd&lt;sub&gt;0.05&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulu</td>
<td>Acaye</td>
<td>39.7</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>Gulu</td>
<td>Minakulu</td>
<td>19.3</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Oyam</td>
<td>Akello</td>
<td>39.3</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Oyam</td>
<td>Renge</td>
<td>35.8</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Lira/Kole</td>
<td>Akoi</td>
<td>44.9</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Lira/Kole</td>
<td>Petwa</td>
<td>86.7</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Lsd&lt;sub&gt;0.05&lt;/sub&gt;</td>
<td></td>
<td></td>
<td></td>
<td>4.68&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
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</table>

<sup>a</sup> Separation of means between sites, and <sup>b</sup> separation of means between sources of planting material
Emerging issues

• Planting a crop for seed root production

• Curing roots before storage

• Using roots coming from clean (tissue culture material)
Comparing yield performance of tissue culture and farmer own sources of vines

Namanda S., Mwanga R., Kyalo R., Low J. & Musoke C

Objectives

- Farmers to appreciate the use of clean planting material
- Determine how many seasons the clean material can be re-cycled on farmers fields
## Demonstration design

<table>
<thead>
<tr>
<th>Season</th>
<th>Biocrops</th>
<th>Biocrops re-cycled</th>
<th>Farmer source</th>
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<tbody>
<tr>
<td>2012b</td>
<td>Biocrops lot 1</td>
<td>-</td>
<td>Existing</td>
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<tr>
<td>2013a</td>
<td>Biocrops lot 2</td>
<td>Biocrops lot 1: Cycle 1</td>
<td>Farmer 2012b</td>
</tr>
<tr>
<td>2013b</td>
<td>Biocrops lot 3</td>
<td>Biocrops lot 1: Cycle 2</td>
<td>Farmer 2013a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biocrops lot 2: Cycle 1</td>
<td></td>
</tr>
<tr>
<td>2014a</td>
<td>-</td>
<td>Biocrops lot 1: Cycle 3</td>
<td>Farmer 2013b</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biocrops lot 2: Cycle 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biocrops lot 3: Cycle 1</td>
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**Ejumula and Kabode varieties**
Mean SPVD infection levels & root yield (tons/Ha) using different source of vines for season 2013a

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Source of vines planted</th>
<th>Lsd_{0.05}</th>
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<tbody>
<tr>
<td></td>
<td>Biocrops</td>
<td>B-cycle 1</td>
</tr>
<tr>
<td>SPVD inf. score</td>
<td>1.0</td>
<td>1.4</td>
</tr>
<tr>
<td>Mkt root yield</td>
<td>4.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Total root yield</td>
<td>5.5</td>
<td>3.5</td>
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<tr>
<td>NB: SPVD score on a scale of 1 – 9: 1 = no symptoms and 9 = severe</td>
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NB: SPVD score on a scale of 1 – 9: 1 = no symptoms and 9 = severe
Effects of curing and storage options on the shelf life of harvested orange sweetpotato roots in Uganda

Kyalo, G., Mwanga, R., Namanda S. & Low, J.

Objective:
• Prolong the shelf life of stored roots without compromising the organoleptic characteristics

Progress:
• Poster will be presented by Gerald at ACSS conference
...as simple as a sweet potato