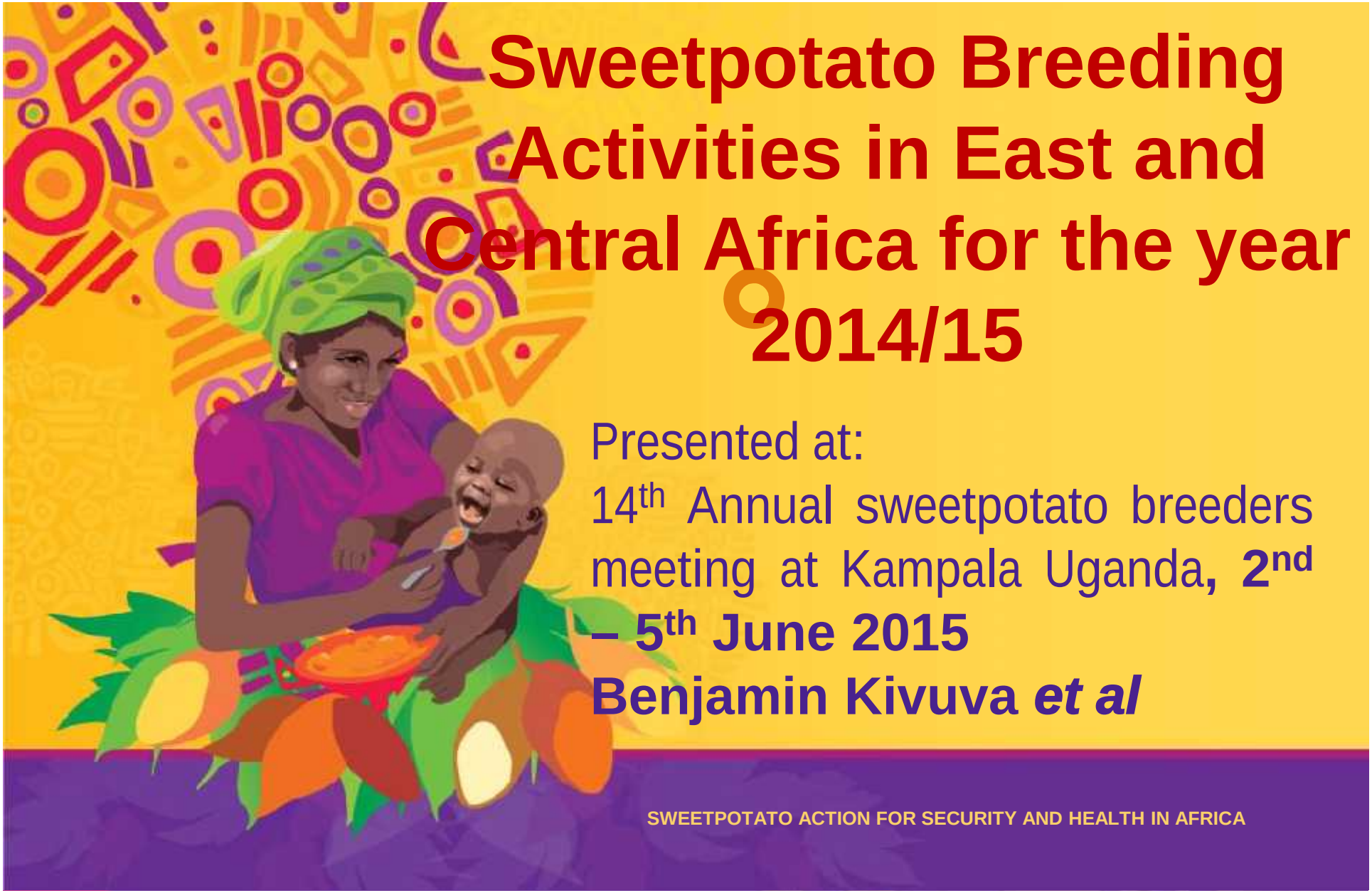


# Sweetpotato Breeding Activities in East and Central Africa for the year 2014/15

Presented at:

14th Annual sweetpotato breeders meeting at Kampala Uganda, **2nd – 5th June 2015**

**Benjamin Kivuva *et al***

SWEETPOTATO ACTION FOR SECURITY AND HEALTH IN AFRICA

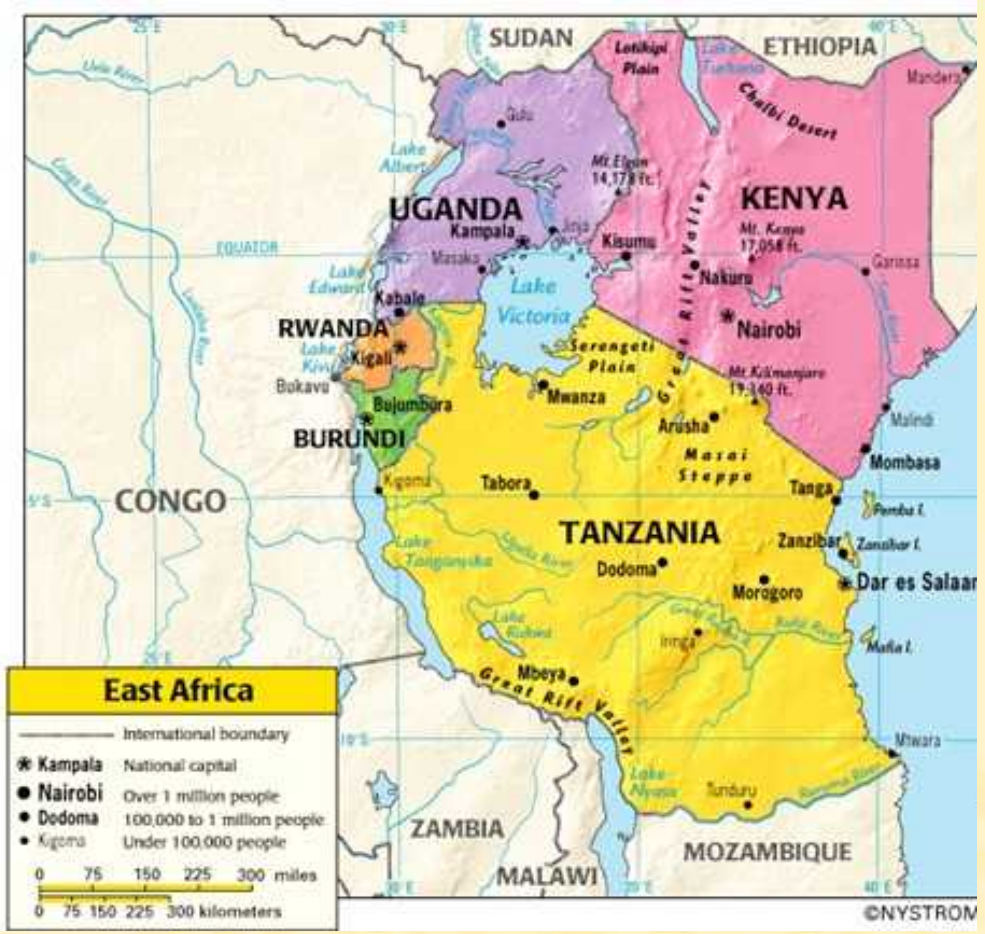
# Format of presentation

- Introduction
- Constraints and objectives
- Landraces
- Released varieties
- OFSP varieties
- OFSP varieties in East Africa countries
- A summary of released varieties, clone selector use, funding and publications

# Introduction

**Sub-region**: East Africa

**Countries:** Uganda, Tanzania, Kenya, Rwanda, and Ethiopia



# Introduction: Presenters

- Uganda: Gorrettie Ssemakula, Milton Anyanga , Benard Yada, G. Kyalo J. Namakula, C. Kigozi & Robert Mwanga.
- Kenya: **Benjamin Kivuva, Laura Karanja, Joyce Malinga, Sammy Agili. 2014.**
- Tanzania: E. Lukonge, K. Mtunda, H. Kulembeka, R. Amour, H. Musa, L. Lembris, B. Chirimi, L.Lyimo, M. Yongolo and H. Kiozya
- Ethiopia: **Fekudu Gumu**,
- Rwanda: **Ndirigwe J., Shumbusha D., Rukundo P. and Kankundiye L.**

# Important constraints

- **Tanzania:** Low yield, SP weevils and SPVD, drought, and low DM of OFSP
- **Uganda:** SPVD, Alternaria, weevils
- **Ethiopia:** SPVD, SP weevil, low yield and low dry matter content of OFSP
- **Kenya:** SPVD, Alternaria and weevils, Drought, low yield, low dry matter in OFSP, in-adequate research funds, and few breeders.
- **Rwanda:** Low yield, dual purpose varieties, low DM, low ß-carotene, SPVD, Weevil

# Objectives

**Uganda:**

- Develop high DM, resistance to SPVD and Alternaria blight, and high *B*-carotene SP varieties
- To promote diversified utilization, i.e. food/ processing
- To promote linkages, and distribution of breeder seed to seed entrepreneurs
- To promote technical and training support to CBOs, NGOs, and farmers seed producers

**Tanzania:**

- To improve root yield production
- To increase SP resistance to SPVD and weevil
- To screen for drought resistance
- To improve beta carotene and dry matter content of OFSP

# Objectives continued

**Ethiopia:**

- To improve beta-carotene and root dry matter content of OFSP
- To improve resistance to SPVD and weevil
- To improve root yield
- To improve sweetpotato quality planting material production and seed system in the country

**Kenya:**

- To develop drought tolerant SP varieties
- To improve beta-carotene and root dry matter content of OFSP
- To improve resistance to SPVD and weevil

# Objectives continued

- To improve root yield of SP varieties adapted to broad and specific Agro Eco zones
- To promote production of quality planting material of SP and sustainable seed system

**Rwanda:**

- To develop high yield dual purpose varieties
- To improve root DM, and ß-carotene
- To improve tolerance to SPVD and *Alternaria*
- To breed varieties suitable for specific or wide adaptation, and/ with farmer preferences
- Breeding drough tolerant varieties

# Most important SP landraces in Uganda

| Landrace | Root yield t/ha stn (farm) | Flesh color | Dry matter (%) | Earliness | SPVD | Alt | Remarks |
|---|---|---|---|---|---|---|---|
| Ejumula | 19 (15) | O | 34 | E | S | M | S to SPW, released 2004 |
| Kakamega | 15 (12) | LO | 31-32 | E | M | M | S to SPW, released 2004 |
| Semanda | ??(25) | Cr | 35 | E | M | R | Commercialized along Masaka road |
| New Dimbuka (Buluula) | ?? (40) | Cr | 32-34 | E | S | M | Spreading widely, likely escaped from breeding pipeline |

Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important landraces in Tanzania

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Polista | L | 17.8 | Cr | | 34.6 | L | R | R | Mr | 2013 |
| Mwanatata | L | 19.3 | Cr | | 33.2 | E | S | R | Mr | In pipeline |
| Umeme | L | 17.8 | W | | 30.0 | E | S | R | Mr | In pipeline |
| Isaka | L | 14.6 | W | | 33.6 | E | Mr | R | Mr | Evaluation |
| Njugu karroti | L | 15.2 | Lo | Not analyzed | 30.7 | E | Mr | R | Mr | Evaluation |
| Kigambirenyok | L | 14.8 | W | | 32.0 | E | Mr | R | Mr | In pipeline |
| Kiliona | L | 13.4 | Cr | | 33.1 | E | Mr | R | Mr | |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important landraces in Tanzania

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Berena | L | 14.6 | Cr | | 34 | E | Mr | R | Mr | |
| Mzondwa | L | 12.6 | Cr | | 31.8 | E | Mr | R | Mr | |
| Matege | L | 13.7 | cr | | 32.6 | E | Mr | R | Mr | Multilocation |
| Nzugu na tella | L | 14.2 | Cr | | 33 | E | Mr | R | Mr | Multilocation |
| Bertha | Lo | 15.0 | cr | | 33.2 | E | Mr | R | Mr | Multilocation |
| Mbutu | L | 16.0 | Cr | | 34.0 | E | Mr | R | Mr | |
| Shangazi | L | 12.0 | W | | 33.0 | E | Mr | R | Mr | |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important landraces in Rwanda

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPV D | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Karibunduki | L | 22 | W | _ | 37 | L | R | R | M | WS &WR/ 1990 |
| Mubiriwigisabo | L | 18 | W | _ | 36 | L | R | R | M | |
| Kigande | L | 20 | Y | _ | 37 | L | R | R | M | WS &WR/ 1990 |
| Mpakanjye | L | 16 | Y | _ | 35 | E | S | R | M | |
| Mamesa II | B | 16 | Y | _ | 34 | E | R | R | S | LS &WR/ 1988 |
| Ndamirabana (Old) | B | 20 | W | _ | _ | L | R | R | M | WS &WR/ 1990 |
| Rukoma | L | 14 | W | _ | _ | L | | S | M | LS &WR/ 1986 |
| Imbyo | L | 14 | W | _ | 36 | L | R | R | M | LS &WR/ 1986 |
| Rukubikondo | L | 18 | W | _ | 37 | L | R | R | M | LS &WR/ 1986 |

# Most important landraces in Kenya

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Gatumbi | L | 15.2 | Y | | 30.7 | E | M | R | Mr | |
| Marooko | L | 17.5 | W | | 32.4 | L | M | R | Mr | |
| Mugande | L | 16.8 | W | | 32.2 | M | R | R | S | |
| Nyatonge | L | 18.2 | W | | 29.4 | E | M | R | M | |
| Kunykibuonjo | L | 19.0 | W | | 30 | L | M | R | Mr | |
| Bungoma | L | 17.2 | Y | | 28.2 | M | M | R | S | |

# Most important released SP varieties in Uganda

| Variety | Root yield t/ha- Stn (farm) | Flesh color | Dry matter | Early | SPVD | Alt | Remarks All Varieties are susceptible to SPW |
|---|---|---|---|---|---|---|---|
| NASPOT 1 | 29(20) | Y | 35-36 | E | M | S | Released 1999 |
| NASPOT 8 | 20 (16) | O | 32-34 | E | M | M | Released 2007 |
| NASPOT 10 O (Kabode) | 18 (12) | O | 28-32 | E | M | M | Released 2007 |
| NASPOT 11 | 38 (20) | Cr | 30-36 | E | M | R | Released 2010 |
| NASPOT 12 | 25 (16) | O | 31-33 | E | M | R | Released 2013 |

# Most important released varieties in Ethiopia

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released | Released (R) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Kudade | | 24.1 | W | | | | | | | 1997 | R |
| 2. Dubo | | 21.7 | W | | | | | | | 1997 | R |
| 3. Falaha | | 16.7 | W | | | | | | | 1997 | R |
| 4. Guntute | | 35.4 | O | | | | | | | 1997 | R |
| 5. Damota | | 30.7 | O | | | | | | | 1997 | R |
| 6. Bareda | | 29.6 | O | | | | | | | 1997 | R |
| 7. Awassa-83 | | 36.6 | W | | | | | | | 1998 | R |
| 8. Belela | | 17.6 | W | | | | | | | 2002 | R |
| 9. Temesgen | | 18.3 | W | | | | | | | 2004 | R |

# Most important released varieties in Ethiopia

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released | Released (R) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10. Beletech | | 18.5 | W | | | | | | | 2004 | R |
| 11. Ordolo | | 17.4 | W | | | | | | | 2005 | R |
| 12. Koka-12 | | 17.7 | W | | | | | | | 1987 | R |
| 13. Koka-6 | | 26.9 | W | | | | | | | 1987 | R |
| 14. Kulfo | | 27.0 | O | | | | | | | 2005 | R |
| 15. Tulla | | 28.5 | O | | | | | | | 2005 | R |
| 16. Kero | | 35.4 | O | | | | | | | 2005 | R |
| 17. Mae | | - | W | | | | | | | 2010 | R |
| 18. Berkume | | - | | | | | | | | | |

# Most important released varieties in TANZANIA

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Simama | B | 20.3 | Cr | | 33.8 | E | Mr | R | Mr | 2002 |
| Sinia B | L | 10-20 | Cr | | 31.3 | E | Mr | R | Mr | 2002 |
| Jitihada | B | 10-30 | Cr | | 33.4 | E | Mr | R | Mr | 2002 |
| Vumilia | B | 10-20 | Cr | | 34.1 | E | Mr | R | Mr | 2002 |
| Mavuno | B | 10-30 | Cr | | 33.9 | E | Mr | R | Mr | 2002 |
| Polista | L | 17.8 | Cr | | 34.6 | L | Mr | R | Mr | 2013 |
| Mazao | B | 21 | Cr | | 33.0 | E | Mr | R | Mr | 2013 |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important released varieties in TANZANIA

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Kakamega | B | 16.5 | Lo | 0.38-3.76 | 32.0 | E | mr | r | mr | 2013 |
| Mlezi | L | 14.7 | O | 0.78-14.37 | 33.0 | E | s | r | lo | 2013 |
| Ukerewe | L | 17.8 | Cr | | 34.3 | E | mr | r | mr | 2010 |
| Kiegea | B | 13.2 | O | 1.5-2 | 30.7 | E | Mr | mr | mr | 2011 |
| Mataya | B | 15.0 | O | 5-6 | 30.4 | E | s | mr | Mr | 2011 |
| Mayai | L | 10 | do | 11.03 | 32.5 | E | Mr | r | Mr | 2011 |
| Polista | L | 17.8 | Cr | | 34.6 | L | mr | r | r | 2013 |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important released SP varieties in Rwanda

| Name of varieties | Root (T/ha) | Flesh color | DM (%) | Earl | SPVD | Alt | Year of release |
|---|---|---|---|---|---|---|---|
| Mugande | 30-35 | W | 37 | L | R | R | 1990 |
| Karebe | 30 | W | 35 | L | R | R | 1988 |
| Rusenya | 25 | W | 37 | L | R | S | 1990 |
| Wadada | 25 | W | 35 | L | S | R | 1988 |
| Cacearpedo | 20-22 | **do** | 34 | E | S | R | 2013 |
| Gihingamukungu | 30-35 | **do** | 28 | E | R | R | 2013 |
| Giramata/RW11-1860 | 25-30 | **W** | **37** | L | | **S** | 2013 |
| Terimber/RW11-2560 | 20-25 | **do** | 28-30 | L | R | R | 2013 |
| Ndamirabana/RW11-2910 | 30 | **lo** | 35 | L | R | R | 2013 |
| Ukerewe | 20-22 | **Y** | 37 | E | R | R | 2013 |
| VITA | 20-25 | **do** | 34 | E | R | R | 2014 |
| KABODE | 20-25 | **do** | 34 | E | R | R | 2014 |

**Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)**

# Most important released varieties in Kenya

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released | Released (R) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ksp 20 | B | 19.3 | Cr | | 29.2 | E | | R | S | 2001 | R |
| Ksp-28 | ? | 18.2 | W | | 30.2 | E | | R | S | | |
| Spk 004 | B | 16.5 | LO | 3.7 | 32 | E | | | | 2001 | R |
| SPK 031 | B | 18.4 | LO | | 31.2 | E | | R | S | 2014 | R |
| Kemb 10 | B | 18 | O | | 26 | M | S | - | S | 2001 | R |
| Vitaa | B | 16.5 | O | 11.0 | 30.1 | E | R | M | S | 2014 | R |
| Kabonde | B | 16.0 | O | 11.03 | 30.5 | E | M | M | S | 2014 | R |

# Most important released varieties in Kenya

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Kenspot 1** | **B** | **23** | **Y** | **0.15** | **29.4** | **L** | **Mr** | **R** | **Mr** | **2013** |
| **Kenspot 3** | **B** | **18.7** | **LO** | **1.38** | **32.5** | **L** | **Mr** | **S** | **Mr** | **2013** |
| **Kenspot 4** | **B** | **17.1** | **O** | **3.96** | **30.2** | **L** | **Mr** | **R** | **Mr** | **2013** |
| **Kenspot 5** | **B** | **14.8** | **O** | **5.94** | **25.9** | **L** | **Mr** | **R** | **Mr** | **2013** |

**Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)**

# Most widely grown variety in Uganda

| Name variety | Status (L/B) | Yield (t/ha)- Stn (farm) | Flesh color | ß-carotene (mg/100g FWB) | Dry matter (%) | Earl | SPVD | Alt | SPW | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| NASPOT 8 | B | 20 (16) | O | 3.76 | 32-34 | E | M | M | S | Released 2007, spread by NGOs |
| NASPOT 11 | B | 38 (20) | C | ~0 | 33-35 | E | M | R | S | Released in 2011 |
| NASPOT 12 | B | 28 (16) | O | 7.23 | | | | | | Released in 2013, being spread by NGOs |
| New Dimbuka | L?? | (40) | C | ~0 | 32-34 | E | S | M | S | Spreading very fast |

# Most widely grown variety in Ethiopia

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100 g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released | Released (R) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Awassa-83 | | 36.6 | W | | | | | | | 1998 | R |
| 2. Kulfo | | 27.0 | O | | | | | | | 2005 | R |
| 3. Tulla | | 28.5 | O | | | | | | | 2005 | R |
| | | | | | | | | | | | |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most widely grown variety in Rwanda

| Name of varieties | Root (T/ha) | Flesh color | DM (%) | Earl | SPVD | Alt | Year of release |
|---|---|---|---|---|---|---|---|
| Mugande | 30-35 | W | 37 | L | R | R | 1990 |
| Karebe | 30 | **W** | 35 | L | R | R | 1988 |
| Wadada | 30 | **W** | 35 | L | R | R | 1990 |
| Seruruseke | 25-30 | **W** | 35 | L | R | R | 1990 |
| Kwezikumwe | 20-22 | **Y** | 33 | E | R | R | 1992 |

**Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)**

# Most widely grown variety in Kenya

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released | Released (R) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bungoma | L | 17.2 | Y | | 28.2 | M | M | R | S | | |
| Kabonde | B | 16.0 | O | 11.03 | 30.5 | E | M | M | S | 2014 | R |
| Spk 004 | B | 16.5 | LO | 3.7 | 32 | E | | | | 2001 | R |
| SPK 031 | B | 18.4 | LO | | 31.2 | E | | R | S | 2014 | R |
| Kemb 10 | B | 18 | O | | 26 | M | S | - | S | 2001 | R |
| Vitaa | B | 16.5 | O | 11.0 | 30.1 | E | R | M | S | 2014 | R |

# Most widely grown varieties in Kenya

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Kenspot 1 | B | 23 | Y | 0.15 | 29.4 | L | Mr | R | Mr | 2013 |
| Kenspot 3 | B | 18.7 | LO | 1.38 | 32.5 | L | Mr | S | Mr | 2013 |
| Kenspot 4 | B | 17.1 | O | 3.96 | 30.2 | L | Mr | R | Mr | 2013 |
| Kenspot 5 | B | 14.8 | O | 5.94 | 25.9 | L | Mr | R | Mr | 2013 |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important OFSP varieties in Uganda

| Name variety | Status (L/B) | Yield (t/ha)- Stn (farm) | Flesh color | ß-carotene (mg/100g fwb) | DM (%) | Earl | SPVD | Alt | SPW | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| NASPOT 8 | B | 20 (16) | O | 3.76 | 32-34 | E | M | M | S | Released 2007 |
| NASPOT 12 | B | 28 (16) | O | 7.23 | 31-33 | E | M | M | S | Released in 2013, being spread by NGOs |
| NASPOT 10 | B | 18(12) | O | | | | | | | |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important OFSP varieties in Ethiopia

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released | Released (R) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Kulfo | B | 27.0 | O | | | | | | | 2005 | R |
| 2. Tulla | B | 28.5 | O | | | | | | | 2005 | R |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.) | | | | | | | | | | | |

# Most important OFSP varieties in TANZANIA

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Kabode | B | 20.6 | lo | Not analyzed | 33 | E | Mr | R | Mr | In pipeline |
| Mlezi | L | 16.0 | o | 7.7-14.4 | 33.8 | E | S | R | Mr | 2013 |
| Kakamega | B | 16.5 | lo | 0.38-3.76 | 32.0 | E | Mr | R | Mr | 2013 |
| Jewel | B | 21 | do | 11.03 | 28 | E | S | R | Mr | |
| Njugu carrot | L | 13.7 | o | Not analyzed | 31.2 | E | Mr | R | Mr | In pipeline |
| UKM 2001/05 | B | 13.5 | lo | Not analysed | 29.8 | E | Mr | R | Mr | In pipeline |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important OFSP varieties in Kenya

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Kenspot 4 | B | 17.1 | O | 3.96 | 30.4 | L | Mr | R | Mr | 2013 |
| Kenspot 5 | B | 14.8 | O | 5.49 | 25.9 | L | Mr | R | Mr | 2013 |
| Kakamega | B | 3.76 | O | 3.76 | 32.0 | E | Mr | Mr | S | 2014 |
| Vitaa | B | 16.5 | O | 11.03 | 30.1 | E | R | Mr | S | 2014 |
| Kabodee | B | 16.5 | O | 11.03 | 30.5 | E | R | Mr | S | 2014 |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important OFSP varieties in E. & Central Africa

| Name Country variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Kiegea | B | 13.2 | O | 1.5-2 | 30.7 | E | Mr | mr | mr | 2011 |
| Mataya | B | 15.0 | O | 5-6 | 30.4 | E | s | mr | Mr | 2011 |
| Carrot Dar | L | 12.0 | O | | 32.0 | E | S | R | Mr | Not released |
| NASPOT 8 | B | 20 (16) | O | 3.76 | 32-34 | E | M | M | S | Released 2007 |
| NASPOT 12 | B | 28 (16) | O | 7.23 | 31-33 | E | M | M | S | Released in 2013, being spread by NGOs |
| NASPOT 10 | B | 18(12) | O | | | | | | | |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important OFSP varieties in E. & Central Africa

| Name variety | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|
| Kabode | B | 20.6 | lo | Not analyzed | 33 | E | Mr | R | Mr | In pipeline |
| Mlezi | L | 16.0 | o | 7.7-14.4 | 33.8 | E | S | R | Mr | 2013 |
| Kakamega | B | 16.5 | lo | 0.38-3.76 | 32.0 | E | Mr | R | Mr | 2013 |
| Jewel | B | 21 | do | 11.03 | 28 | E | S | R | Mr | |
| Njugu carrot | L | 13.7 | o | Not analyzed | 31.2 | E | Mr | R | Mr | In pipeline |
| UKM 2001/05 | B | 13.5 | lo | Not analysed | 29.8 | E | Mr | R | Mr | In pipeline |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Most important OFSP varieties in E. & Central Africa

| Name variety | | Status (L/B) | Root yield (t/ha) | Flesh color | ß-carotene (mg/100g fwb) | Dry matter (%) | Earl | SPVD | Alt | Weevil | Remarks (E.g. Yr/released |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kenspot 4 | | B | 17.1 | O | 3.96 | 30.4 | L | Mr | | | 2013 |
| Kenspot 5 | | B | 14.8 | O | 5.49 | 25.9 | L | Mr | | | 2013 |
| Kakamega | | B | 3.76 | O | 3.76 | 32.0 | E | Mr | | S | 2014 |
| Vitaa | | B | 16.5 | O | 11.03 | 30.1 | E | R | M | S | 2014 |
| Kabodee | | B | 16.5 | O | 11.03 | 30.5 | E | R | M | S | 2014 |
| Kulfo | | | 27 | O | | | | | | | 2005 |
| Tulla | | | 28 | O | | | | | | | 2005 |

Status: Landrace (L), breeding line (B). Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o), deep orange (do). Earl (Earliness: Early (E) (about 4 mo), late (L) about 5 mo or more. SPVD/Weevil resistance (r: resistant, s:susceptible, mr: moderately resistant). Alt (Altenaria blight resistance, r: resistant, s: susceptible, mr: moderately res.)

# Sweetpotato trials/No. of clones planted last season 2014/2015

| Trial | Country/No of clones | | | | | |
|---|---|---|---|---|---|---|
| | Ethiopia | Rwanda | Kenya | Tanzania | Uganda | |
| Crossing block | 7 | 2 | - | 16 (EZ) | 27 | |
| Observation (OT) | 25 | 760 | - | 2641 | - | |
| No. of checks | 2 | 2 | - | 5 | 2 | |
| Preliminary yield (PT) | 6 | 125 | - | 70 | 35 | |
| No of checks | | 2 | - | 2 | 2 | |
| No. of locations | | 3 | - | 2 | 3 | |
| Advanced yield (AT) | | 25-30 | 26,15 | 14, 15,17 | 19,15,12 | |
| No. of checks | | 2 | 4,2 | 2, 2,3 | 5 | |
| No. of locations | | 4 | 2,4 | 2,5 | 4 | |
| On-farm | | 12 | 3 | 34 (3 sets) | 8 | |

# Last season (2014) analysis done in CloneSelector (Yes/Y, No/N)

| Trial | Country/Analysis | | | | | |
|---|---|---|---|---|---|---|
| | Ethiopia | Rwanda | Kenya | Tanzania | Uganda | |
| Observation (OT) | N | N | N | N | | |
| Preliminary yield (PT) | N | N | Y | Y | Y | |
| Advanced yield (AT) | N | N | Y | Y | Y | |
| On-farm | N | N | Y | Y | N | |
| No. of varieties released 2014 | | N | 1 | N | - | |
| [No. of OFSP] | N | N | N | N | | |
| No. of clones earmarked for release by 2015 | N | 2 | N | 4 | | |
| Foundation seed/ available | N | 8000 cuttings | 5,000 | 84.4 tons | | |

# Funding source for sweetpotato breeding/Foundation seed activities

| Source of funding | Country/Amount | | | | | |
|---|---|---|---|---|---|---|
| | Ethiopia | Rwanda | Kenya | Tanzania | Uganda | |
| Donor (breeding) | EG* | AGRA/ GoR* | AGRA & KAPAP, KOPIA,CIP | GoT | AGRA-185,000; 3yrs | |
| Donor (Foundation seed) | CIP | CIP/AGRA | AGRA & KAPAP, KOPIA | BMGF/CIP | GOU, Fluctuates | |
| Stock/Foundation seed | | 14 | | 1.2 tons | | |
| available (No. varieties) | 14 | 14 | 20,000 USD | 10 | | |
| Number of plants | 100 x 14 | 4500 | 4 | 228*10 | | |
| Donor (Pre- basic seed) | CIP | CIP/AGRA | AGRA & KAPAP, KOPIA | CIP | | |
| No. of Varieties | 1 | 7 | 2 | 8 | | |
| Number of plants | 10,000 | 350,000 | 100,000 | 3,700 | | |

# Publications: 1. **Uganda (6)**

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3. Niringiye C.S., Ssemakula G.N., Namakula J, Kigozi C.B., Alajo A., Mpembe I. and Mwanga R.O.M. 2014. Evaluation of promising sweet potato clones in selected agro ecological zones of Uganda. Time Journals of Agriculture and Veterinary Sciences 2(3):81-88.

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5. Sefasi A., Ssemakula G., Ghislain M., Prentice K., Kiggundu A., Mwanga R. and Mukasa S.B. 2014. Transient expression of b-glucuronidase in recalcitrant Ugandan sweetpotato and putative transformation with two cry genes. African Crop Science Journal 22 (3): 215 – 227
6. Tumwegamire, S., Mwanga, R.O.M., Andrade, M.I., Low, J., Ssemakula, G.N., Laurie, S.M., Chipungu, F.P., Ndirigue, J., Agili, S., Karanja, L., Chiona, M., Njoku, J.C., Mtunda, K., Ricardo, J., Adofo, K., Carey, E., Gruneberg W. 2014. Orange-fleshed Sweetpotato for Africa. Catalogue 2014(Second Edition). International potato Center (CIP) Lima Peru74pp

# 2. Ethiopia (3)


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9. Shiferaw Mekonen, Fikre Handoro, **Fekadu Gurmu**, Elias Urage. 2014. Sweetpotato Diseases Research in Ethiopia. International Journal of Agriculture Innovations and Research 2(6):2319-1473.

# 3. Tanzania (4)


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12. S. Ngailo, H. Shimelis, J. Sibiya and K. Mtunda (2015). Assessment of sweetpotato farming systems, production constraints and breeding priorities in Eastern Tanzania. South African Journal of Plant and Soil (In Press)
13. Lukonge E., Lembris L., Amour R., (2015). Lesson Learnt from research, DONATA and SASHA programmes. *Marando Bora Workshop proceedings 27 – 28 January, 2015. mwanza*
14. K. Mtunda, L. Lyimo, M. Yongolo, E. Mpayo and H. Kiozya (2015 in progress) Evaluation of promising sweet potato clones in selected agro ecological zones of Tanzania (*To be presented in STI conference in June 17-19, 2015, Dar es salaam*)

# 4. Kenya (8)


15. Kivuva, B. M., Stephen M. Githiri, George C. Yencho & Julia Sibiya. 2015. Screening sweetpotato genotypes for tolerance to drought stress. Field Crops Research; *Final version published online: 23-NOV-2014, Full bibliographic details: Field Crops Research (2015), pp. 11-22. DOI information: 10.1016/j.fcr.2014.10.018.*http://authors.elsevier.com/a/1Q4eQ1M2tUyyrs
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# 5. Rwanda (3)


23. Placide, R., H. Shimelisa, M. Lainga and D. Gahakwa 2015. Farmers' Perceptions, Production and Productivity Constraints, Preferences, and Breeding Priorities of Sweetpotato in Rwanda. HortScience 50(1):36-43.

24. Placide, R., H. Shimelisa, M. Lainga and D. Gahakwa.2015. Phenotypic characterisation of sweetpotato genotypes grown in East and Central Africa. South African Journal of Plant and Soil, 32(1):1-10

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- Thank you