



○ **Sweetpotato  
breeding  
progress in  
Burkina Faso**

# Objectives



- To develop high yielding, early maturing and drought tolerant sweetpotato with potential to address malnutrition

# Most important SP landraces in ..country



Country/ Name of landrace	Root yield t/ha	Flesh color	Dry matter (%)	Earl	SPVD	Alt	Remarks
Saafare	15-20	w	25	4	r		Farmer's variety recommended for production
Patate	15-20	w	30	4	r		Farmer's variety recommended for production
Nakalbo	20-25	w	30	4	r		Farmer's variety recommended for production
Tiebele-2	15-20	O	26	4	s		Registered in 2014
Wosso- woule	10-15	w	32	4	r		Farmer's variety recommended for production

# Most important bred SP varieties in ..country



Country/ Name of variety	Root yield t/ha	Flesh color	Dry matter (%)	Early	SPVD	Alt	Remarks
Country							
BF80*Tainu ng-2	18.11	lo	20	E	ir	NA	AT
BF92*CIP-6	17.11	o	27	E	ir	NA	AT
BF59*CIP-4	16.78	o	25	E	ir	NA	AT
BF59*CIP-1	13.56	o	27	E	ir	NA	AT
BF59*TIB-6	15.22	o	22	E	ir	NA	AT

Flesh color: White (w), cream (cr), yellow (y), light orange (lo), orange (o),  
 Earl (Earliness: Early (E) (about 4 months), late (L) about 5 or more months  
 SPVD resistance (r: resistant, s:susceptible)

Alt (Altenaria blight resistance, r: resistant, s: susceptible

# Summary of progress 2009- 2014



Type of trial		Details	2009/10	2013/14
<b>Crossing block</b>				
	1	No. of parents in crossing block	30	
	2	No. of seed collected from OP	1200	
		a. Total no. of families of OP seed	15	
	3	No. of seed collected from crosses	299	
		a. Total no. of families of controlled crosses	28	
<b>Seedling nursery</b>				
	1	No of seeds planted	299	
	2	No of seedlings established	169	
	3	Total no. of families planted	15	

# Summary of progress 2009- 2014



Type of trial		Details	2009	2013/14
<b>Observation trial</b>				
(OT)	1	No of clones planted	180	
	2	No of checks (check clones) planted	6	
	3	No. of locations	3	
<b>Preliminary yield (PT)</b>				
	1	No of clones planted		25
	2	No of checks (check clones) planted		3
	3	No. of locations		5
<b>Advanced yield trial (AT)</b>				
	1	No of clones planted		
	2	No of checks (check clones) planted		
	3	No. of locations		

# Summary of progress 2009- 2014



Type of trial	Details	2009	2013/14
On-farm trials			
1	No of farms/farmers per region/district / province	0	30
2	Total no. of trials whole country	0	6
No of varieties released		0	0
No. of clones in pipeline for release by 2014			8
Package used for analysis:			
2009-2012		GenStat? CloneSelector? SAS?	SAS, Genstat, and CloneSelector
2013/14		?	?

# Sweetpotato Foundation Seed system



<b>Tissue culture lab:</b>	<b>Response (a)</b>	<b>Response (b)</b>
No. of lamina flow benches (a)		
No. of CVs maintained in tissue culture (a)		
No. of screenhouses/need repair (a)	No tissue culture	lab
No. of good screenhouses (a)		
<b>No. of in vitro plantlets wined:</b>	11 clones sent	to Ghana
a) Every 3-4 months (b) every year)		
<b>No. of vine cuttings:</b>		
a) Distributed every 4-5 months (b) every year)		
a) Sold every 4-5 months [(b) every year]		
<b>How long does it take to breed a variety (years)?</b>		
How long does the variety release process take? (Assuming all data is available)/1 season/1 year (a)?	2 years	



# Linkage to Vine multipliers for further multiplication



Linkage to vine multipliers	Proportion	Comment
Government institutions (list):	%	
Ministry of Agric.		distribution of vine
NGOs (list):	%	
CRS (Eastern region)		using vouchers
Farmer multipliers	%	
Within sweetpotato farmers' groups at Sissili		This year
Others (list them)	%	
NAFASO		in planning

# Status of AGRA grant (delete what is not applicable)



Project title:	Response
Approved but has not started	
Funded since	
Amount	USD 177,500
Expiration date	
Renewal proposal (delete what is not applicable):	
Not yet written/ In process of writing	
Written but not submitted	
Submitted, waiting for feedback	Yes
2 <sup>nd</sup> phase funded since (year), amount (USD)	
<b>Other information on AGRA grant:</b>	

# Number of SP varieties released 2009 - 2014



No. of varieties released		No. of release document(s)*	No. of release papers /Manuscripts**
Non-orange	Orange		
No. of clones in pipe in pipeline for release (final tests/data already compiled)			
Non-orange	Orange		
7	8		

\* Document submitted to Variety Release Committee/Authority; Each release has a separate document (several varieties released at the same time have one document)

\*\*Papers published in journal(s) or manuscript for journal/submitted/to be submitted

# Detailed information of variety release documents (2009-2014)



- \*Document submitted to Variety Release Committee/Authority  
Author(s), Title, Year of submission, Organization, City, Country
- \*\*Papers published in journal or manuscript for journal submission  
Give details, author(s)., year, title, journal (target journal if not submitted yet), page number(s)/where applicable

# Papers published/Manuscripts (2009-2014)



Koala M., Hema A. Somé K., Palé E., Sérémé A., Belem J. and Nacro M., 2013. Evaluation of Eight Orange Fleshed Sweetpotato (OFSP ) Varieties for Their Total Antioxidant , Total Carotenoid and polyphenolic Contents . *Journal of Natural Science Research*, 3 (4) :67-72 .

Koala M., Hema A. Somé K., Palé E., Sérémé A., Belem J. and Nacro M., 2013. Effects of Organic and Mineral Fertilizers on total Antioxidant, polyphenolic and carotenoid contents of Orange fleshed sweet potato tubers. *Journal of Natural Sciences Research*, 3 (6):23-30.

Somé K., Gracen V. , Asante IK , Danquah EY , Ouedraogo JT , Tignegre JB, J. and Belem Tarpaga MV, 2014. Diversity analysis of sweet potato ( *Ipomoea batatas* [L.] Lam ) germplasm from Burkina Faso using morphological and Simple sequence repeats markers . *Afr. J. Biotechnol.* , 13 (6) :729-742 .

# Current staff on sweetpotato research (replace example with yours)



Sweetpotato (SP) Staff Category	No.	Gender (M/F)	Age <35 / >35 years
Full/Part time on SP (%) (indicate qualification):			
PhD (Plant breeder, 30%)	1	M	>35
BSc (Agronomist, 20%)	1	M	>35
Technicians:			
MSc (tissue culture, 10%)	0		<35
Diploma (breeding & seed systems, 50%)	1	F	<35
Certificate (breeding, 100%)	2	M + F	>35 and <35
Total	6	(3 M:2F)	
Comment:			Agronomist will retire in 2015

# Update Other Project Information

## Funding source/amount /duration

- **AGRA / 25,000 USD/ 3 years**
- **CRS/BF/ 11,000 USD / 2 years**
- **PIGEPE-IFAD/ 43,000 USD/ 6 months**

## Constraints

- **Difficult maintenance of material over the dry season,**
- **Difficulty to supply in planting material due to increasing demand**
- **Lack of sufficient fund to handle material maintenance and planting material supply**

## Proposed future activities

- **The Jumpstarting Orange-fleshed Sweetpotato in West Africa through Diversified Markets project**
- **AGRA project**