Evaluation of orange-fleshed sweetpotato genotypes for smallholder farming systems in Orissa, India

South West and Central Asian Region

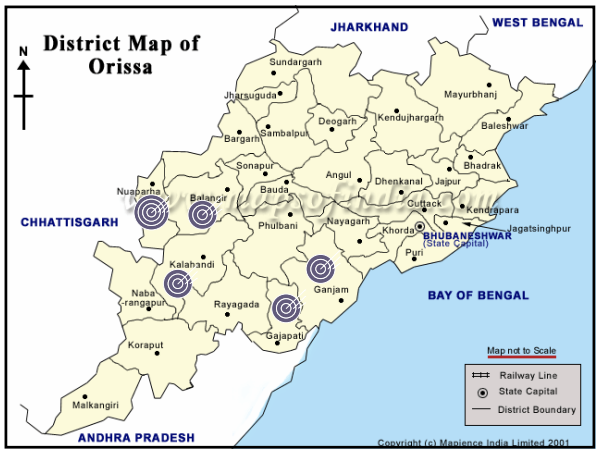
Sreekanth Attaluri, U.R. Sangakkara and Sarath Ilangantileke

Facts about Sweetpotato in South Asia

- Sweetpotato is about 1.6 million tonnes on 0.2 million hectares. India accounts for 68% of the total production followed by 27% in Bangladesh and about 5% in Sri Lanka
- Sweetpotato is an important crop in Sri Lanka and occupies area of 0.9 %, followed by 0.5% in Bangladesh and less than 0.1% in India

Sweetpotato in India (2000-2001)

State	Area (X1000 ha)	Production (X1000 MT)	Productivity (t ha^{-1})
Orissa	47.9	364.9	8.2
Bihar	17.9	170.7	13.7
UP	30.6	285.9	11.8
Assam	8.9	31.0	3.5
Karnataka	3.1	23.3	7.5
Kerala	1.1	11.9	10.8
AP	2.0	15.0	7.5
TN	1.9	32.2	16.9



WESTERN ORISSA

- 4 million population
- Around 60% are below poverty line
- Frequent drought in every 3-4 years
- Extreme climatic conditions (>50C)
- Malnutrition, Infant mortality & maternal mortality rate are one of the highest in the country.
- Distressed migration around 40%
- Literacy rate is as low as 10% to 16%
- Urbanisation is 5-10% only
- CIP in collaboration with Western Orissa Rural Livelihoods project (WORLP) funded by DFID

EASTERN ORISSA

- Around 40-60% are below poverty line
- Extreme climatic conditions (>50C)
- Malnutrition, Infant mortality & maternal mortality rate are one of the highest in the country.
- Distressed migration around 40%
- Literacy rate is as low as 10% to 16%
- Urbanisation is 5-10% only
- CIP in collaboration with ISARA and Prava (NGOs)

Objectives

- To introduce and select improved germplasm suitable for the area in eastern and western Orissa
- Educate the farming communities on the usefulness of the improved varieties.
- To reduce nutritional deficiency among women and new born with the availability of nutritive sweetpotatoes.

Methodology

- The design used for experimentation is RBD with 4 replications
- Spacing of 60x30 cm was used at both the sites in eastern and western Orissa
- Intercultural operations and standard agronomic practices were followed during the crop growth
- The crop was harvested after 105 days of planting

Training…..

In western Orissa, the following germplasms were tested for Varietal evaluation

	CIP Germplasm	Tuber Yield. t ha^{-1}	Market Tuber Yield.t ha^{-1}	Harvest Index (%)
1	CIP SWA-2	19.9	17.9	79.9
2	*IB-97-2/5	21.5	19.7	75.5
3	CIP-440074	13.7	12.4	69.6
4	IB-97-6/15	18.6	17.1	69.5
5	CIP SWA-3	16.6	14.9	74.7
6	Local	14.3	12.9	57.3

* IB-97-2/5 has been preferred by the farming communities and children in Orissa which is orange fleshed with high dry matter

In eastern Orissa, the following germplasms were tested for Varietal evaluation

	CIP Germplasm	Tuber Yield. t ha^{-1}	Market Tuber Yield.t ha^{-1}	Harvest Index (%)
1	CIP SWA-2	22.73	20.62	70.70
2	*IB-97-2/5	28.47	26.55	72.79
3	CIP-440074	16.02	14.02	58.46
4	IB-97-6/15	24.47	22.73	65.76
5	CIP SWA-3	27.48	25.93	70.37
6	Local			

* IB-97-2/5 has been preferred by the farming communities and children in Orissa which is orange fleshed with high dry matter

Sweet Potato exhibition at Chanabahal village in Bolangir

Good growth of sweetpotato after training in eastern Orissa

Conclusions

There is Huge demand for Orange fleshed sweetpotatoes in the region.

IB-97-2/5 is a promising germplasm selected in Orissa state. This is Orange fleshed and has high starch content accepted by large communities after participatory trial.

Finally, the Paticipatory reasearch and Development in the SWCA region using sweetpotato is commendable and proved to be lucrative over the past few years