Evaluation of orange-fleshed sweet potatoes for tuber yield and carotene content

B. Vimala, R. Thushara, Bala Nambisan and J. Sree Kumar

INTRODUCTION

Sweet potato – Short duration crop

Cultivated – Tropics, sub-tropics & warm temperate regions

Tubers consumed –Vegetable

Snack – Boiled baked

Traditional varieties – White, cream, yellow

Orange-fleshed sweet potatoes: β-carotene and anthocyanins

Sources of vitamin-A and antioxidants

OBJECTIVE

To evaluate the Orange-fleshed sweet potatoes (OFSP) for tuber yield, total carotene and β-carotene content

METERIALS

Centres	Clones
CTCRI, Trivandrum	S-61,S-594,S-1156, 362-7, SV-98
CTCRI (RC), Bhubaneswar	ST-14
CIP Regional Station	CIPSWA-2, 187017-1, 440038, 440127, 420027
IGAU, Jagadalpur	IGSP-15
Control	Sree Kanaka

- **Experimental Design- RBD**
- **Evaluation - 3 seasons (April-July, July-Nov, Oct-Jan)**
- **Harvest - 90 days**
- **Observations - Marketable and non-marketable yield data**
- **Statistical analysis**
- **Biochemical analysis-DM, Starch, Sugar, Total Carotene and β-carotene**

Evaluation of orange fleshed sweet potato

Genotypes	April 05 - July 05	July 05 – Oct' 05	Oct'05 – Jan'06	Pooled mean
362-7	29.51	30.42	37.08	32.34
SV-98	26.53	21.26	23.40	23.73
440038	11.11	26.20	25.14	20.82
IGSP - 15	24.03	18.55	19.65	20.74
CIPSWA-2	11.25	11.90	26.88	16.67
441027	7.64	15.78	22.50	15.04
S-61	6.18	0.93	4.79	3.97
S-594	6.29	1.10	-	2.46
S-1156	4.65	4.29	1.94	3.63
ST-14	-	3.50	5.35	2.95
187017	5.07	2.64	10.42	6.04
420027	-	6.55	-	2.18
Sree Kanaka	12.85	8.44	18.96	13.41
CD (0.05)	2.62	2.29	4.63	1.96

Biochemical analysis of orange fleshed sweet potato

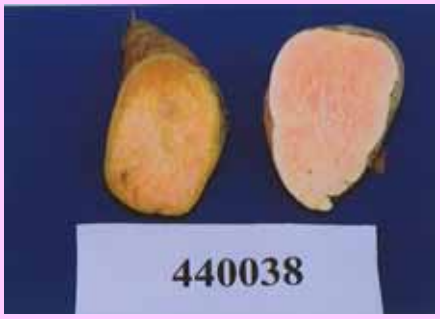
Clones	DM (%)	Starch (%)	Sugar (%)	Total carotene content mg/100g	β-carotene content mg/100g
362-7	29.87	20.20	3.21	6.94	4.08
SV-98	26.10	18.31	5.61	5.61	5.21
CIPSWA-2	22.52	16.06	5.85	5.21	4.83
441027	26.99	14.04	2.68	5.67	3.46
440038	27.82	16.87	5.90	5.02	4.83
S-61	30.92	20.56	3.61	6.00	3.84
S-594	22.06	13.00	4.70	3.75	2.61
S-1156	23.14	15.36	3.52	3.66	3.49
187017	25.39	14.35	4.36	3.36	1.24
420027	24.13	14.14	2.73	7.29	3.12
IGSP - 15	23.30	15.04	4.98	5.50	2.43
ST-14	27.77	15.03	3.77	13.83	10.59
Sree Kanaka	23.82	13.99	3.23	9.85	7.49

Sree Kanaka


CIPSWA - 2


CIPSWA - 2


440038


440038


441027


441027


420027


187017


187017


IGSP - 15


IGSP - 15


S - 61


S - 61


S - 594


S - 594

Conclusion

362-7	**High yield, mod. β-carotene,**
CIPSWA-2	**Good cooking quality**
SV-98	
ST-14	**- High β-carotene, Sweet**
Sree Kanaka	**- High β-carotene, non-sweet**
440038	
441027	**Mod. Yield, β-carotene & non-sweet**

Consumption of OFSP - cheap source of β-carotene. Precursor of vitamin-A

A viable, long term, cost-effective, acceptable, self-reliant and sustainable food based approach to control vitamin-A deficiency