

EVALUATION OF A FEW SELECTED LINES OF PUMPKIN FOR LOCAL ADAPTABILITY

Pumpkin is a potential supplier of carotene. Varieties grown in India vary in fruit size, shape, flesh colour and sweetness. Attempts to evaluate and compare the promising pumpkin lines grown in India are limited. This experiment was undertaken as a part of the All India Co-ordinated Vegetable Improvement Project to identify promising pumpkin varieties for local adaptability.

The trial was laid out at the College of Horticulture, Vellanikkara, Trichur, Kerala during January-April 1984 and December 1984—March, 1985. The materials comprised of eight pumpkin lines selected from different parts of India. They were grown in a randomized block design with four replications. The lines included S 107 and Hybrid 1 from IARI New Delhi; Arka Suryamukhi and Arka Chandan from IHR Bangalore; CM 14 and Thathamangalam Local from the Kerala Agricultural University, Co 2 from the Tamil Nadu Agricultural University, Coimbatore and Solan Badami from the Himachal Pradesh Krishi Viswa Vidyalaya, Himachal Pradesh. There were six pits/variety/replication and two plants/pit were retained. Pits were spaced 4.5 m x 2 m.

The pumpkin lines differed significantly for qualitative and quantitative characters observed. The characteristic white patches on the intercept of leaf laminar veins observed in other pumpkin lines were absent in Arka Suryamukhi. Fruits of this variety were small and had golden yellow rind which turned reddish brown at maturity. Arka Chandan has bottle shaped fruits with orange flesh. Due to the high temperature (40°C) during summer there was low fruit set in Arka Chandan. The lines S 107 and Hybrid 1 had long, oval and mottled fruits. Flat round fruits were borne by CM 14, Co 2 and Solan Badami. Thathamangalam Local had small round fruits with orange flesh.

During the first season fruit yield/plant was maximum in Hybrid 1 (14.11kg) followed by CM 14 (12.76 kg) carrying three and four fruits/plants respectively (Table 1 and 2). Yield was the lowest in Arka Suryamukhi (4.80 kg) though it had maximum number of fruits (9/plant). Thathamangalam Local yielded 5.42 kg of fruits/plant. During the second season CM 14 ranked first in yield (9.64 kg/plant). The mean yield of fruits over the two seasons was also maximum in CM 14 (11.23 kg/plant). This is in conformity with the earlier reports of Gopalakrishnan (1979) and IHR (1984). *Thathamangalam Local* though yielded only 4.94 kg/pit, the orange flesh, high TSS (10.5°) and smaller sized fruits offer scope for popularising this line after improving its yield level.

Hybrid 1 had the longest fruits (38.01 cm) followed by S 107 (28.05 cm) (Table 3). Fruit length was the lowest in Arka Suryamukhi (8.10 cm). Fruit diameter ranged from 14.80 cm in Thathamangalam Local to 25.05 cm in CM 14. The mean fruit weight was maximum in Hybrid 1 (6.76 kg). CM 14 and S 107 had

Table 1
Yield of pumpkin per pit, kg

Lines	Season 1	Season 2	Mean
Arka Suryamukhi	4.80	4.96	4.88
Arka Chandan	*	3.60	3.60
CM 14	12.76	3.69	11.32
S 107	9.46	3.42	6.44
Hybrid I	14.11	4.10	9.10
Co-2	8.79	6.40	7.60
Solan Badami	5.65	4.23	4.94
Thathamangalam Local	5.42	3.46	4.44
CD (0,05)	3.07	2.56	

* Did not set fruits in season 1

Table 2
Number of fruits per pit

Lines	Season 1	Season 2	Mean
Arka Suryamukhi	8.91	5.59	7.25
Arka Chandan	*	1.81	1.81
CM 14	3.95	3.51	3.73
S 107	2.80	1.88	2.34
Hybrid 1	2.83	1.45	2.14
Co 2	3.88	3.49	3.69
Solan Badami	3.31	1.79	2.55
Thathamangalm Local	4.79	2.25	3.52
CD (0.05)	1.39	1.64	

* Did not set fruits in season 1

fruits of medium weight (3.94 and 3.70 kg respectively). Fruit weight was the lowest in Arka Suryamukhi (0.89 kg) followed by Thathamangalam Local (1.34kg). The flesh thickness had direct bearing on fruit weight as indicated by a flesh thickness of 3.81 cm in Hybrid 1 and 2.21 cm in Thathamangalam Local. The quality of pumpkin as indicated by total soluble solids was maximum in Arka Suryamukhi (10.88%) and Thathamangalam Local (10.50%).

Evaluation of eight pumpkin lines at the College of Horticulture, Vellankkara showed that CM 14, a line with yellow flesh developed at the Department of Olericulture College of Horticulture, Trichur equalled the hybrid of CM 14 in one season and emerged as the highest yielder based on mean of the two seasons.

Table 3
Fruit characters of pumpkin lines

Lines	Fruit length (cm)	Fruit diameter (cm)	Circumference of fruit (cm)	Mean fruit weight (kg)	Flesh thickness (cm)	T.S.S. (Brix)	Seeds/fruit
Arka Suryamukhi	8.10	15.57	49.63	0.89	2.21	10.88	99.75
Arka Chandan	15.65	16.34	64.21	2.00	3.22	868	184.25
CM 14	17.55	25.05	82.20	3.94	3.11	7.37	275.50
S 107	28.05	19.05	60.97	3.70	3.33	8.00	157.25
Hybrid 1	38.07	22.65	75.17	6.76	3.81	8.75	164.50
Co 2	14.65	18.37	66.40	2.32	3.56	8.75	282.75
Solan Badami	14.25	20.00	62.82	2.32	3.08	8.21	150.25
Thathamangalam	14.00	14.80	47.50	1.34	2.65	10.50	221.50
Local							
CD (0.05)	4.31	3.40	6.45	0.86	0.76	1.49	97.05

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