

## Evaluation of local strains of mango (*Mangifera indica*) grown in West Bengal\*

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Although a large number of mango (*Mangifera indica* L.) varieties are grown in West Bengal, most of them do not satisfy the requirements of a good commercial variety. A careful survey and physico-chemical studies of the mango varieties are essential before taking up any planned programme for their commercial exploitation in mango industry. Further, without an accurate understanding of the varietal habits and characteristics, neither the selection of superior varieties nor any other intensive research is possible. The present study was undertaken to assess the potentiality of the mango varieties grown in West Bengal by studying their physico-chemical characteristics.

Twenty varieties of mango were taken as experimental materials and these were collected from different mango-growing pockets of West Bengal. Four typical trees of each variety with normal and uniform growth and of bearing age were selected for collection of fruits. For recording fruit characters, 4 typical fruits of each variety were sampled randomly at maturity from the exposed parts of each tree. Physical and biochemical examination of the fruits of different varieties were made during 1995-97. Total and reducing sugar contents and titratable acidity of the fruits were determined (AOAC 1984). Total soluble solids (TSS) of the fruit were measured by a hand refractometer. Ascorbic acid content of the fruit was determined by using 2, 6-dichlorophenol indophenol dye titration method (Ranganna 1977). The experiment was laid out in randomized block design.

The fruits of 20 mango varieties had wide variations for average fruit weight and size. The average weight of fruit was recorded highest in 'Suraya Pasand', followed by 'Rugni', while the lowest average weight in 'Subza'. The

length of fruits varied between 12.27 cm ('Suraya Pasand') and 6.76 cm ('Subza'). The fruit of 'Suraya Pasand' showed the maximum diameter and that of 'Saranga' the lowest. The average pulp and peel weight varied between 304.75 g ('Suraya Pasand') and 56.25 g ('Talabi') 39.75 g ('Subza') and 12.50 g ('Rani') respectively. Fruits having higher weight, in general, had high pulp weight also. The higher pulp : stone ratio in 'Rugni', 'Sheeradar' and 'Suraya Pasand' indicates that these varieties are suitable for fruit processing. The higher ratio between peel weight and fruit weight in 'Sabsang', 'Shah Pasand', Sita Bhog', 'Subza', 'Talabi' and 'Tephala' reveals that these varieties can withstand transportation better.

Marked variations in chemical composition of the fruits were recorded among the varieties (Table 1). The total soluble solids of the fruits were maximum in 'Rani' and minimum in 'Tephala'. The highest total sugar content was recorded in 'Safdar Pasand', whereas the lowest in 'Tephala'. The reducing sugar content of the fruits of different varieties also varied significantly. The lowest titratable acidity of 0.09% was recorded in the fruits of 'Saradamani Bhog' and 'Sita Bhog'. The ascorbic acid content was highest in the fruits of 'Shah Pasand'. The Total soluble solids : acid ratio was high (>100) in 'Rugni', 'Safdar Pasand', 'Saradamani Bhog', 'Sita Bhog' and 'Totoapuri Red Small'. These varieties are considered sweet compared with the other varieties studied and are most suitable for table purpose. In an evaluation of 10 varieties of mango of West Bengal, Ghosh *et al.* (1985) also reported that the fruits of 'Safdar Pasand' contained highest amount of total soluble solids and total sugars.

It may be concluded that 'Suraya Pasand', 'Rugni' and 'Sheeradar' are suitable for fruit-processing based on pulp : stone ratio. Higher total soluble solids : acid ratio in 'Rugni', 'Safdar Pasand', 'Saradamani Bhog' and 'Sita Bhog' sweetened the fruits and suitable for table purpose.

\* Short note

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### SUMMARY

Fruits of 20 local varieties of mango (*Mangifera indica*)

Table 1 Physical and chemical characteristics of different mango varieties (pooled data of 1995-96 to 1996-97)

Variety	Fruit weight (g)	Fruit length (cm)	Fruit breadth (cm)	Fruit weight (g)	Pulp weight (g)	Peel weight (g)	Stone weight (g)	Pulp: stone	Peel weight/fruit weight	Total soluble solids (%B)	Total sugar (%)	Reducing sugar (%)	Titratable acidity (%)	Asorbic acid (mg/100)	TSS/acid ratio
'Rakhal Bhog'	124.50	7.96	6.66	90.25	21.25	13.00	6.94	0.17	17.46	13.97	3.72	0.35	30.83	49.88	
'Rani'	143.75	8.07	6.68	116.00	12.50	15.25	7.61	0.09	20.46	11.13	6.16	0.32	21.23	63.93	
'Rugni'	306.25	10.26	7.06	231.25	50.50	24.50	9.44	0.16	20.06	12.17	3.90	0.16	31.63	125.37	
'Sabsang'	205.00	9.30	6.69	131.75	47.00	26.25	5.02	0.23	16.13	12.53	4.14	0.26	29.23	62.03	
'Safdar Pasand'	192.50	9.86	6.25	124.00	30.50	38.00	3.26	0.16	19.60	15.39	5.24	0.19	27.50	103.15	
'Safeda Maihabad'	185.00	8.58	6.26	121.75	35.00	28.25	4.31	0.19	16.73	11.79	2.99	0.40	28.73	41.82	
'Saradamani Bhog'	112.50	6.95	5.94	75.75	21.50	15.25	5.10	0.19	15.86	13.05	3.88	0.09	9.13	176.22	
'Saranga'	105.00	7.67	4.87	63.75	20.25	21.00	3.03	0.19	16.66	13.13	4.53	0.28	7.06	59.50	
'Shadwala'	280.00	8.70	7.83	195.50	49.00	35.50	5.51	0.18	15.60	11.20	4.80	0.18	30.40	86.66	
'Shah Pasand'	212.50	10.21	5.94	140.25	47.25	25.00	5.61	0.22	18.53	10.61	3.63	0.35	44.33	52.94	
'Shecradar'	216.25	9.12	7.44	156.00	43.25	17.00	9.18	0.20	19.53	13.80	4.96	0.38	37.96	51.39	
'Sindure'	143.75	7.94	5.14	104.00	22.00	17.75	5.86	0.15	17.33	12.91	2.46	0.33	26.23	52.51	
'Sita Bhog'	106.25	7.49	5.27	66.00	25.00	15.25	4.33	0.24	18.73	9.10	1.56	0.09	14.13	208.11	
'Sorkhas'	207.50	9.59	6.48	140.00	38.50	39.00	4.83	0.19	14.73	10.01	3.82	0.32	10.80	46.03	
'Subza'	70.00	6.76	5.18	39.75	16.25	14.00	2.84	0.23	13.26	10.09	2.09	0.42	27.50	31.57	
'Suraya Pasand'	372.50	12.27	8.30	304.75	38.00	29.75	10.24	0.10	15.66	13.97	6.66	0.28	16.66	55.92	
'Talabi'	245.00	10.26	6.96	158.50	56.25	30.25	5.24	0.23	18.53	15.37	2.73	0.33	14.16	56.15	
'Tephala'	128.75	8.38	5.90	71.75	29.00	28.00	2.56	0.23	12.60	8.51	2.23	0.25	19.16	50.40	
'Tota'	113.75	7.54	5.15	68.00	21.75	24.00	2.83	0.19	17.60	14.82	4.77	0.27	32.50	65.18	
'Totapuri Red Small'	236.25	10.13	6.63	179.00	29.50	27.75	6.45	0.12	16.00	14.29	2.11	0.10	31.33	160.00	
CD(P=0.05)	52.23	1.49	1.02	42.38	7.63	5.84			0.72	1.13	0.37	0.04	6.12		

L.) growing in mango-growing pockets of West Bengal were collected and studied during 1995–97 for physical and biochemical properties to assess their potentiality. Of the 20 varieties, 'Suraya Pasand' and 'Sheeradar' were found suitable for fruit processing based on their pulp : stone ratio. Total soluble solids : acid was found higher in 'Rugni', 'Safdar Pasand', 'Saradamani Bhog' and 'Sita Bog', making their fruits sweetened and suitable for table purpose.

## REFERENCES

- AOAC. 1984. *Official Methods of Analysis*. Association of Agricultural Chemists, edn 14 Washington, DC.
- Ghosh S K, Dhua R S and Mitra S K. 1985. Studies on physico-chemical characteristics of some mango cultivars grown at West Bengal. *Indian Food Packer* 39 (1) : 46–50.
- Ranganna S. 1977. *Manual of Analysis of Fruit and Vegetable Products*, pp. 106–7. Tata Mc Grow-Hill Publishing Co. Ltd, New Delhi.