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**Dilip Kumar Pandey**  
Krishi Vigyan Kendra, Palamu,  
(Birsa Agricultural University,  
Ranchi, Jharkhand, India

**SK Kamal**  
Krishi Vigyan Kendra, Palamu,  
(Birsa Agricultural University,  
Ranchi, Jharkhand, India

**Sanjay Kumar Ram**  
Krishi Vigyan Kendra, Palamu,  
(Birsa Agricultural University,  
Ranchi, Jharkhand, India

**Arun Kumar Tiwary**  
Dept. of Horticulture, Birsa  
Agricultural University, Ranchi,  
Jharkhand, India

## Screening of important cultivators of mango varieties for processing

**Dilip Kumar Pandey, SK Kamal, Sanjay Kumar Ram and Arun Kumar Tiwary**

### Abstract

The nutritional and therapeutic value of mango justifies as “King of Fruits” and processing of mango fruits into value added products would be boon to the processor as well as grower. RTS- beverages preparation require low cost and low energy processing technology, simple and adaptable in rural countryside with limited skill and resources. As the raw produce goes for processing, screening of eight important cultivars (viz Mithua, Bombay-green, Gulabkhas, Zardalu, Langra, Dashehari, Alphonso and Himsagar) of mango grown under Chhotanagpur plateau region of Jharkhand were undertaken. Simultaneously, encourage commercial cultivation of mango varieties suitable to grow. The screening result of cultivars show maximum average fruit weight was recorded in Himsagar (220.0 g) and Dashehari had smallest fruit weight (104 g), which is too small size but still liked by people. Pulp percentage more than 70 percent found in cv. Gulabkhas, Langra, Alphonso, Himsagar, Bombay-green and Dashehari. Maximum TSS of juice was in Langra (19.5<sup>o</sup> B). On overall screening of physico-chemical analysis of fruits and prepared RTS beverages at 15<sup>o</sup> B showed Alphonso, Himsagar and Langra are mostly accepted and Mithua and Zardalu are least accepted on 9 point Hedonic scale.

**Keywords:** RTS, ready-to-serve, physico-chemical, cultivars

### Introduction

There is an increasing demand for mango fruits and processed products both for domestic and export consumption. Although a huge germplasm of mango is known to exist in India, only a few are commercially identified. With the increasing awareness as well as demand for export and processing of mango, there is an urgent need for widening the scope of search area to greater number of varieties for export processing and fresh domestic market. So, the present study of screening of mango varieties were under taken for this purpose. Simultaneously, this would encourage commercial cultivation of mango based on a number of varieties rather than depending on present one or two varieties and thus ensuring constant, regular supply of fruits which is a must for export and processing industries.

### Material and Method

The fruits of eight varieties (Mithua, Bombay-green, Gulabkhas, Zardalu, Langra, Dashehari, Alphonso and Himsagar) were procured from the local market and Horticultural orchard of the Department of Horticulture, B.A.U. Ranchi and were packed in cartoon lined with newspaper. After 3-5 days under ambient conditions, the fruits were ripened and were use for the study. Fruits of big, medium and small size were selected from each variety. The physical characteristics of fruits (viz. average fruit weight, volume, peel %, pulp%, and juice%) was taken by their usual method and TSS by hand refractometer and reading were expressed as degree brix (<sup>o</sup>B). the ph was determined by using eitp ph meter. total tritable acidity and total sugar were estimated by methods described in AOAC. The RTS was prepared from the homogenized and sterilized mango pulp with a composition of 15% pulp, 2.5 gm citric acid per kilogram and 15 0 brix TSS. The prepared RTS was filled into the glass bottles (200 ml cap), crown corked and sterilized in boiling water for 10 minutes. The organoleptic score of the chilled RTS beverages was taken by a panel of soven semi skilled judges on hedonic scale and methodology of Ranjanna (1994) and Amesine *et al.* (1965).

### Result and Discussion

Eight important cultivars of India, grown in experiment from and local villages, were screening for processing characteristics. The average fruit weight of different varieties varied from 104 gm to 220 gm (table-1) Dasehari had smallest fruit weight (104 gm) which is too small a size but still liked

**Correspondence**  
**Dilip Kumar Pandey**  
Krishi Vigyan Kendra, Palamu,  
(Birsa Agricultural University,  
Ranchi, Jharkhand, India

by people being a sucking sweet had an average fruit variety. The varieties, Himsagar, Langra, Alphonso had an average fruit weight near to 200 g and are suitable for either export or processing industry. Since mango fruit is peeled manually in the processing centre in India. Smaller size of the fruits is not liked for economic reasons.

The high pulp percentage is an important factor determining the suitability of the variety for processing. Zardalu and Mithua with a pulp percentage of less than 70 do not provide much advantage for processing. Gulabkhas, Langra, Alphonso, Himsagar, Bombay-green, Dashehari, all had 70 percent or above pulp percentage and hence could be considered good for processing. Total soluble solids are important as being cost effective, i.e. Higher TSS means less amount sugar would require for preparation of RTS and other beverages. The TSS content were maximum in Langra (19.5°B) followed by Bombay- green (18.6°B) while least in

Dashehari (16.5°B), Alphonso and Zardalu (17.2°B). However Dashehari, Zardalu and Langra are fibrous, which is negative trait for RTS beverages. Acidity is another important character which has greater commercial utility during RTS preparation, was absorbed to be the highest in Dashehari (0.36%) followed by Alphonso and Zardalu (0.34%), Himsagar and Mithua. Lowest in Langra (0.26%) and Bombay -green (0.27%). Highest Ph(5.40) in langra while lowest in Alphonso and Dashehari (4.10). Total sugar content is highest in Langra (15.60%) and lowest in Himsagar (12.84%).

The organoleptic score of RTS beverages prepared from ripe fruits were mostly acceptable with Alphonso, Himsagar and Langra scoring above 7.5 points out of 9 on the Hedonic scale (Table 2). Mithua had average score of 6.75 followed by Zardalu 7.01. These two cultivars were thus not considered good for processing.

**Table 1:** Physical characteristics of different varieties of mango

variety	Average wt (gm)	Average vol (cc)	Average peel %	Average stone %	Average pulp %	Average Juice %
Mithua	129.0	124.00	15.60	17.90	66.50	63.9
Bombay Green	189.0	181.20	12.40	16.50	71.10	66.2
Gulabkhash	145.0	142.00	11.60	12.60	75.80	73.5
Jardalu	192.0	187.50	16.50	19.40	64.10	56.2
Langra	210.0	206.30	10.50	14.60	74.90	68.4
Dasehari	104.0	100.20	16.50	12.40	71.10	66.0
Alphansoo	195.0	191.00	12.80	12.50	74.70	71.2
Himsagar	220.0	215.00	12.65	15.10	72.25	69.1

**Table 2:** Physico chemical characteristics of pulp and organoleptic quality of different varieties.

variety	TSS Brix	Ph	Acidity %	Total suger %	Organoleptic score
Mithua	17.5	4.25	0.33	13.8	6.75
Bombay Green	18.6	5.25	0.27	15.38	7.09
Gulabkhash	17.8	4.45	0.32	13.93	7.35
Jardalu	17.2	4.15	0.34	13.84	7.01
Langra	19.5	5.40	0.26	15.60	7.56
Dasehari	16.5	4.10	0.36	11.70	7.40
Alphansoo	17.2	4.10	0.34	13.23	7.61
Himsagar	17.4	4.20	0.33	12.84	7.49

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