

SHORT COMMUNICATION

# Organoleptic rating of various value added products of unripe mango cv. Rajapuri

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Mango (*Mangifera indica* L.) cv. Rajapuri is the most important and unique commercial fruit for processing industries. The demand of mango fruit fresh as well as processed products increase day by day because its excellent flavor, attractive fragrance, beautiful shades of color, delicious taste and high nutritive value. Mango processing is big industries which use both ripe and unripe fruits. Unripe fruits are used for preparation for chutney (salt or sugar added), pickle, amchur, mango pulp vegetable, green mango drink (*panna*) etc. The variety Rajapuri is originated and grown on large scale in this region and used as processed products. The recipe and methods used for preparation of various products are varying according to place to place and taste of consumer. The Panchmahals district of Gujarat is tribal dominant area. In the district mango is of time position in area (2200 ha.) as well as production (13200 MT) Anonymous (2011). The tribal used it for preparation of various products, but the products prepared by them spoil early. So, that the present study was carried out on preparation on various mango products and their organoleptic taste for tribal's of the area. To see the taste of consumer and make them understand through various extension tools like training, demonstration, advisory service, etc. for preparation of various products and how to increase the shelf life of products.

Present studies on organoleptic rating of various value added products of unripe Mango cv. Rajapuri was carried out during 2010-11 to knowing the consumer attitudes for products in Krishi Vigyan Kendra, Panchmahals- Gujarat. The Material and Methods used for preparation of various mango products were given in following sub heads.

## Mango Pickle (with oil)

Unripe firm mango fruits-8 kg, Salt-1 kg, Chilli-250 g, fennel-250 g, Kalongi-100 g, Methi-250 g, Turmeric-50 g, Aestafodia-10 g, Coriander powder-250 g, Yellow mustard-250 g and mustard oil as per requirement. Firm mangoes were taken and washed thoroughly. The fruits were cut into small pieces and mixed with salt and turmeric powder and were left for overnight. Next day, these pieces were spread under sun along with the water of salt and turmeric in tub. Kabli grams were soaked in remaining water of salt and turmeric. When the water in

mango pieces were dried up, mix the spices kabli gram (soaked) and mustard oil and fill them in container by pressing the whole mass. Keep it in sun for 2-3 days and after that fill up with more mustard oil. It takes about a month period for preparation of pickle.

## Mango Pickle (without oil)

Unripe firm mango fruits-8 kg, Salt-1 kg, Chilli-250 g, Fennel-250 g, Kalongi-100 g, Methi-250 g, Turmeric-50 g, Aestafodia-10 g, Coriander powder-250 g and Yellow mustard-250 g. Firm mangoes were taken and washed thoroughly. The fruits were cut into small pieces and mixed with salt and turmeric powder and were left for overnight. Next day, these pieces were spread in sun along with the water of salt and turmeric in tub. When the water in mango pieces were dried up, mix the spices. Keep it in sun for 2-3 days. It became ready for consumption after 15-20 days of preparation.

## Mango Chutney (sugar added)

The unripe firm fruits were taken. These were washed, peeled and grated. The following quantities were needed. Mango peeled pulp-1 kg, Sugar-1 kg, Salt-45 g, Vinegar-180 ml, Spices (cardamom, cinnamon and cumin) 30 g each and Ginger-15 gm. To the grated mango pulp, add half of sugar and leave for 1 hour Cook the mixture in slow heat and add rest of sugar, salt and other spices. Cook the whole mass on gentle fire to the consistency of jam. Add vinegar and cook for about 5 minute.

## Mango Chutney (Salt added)

The firm fruits were selected. These were washed, peeled and grated. The following quantities were needed. Mango peeled pulp-1 kg, Sugar-45 g, Salt Vinegar-180 ml, Spices (cardamom, cinnamon and cumin) 30 g each, Ginger-15 gm and oil-100 ml. The grated mango pulp fried in oil, add half of sugar and leave for 1 hour cook the mixture on slow heat and add rest of sugar, salt and other spices. Cook the whole mass on gentle fire to the consistency of jam. Add vinegar and cook for about 5 minute.

## Mango pulp vegetable

Green mango fruits are taken, washed, and cut in to pieces. Mango fruit (1 kg), sugar (100 g), onion (100 g), green chilli (20-25g), oil (100 ml), water (200 ml), salt (30

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g), cumin seeds (10 g), garlic (30 g), ginger (20 g), chilli powder (30-40 g), coriander powder (50 g) and turmeric powder (20 g). Spices are fried in oil and put the fruit pieces. It is boiled till the pieces are become soft and filled into bottles.

### Green mango drinks (*panna*)

It is a popular beverage during the summer in this area. For preparation of Green mango drink (*panna*), the prescribed ingredients include mango slices (250 g), sugar (100 g), water (500 ml), salt (20 g), cumin seeds (10 g), black pepper (5 nos) and citric acid (8-10 g). The slices are boiled in water for 20-30 minutes and filtered. Powdered spices are extracted along with the fruit. The extracts are mixed along with sugar and boiled and filled into bottles.

### Sensory evaluation of products

A portion of products was placed in dishes, which were covered. A panel of ten members, evaluated the sensory characteristics (appearance, taste, acceptability presentation and level for market) of various products using a 10 point hedonic scale ranging from dislike extremely (1) to like extremely (10) (Watts et al., 1989). The data statically calculated method as per given by Snedecor and Cochran, (1994).

The organoleptic score of panel for various mango products are presented in table- 1. Appearance is a major determinant of quality. So, color is the function, the different reflection of certain wavelengths and their visual perception. The data revealed that among all seven products the maximum score 8.90 for appearance was given to mango pickle (with oil) followed by mango chutney (sugar added) 8.60, mango pulp vegetable 8.50, green mango drink (*panna*) 8.33, mango chutney (salt added) 8.10, mango pickle (without oil) 6.83. It might be due to oil in mango pickle (with oil) was given an attractive look to the product. So, that the panel was given maximum score to mango pickle (with oil). Taste is one of the important sensory property which is attributed to the presence of certain soluble constituents

of the food that reach to the sensitive taste buds through film of saliva covering of tongue and other soft internal surface of mouth. It is relatively simple sense producing only type of sensation those sweetness, saltiness, sourness and bitterness. The main chemical agents responsible for these sensation respectively sugar, salt, titratable acid and heterogeneous collection of bitter principle including alkaloids (Duckworth, 1966). The highest score (9.50) for taste was given to mango pickle (with oil) followed by mango pulp vegetable 8.80, mango chutney (sugar added) 8.70, mango pickle (without oil) 8.60, mango chutney (salt added) 8.40 and green mango drink (*panna*) 8.20. It might be due to mango pickle (with oil) is used worldwide. So, that the panel was given maximum score to mango pickle (with oil). The similar findings are also reported by Saka et al 2007. The acceptability of product is dependent on various parameters like appearance, color, taste etc. For acceptability the maximum score (9.90) was given to mango pickle (with oil) followed by green mango drink (*panna*) 8.70, mango pulp vegetable 8.60, mango chutney (sugar added) 8.25, mango pickle (without oil) 8.0, mango chutney (salt added) 7.70. The similar findings are also reported by Yunchalad et al. (2000) in mango products. The score for presentation is more or less similar maximum (8.80) and minimum (8.30) were given to pickle (with oil) and green mango drink (*panna*).

The score for level of market, maximum for mango pickle (with oil) followed by mango pickle (without oil), mango chutney (sugar added), mango chutney (salt added), mango pulp vegetable and green mango drink (*panna*) 9.80, 8.85, 8.75, 8.25, 8.20, 7.70 respectively. It might be due to mango pickle (with oil) is the most important product which was purchased in the most of the house and due to long duration storage life with minimum expenditure.

Table 1: Organoleptic rating of various value added products of unripe Mango cv. Rajapuri

Sr. No.	Name of product	Appearance	Taste	Acceptability	Presentation	Level for market
1	Mango pickle (with oil)	8.90	9.50	9.90	8.80	9.80
2	Mango pickle (without oil)	6.83	8.60	8.00	8.60	8.85
3	Mango chutney (sugar added)	8.60	8.70	8.25	8.65	8.75
4	Mango chutney (salt added)	8.10	8.40	7.70	8.30	8.25
5	Mango pulp vegetable	8.50	8.80	8.60	8.75	8.20
6	Green mango drink ( <i>panna</i> )	8.33	8.20	8.70	8.40	7.00

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