

## **Comparative sensory analysis of various brands and variety of juices**

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### **INTRODUCTION**

Juice is a liquid that is naturally contained in fruit and vegetables. Juice is prepared by mechanically squeezing or macerating fruit or vegetable flesh without the application of heat or solvents. Broadly there are two types of fruit juices **natural juice (pure juice)** that is the juice extracted from ripe fruits and contains only natural sugars and **sweetened juice**, that is a liquid product which contains at least 85% juice and 10% total soluble solids. Apart from these two, it is also a common practice to mix juices of different fruits/vegetables that is known as **blended juice**. Juice did not become a popular beverage choice until the development of pasteurization and other preservation methods that allowed for the preservation of juice without fermentation.

Juices are often consumed for their perceived health benefits. Fruit and vegetable juices retain most of the vitamins, minerals and plant chemicals (phytonutrients) that would be found in the whole versions of those foods. These nutrients can help protect against cardiovascular disease, cancer and various inflammatory diseases, like rheumatoid arthritis. Juice of raw fruits and vegetables contains around 95% of the vitamins and enzymes our bodies. Juice facilitate weight loss, increased energy levels, strengthened immunity, strong bones and a glowing complexion, it may also reduce chances of heart disease, cancer and strokes. Fruit juices generally have a low glycemic index (GI). Juices with deeper colour tend to have more carotenoids and other antioxidants.

Juices are obtained by two methods namely cold pressing (Masticating) and hot-pressing (involves the addition of a pectolytic enzyme to break down naturally occurring pectins and it uses paper pulp or rice hulls as press aids to facilitate extraction of juice). After juice extraction, juice should be preserved and processed. Common methods of preservation includes canning, pasteurization, concentrating, freezing, evaporation, spray drying and chemical preservatives like sulphur dioxide (usually added as metabisulphite) or combination of Sorbic

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and Benzoic acid (usually added as sodium or potassium salts) are used to extend shelf life to many months.

In India, Non-packaged fruit juices are already popular but packaged juice market has witnessed a huge growth in last few years. Indians have started preferring juices over carbonated drinks. The main reason may be negative publicity campaign against soft drink manufacturers regarding the ingredients found in their products. People consider packaged fruit juices hygienic as these drinks come in sealed packs. However, sensory characteristics of a product are very crucial for consumers to buy a product. Sensory evaluation has been defined as a scientific method used to evoke, measure, analyze and interpret those responses to products as perceived through the senses of sight, smell, touch, taste, and hearing (Stone and Sidel, 1993). Sensory evaluation performs following functions:

- Compare similarities & differences in a range of products.
- Evaluate a range of existing products.
- Analyze samples for improvements.
- Gauge responses to a product, e.g. acceptable or unacceptable.
- Explore specific characteristics of an ingredient or product.
- Check whether a final product meets its original specification.
- Provide objective and subjective feedback data to enable informed decisions to be made.
- Sensory evaluation influences business decisions and ensures product success through understanding and linking consumers and products
- Of all a product's attributes, the most vital are the sensory properties, as they are most apparent to the consumers. Therefore, the majority of consumer complaints relate directly to sensory quality failures.

Considering the growing popularity of packaged fruit juices and importance of sensory evaluation for success or failure of any product in the market & its acceptance by the consumers the present market study was conducted to find the influence of senses on sensory acceptance of the packed juices available in the Delhi (India) market.

## METHODOLOGY

1. Different available brands (manufactured by different companies) of Litchi, Apple, Mango, Guava and Orange Juice in Delhi market were collected.
2. A set of trained panels were selected and trained to conduct the sensory evaluation of the above mentioned juices on 9 point hedonic scale on various parameters namely appearance, colour, flavour, Texture, and overall acceptability.
3. The obtained scores were averaged to give a the best brand of juice for that particular flavour.

## RESULTS AND DISCUSSION

The result of sensory evaluation and the discussion of different brands of juices of particular flavour is presented below:

# COMPARATIVE SENSORY ANALYSIS OF VARIOUS BRANDS & VARIETY OF JUICES

## Litchi Juice :

Brands	Safal Fruit Mania	Treat	Fresca	Gopaljee	Tropicana	Real
<b>Parameters</b>						
Appearance	6.4	7.2	7.4	5.8	8.4	7.8
Colour	5.8	6.8	7.8	6.0	8.2	7.9
Flavour	6.6	6.6	7.6	6.2	8.6	7.7
Texture	6.9	7.0	7.2	5.5	8.5	8.0
Overall Acceptability	6.5	6.9	7.5	5.7	8.4	7.8
<b>Average</b>	6	7	7.5	6	8.5	8

From the above data of six brands, it can be inferred that the most popular litchi juice brand is tropicana in case with an average score of 8.5, followed by Real juice and Mother dairy's Safal fruit mania and gopaljee are way lacking in the consumers acceptance.

## Apple Juice :

Brands	Safal Fruit Mania	Fresca	Delmonte	Tropicana	Real
<b>Parameters</b>					
Appearance	6.4	7.2	7.5	8.4	7.4
Colour	6.3	6.8	7.3	8.8	7.5
Flavour	5.8	7.1	7.1	8.6	7.1
Texture	6.5	7	7.7	8.7	7.9
Overall Acceptability	6.1	6.9	7.5	8.5	7.2
<b>Average</b>	6	7	7.5	8.6	7.5

From the above data collected of five brands of apple juice, it could be inferred that the most popular brand is tropicana with an average score of 8.6 followed by Real and Delmonte juices. However the popular brands like safal fruit mania are way lacking in the consumers acceptance in terms of flavour and texture.

## Mango Juice :

Brands	Delmonte	Gopal Jee	Fresca	Tropicana	Real	Frooti
<b>Parameters</b>						
Appearance	7.4	5.8	7.4	8.8	8.4	8.8
Colour	6.8	5.6	7.3	8.4	8.2	8.7
Flavour	7	5.9	7.7	7	8.1	8.2
Texture	6.6	6.1	7.2	8.5	7.8	8.1
Overall Acceptability	6.9	6	7	8	8.1	9
<b>Average</b>	6.5	6	7.5	8	8	8.5

From the above data collected of six brands, it could be inferred that the most popular brand is Frooti in case of mango juice with an average 8.6 followed by Tropicana and Real with an average of 8.0. However the not much popular brand gopaljee mango rush is way

lacking in the consumers acceptance in terms of flavour and texture. Delmonte is an established brand but the panellist didn't liked the texture and colour as compared to the most popular Frooti.

#### Guava Juice :

Brands	Fresca	Tropicana	Real
<b>Parameters</b>			
Appearance	7.2	8.1	8.6
Colour	7	8.5	8.7
Flavour	7.6	8.3	8.9
Texture	7.7	8.9	8.8
Overall Acceptability	7	8	9
<b>Average</b>	7	8.5	8.5

From the above data, it could be inferred that the most popular brand is Tropicana with a competition with Real juice with an average score of 8.5. Texture of Tropicana juice is better as compared to real juice but appearance, flavour and overall acceptability of real juice is better as compared to other brands.

#### Orange Juice :

Brands	Safal Fruit Mania	Delmonte	Fresca	Gopal Jee	Tropicana	Real	Minute Maid
<b>Parameters</b>							
Appearance	6.6	7.2	7.4	5	7.8	8.6	8.4
Colour	6.2	6.8	7.8	5.4	7.6	8	8.2
Flavour	6.5	8.2	7.3	5.9	7.5	8.2	8.1
Texture	6.5	8.0	7.9	5.5	7	8.5	8.6
Overall	6	7	8	6	7.2	8	8
Acceptability							
<b>Average</b>	6.5	7.5	7.5	5.5	7.5	8.5	8.5

From the above data, it could be inferred that the most popular brand are Minute maid and real in case of orange juice with an average score of 8.6. However the less popular brand like Gopaljee are way lacking in the consumers acceptance in terms of all parameters followed by safal.

#### Conclusion:

In the study, different available brands of five flavour of fruit juices were evaluated on the basis of sensory analysis. And it was concluded that Tropicana was preferred for litchi, apple, and guava juice. While Minute Maid and Real orange juice was liked by the panellist, however in case of mango juice, the established Frooti (Parle) was still the best choice among all available brands of mango juice.

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