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Study on organoleptic score of different fruit flavoured whey drink from *Chhana* whey

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ABSTRACT : The present study was carried out to know the organoleptic score (flavour, colour, viscocity and taste) of different flavour whey drink (mango, orange, without flavour but salt added). It was concluded orange flavour citric acid chhana whey soft drink was highly preferred

KEY WORDS : Organoleptic score, Fruit flavour, *Chhana* whey

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INTRODUCTION

India ranks first in milk production, accounting for 20 per cent of world production. Milk production in India is about 187.7 million tonnes in 2018-19 at in average annual growth rate of 4.5 per cent (Basic Animal Husbandry Statistics, D.A.H.D. and F, GOI). Out of an estimated total milk production in India only 46 per cent is consumed as fluid milk and the rest of 54 per cent is being converted in different milk products. The conversion of the milk into various products largely depends upon the climate condition, taste of people and facilities available for the manufacturing of products.

Chhana is most important indigenous milk products be cause it is rich in fat and protein *Chhana*. Whey is a fluid obtained in the process of manufacturing of *Chhana*. Whey is generally contains about 6.5 to 7.0 per cent solids which is approximately half of the total solids of original milk and has a good nutritive value. The percentage distribution of milk constituents in *Channa* and whey prepared from cow and buffalo milk is presented in Table A.

In the preparation of *Channa* we get about 85 per cent whey and 15 per cent *Chhana*. The perusal of the following Table, we can asses the nutritional value of *Chhana* whey prepared from different coagulants.

About 180.0 million tonnes of whey produced annually in world. In which 68 per cent of it is produced in the European countries and about 24 per cent in the North America. In India production of whey is about 5.0 million tonnes per year (Gupta, 2020).

The present study was planned to know the best utilization of whey by the preparation of fruit flavoured drink from the consumer acceptability by organoleptic score.

MATERIAL AND METHODS

In present study 20 samples of crossbred cow milk (Jersey cross) selected from individual milk producer in morning milking *Chhana* making. The method of random sampling was employed in selection of milking animals

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Table A: Showing per cent distribution of milk constituents in *Chhana* and whey

Sr. No.	Constituents (%)	Per cent distribution			
		Cow milk		Buffalo milk	
		Chhana	Whey	*Chhana*	Whey
1.	Fat	90	10	85	15
2.	Protein	89	11	91	09
3.	Lactose	07	93	12	88
4.	Mineral	48	52	60	40
5.	Total solids	58	42	65	35

(Source De, 1983)

Table B : Showing the nutrient per cent in *Chhana* whey

Sr. No.	Constituents (%)	Coagulants	
		Citric acid whey	Lemon juice whey
1.	Fat loss	0.46	0.50
2.	Moisture	54.50	53.95
3.	Total solids	45.50	46.05
4.	Yield of *Chhana* whey	78.32	81.36
5.	Yield of *Chhana*	12.94	13.38

(Source: Gupta, 1993)

Table C : Showing the percentage composition of cross bred cow milk used for *Chhana* making

Constituents	Fat (%)	Casein (%)	Total solids (%)	Moisture (%)	Acidity (%)	Specific gravity
Average values	4.58	2.57	13.71	86.29	0.13	1.030

(Source : Gupta, 1993)

Table D : Showing the ingredient combination for *Chhana* whey soft drink using different coagulants

Ingredient	Coagulants					
	Citric acid whey drink			Lemon juice whey drink		
	1	2	3	1	2	3
Stabilizer (%)	0.5	0.5	0.5	0.5	0.5	0.5
Sugar (%)	5.0	5.0	5.0	5.0	5.0	5.0
Flavour	Mango	Orange	With out flavour	Mango	Orange	With out flavour
Colour	Red	Orange	No colour	Red	Orange	No colour
Salt (%)	No salt	No salt	0.1	No salt	No salt	0.1
Acidity (%)	0.25	0.25	0.25	0.25	0.25	0.25

Table E : The following organoleptic score card was used for evaluation of whey drink as per suggested by body felt (1981) with modification

Ingredient	Perfect score	Score card		
		Mango	Orange	With out colour flavour but salt 0.1%
Flavour	30			
Colour	20			
Viscosity	20			
Taste	30			
Total score	100			

for this purpose. The milk was analyzed for fat, casein, specific gravity, total solids, moisture and acidity per cent as per recommended by A.O.A.C. (1970). The mean values of cross bred cow milk used for *Chhana* making is presented in Table C.

The following plan was used for preparation of different type soft drink as suggested by Gagrani and Rathi (1987) with slight modification.

The data were analysed statistically by using "T" test as recommended Panse and Sukhatme (1985) with

Table 1 : Showing organoleptic score of chhana whey soft drink using different coagulant

Sr. No.	Characteristics	Perfect quality score	Citric acid			Lemmon juice		
			Mango	Orange	With out flavour but salt	Mango	Orange	With out flavour but salt
1.	Flavour	30	20.4	24.0	12.2	21.0	23.6	13.8
2.	Colour	20	13.6	16.6	11.2	16.0	15.4	12.0
3.	Viscoity	20	15.2	16.0	13.2	15.2	16.0	13.4
4.	Taste	30	21.0	24.6	19.6	22.6	25.0	20.0
5.	Total score	100	72.2	81.2	56.2	74.8	80.0	59.2

slight modification.

RESULTS AND DISCUSSION

The organoleptic score of different *Chhana* whey soft drink are given in Table 1.

It is evident from Table 1. The highest total orgnoleptic score was found in orange flavour drink both in citric acid and lemon juice coagulants and lowest total organolaptic score was found in without flavour with salt drink both in citric acid and lemon juice. The flavour, colour and viscosity score was found highest in orange flavour citric acid whey drink but taste score was slightly higher in lemon juice flavour drink. The average lowest organleptic score individuals regarding flavour, colour, viscosity and taste was found in citric acid whey drink in comparison to lemon juice. The statistically observation indicates significant variation only orange favour soft drink. Same work done by Gupta (2019).

Conclusion :

It can be concluded from the among different flavour drink orange citric acid whey drink highly preferred.

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