

PREPARATION OF A BEVERAGE FROM FILLED MILK WHEY

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Whey is an important byproduct obtained during the manufacture of cheese, casein, Chhana/Paneer and coprecipitates. A variety of beverages consisting of plain, carbonated, alcoholic and fruit-flavoured have been successfully developed and marketed all over the world, because they hold great potential for utilising whey solids. Advantage of whey drinks lies in their thirst quenching and refreshing properties in addition to higher nutritional qualities.

A study has been undertaken to convert the whey obtained as a byproduct of paneer prepared from coconut fat filled milk into an acceptable soft drink.

Materials and Methods

The whey was obtained as a byproduct during the preparation of paneer using cows' milk and skim milk filled with coconut fat. Paneer was prepared as per the method suggested by Kundu and De (1972).

Fresh cow's milk and coconut milk extracted from mature coconut kernel gratings were used in the study. The coconut milk was added to skim milk to prepare filled milk with four per cent fat.

The whey drinks were prepared according to the method suggested by Gandhi (1984) with slight modification. Whey was inoculated with pure active culture of *Streptococcus lactis* (2 per cent) and incubated at 37°C. for 18 hours. After incubation, sugar was added at 10 per cent level, heated to 80°C. for one minute and filtered using a muslin cloth. The whey was then cooled to

room temperature.

Pineapple flavoured whey drink were prepared by adding 0.7 ml. of Pineapple flavour and 4 ml. (one per cent aqueous solution) of apple green colour to one litre of whey. Lemon flavoured whey drinks were prepared by adding 1.3 ml. of Lemon flavour and 4 ml. (one per cent aqueous solution) of Lemon yellow colour per litre of whey. Both the drinks were then stored in the refrigerator at a temperature of $5 \pm 1^\circ\text{C}$ and the organoleptic qualities were assessed by a panel of 5 judges at the end of first, second and third day of storage. The score card proposed by the Bureau of Indian Standards (IS: 7768, 1975) was followed for the evaluation of whey drinks.

The pH of the whey drinks was measured using a digital pH Meter. Eight replications were done for each item and average values were calculated. The values were statistically analysed using 't' test (Snedecor and Cochran, 1968) to arrive at a conclusion.

Results and Discussion

The mean value of pH of control and experimental whey drinks were found to be 4.142 and 4.136 respectively. No significant difference was observed between the mean pH of control and experimental whey drinks. The above findings coincide with the observations of Bambha *et al.* (1972). The overall mean scores obtained for the pineapple and lemon flavoured whey drinks on the first, second and third day of storage at refrigeration temperature ($5 \pm 1^\circ\text{C}$) are given in Table 1.

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Table 1 Mean values of Organoleptic score obtained for pineapple and lemon flavoured whey drinks on first, second and third day of storage at 5 ± 1 °C

Samples	Storage		Particulars			
	Day	Appearance	Colour	Flavour	Body	Total
Pineapple						
Control	1	10.00	19.00	38.10	28.90	96.00
	2	9.80	19.00	38.30	28.50	95.60
	3	9.40	18.50	37.50	28.30	93.70
Experiment	1	9.75	18.63	38.50	28.80	95.68
	2	9.60	18.90	37.50	28.40	94.40
	3	9.50	18.60	36.10	28.40	92.60
Lemon						
Control	1	9.75	18.63	38.50	28.80	95.68
	2	9.70	18.60	38.50	28.80	95.60
	3	9.38	18.37	36.75	28.25	92.75
Experiment	1	9.50	18.38	37.25	28.75	93.88
	2	9.30	18.50	37.50	28.30	93.60
	3	9.62	18.38	35.88	28.50	92.38

Both the control and experimental samples of pineapple flavoured whey drinks were graded as 'excellent' on the first, second and third day of storage. As in the case of pineapple flavoured whey drinks, lemon flavoured control and experimental whey drinks were also graded as excellent. Appearance, colour, flavour and body texture of control and experimental whey drinks, when compared, were found to have no significant difference between them. Similar observations were reported by Blazek and Sule (1961), Bambha *et al.* (1972) and Gandhi (1984) for acid whey drinks. The high score obtained for experimental whey drink is in accordance with the observations reported by Fernandez and Samaniego (1986). They have reported high

consumer acceptance of coconut milk whey beverage.

Summary

Control whey samples were obtained as a byproduct during the preparation of paneer using cow's milk and experimental whey samples from paneer prepared using skim milk filled with coconut milk. The milks were standardised to four per cent fat. Pineapple and Lemon flavoured control and experimental whey drinks were found to be apparently similar in pH, appearance, colour, flavour and body characters. They were graded as of excellent quality on all the three days of storage.

References

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