

Development and Quality Evaluation of Ready to Drink Fruit Flavored Whey Beverage

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The major by-product of cheese manufacturing is cheese whey which contains many milk nutrients. Though it has good nutritional properties, it is not used in effective manner in Sri Lanka. Therefore the objective of this study was to develop a fruit flavored whey beverage. A preliminary investigation was carried out with passion fruit, water melon, Indian gooseberry, black plum and governor's plum to check the effect of each fruit on the sensory properties and the stability of the whey-fruit juice mixture. Then the levels of the required additives were tested for the three selected whey-fruit juice mixtures from the preliminary investigation. Three whey beverages were developed and tested for color, sedimentation, odor, taste and overall acceptability using a nine point hedonic scale. Crude protein, titrable acidity, moisture percentage, pH and the total soluble solids (TSS) were analyzed for the most accepted formulation in the sensory evaluation. The preliminary study revealed negative effects of black plum and governor's plum on the development of a whey beverage. 15% of passion fruit, water melon and Indian gooseberry could be blended with 75% of cheese whey while retaining acceptable flavor, color and the stability. 0.3% of citric acid, 0.7% of pectin and 9% of sugar were effective for those formulations. The results of sensory evaluation revealed that there was a significant difference among three tested whey beverages with respect to all tested sensory attributes. The whey beverage flavored with passion fruit was the most accepted formulation which contained 0.47% of crude protein, 0.73% of titrable acidity, 82.03% of moisture and 17.97% of TSS. The pH value was 3.82 at 25°C which showed a decreasing trend, indicating an increase in acidity during storage in glass bottles. Therefore it could be concluded that conversion of cheese whey into passion fruit flavored whey beverage is a good attempt for the value addition of cheese whey for human consumption.

Keywords: Cheese whey, Beverage, Fruit flavored, Ready-to-drink, Value addition