

ANALYSIS OF SELECTED NUTRITIONAL PARAMETERS OF POWDERED MILK AND PASTEURIZED MILK IN THE SRI LANKAN MARKET

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The study was carried out to identify nutritional quality of Full Cream Milk Powder (FCMP) and Pasteurized Milk (PM) in the Sri Lankan market. Four FCMP brands (Imported-A and B; Local-C and D [n = 12]), three PM brands (E, F and G [n = 9]) were purchased randomly from local markets in Colombo and Gampaha districts. As controls, raw Cow's Milk (CM) samples (n = 3) were collected from dairy farms just after milking. Each test was duplicated. A cup of milk was prepared as 25 g FCMP in 200 mL of water. Following experimental methods were used. Protein-Kjeldal, Fat-Gottlieb, Ash-Dry ashing, Carbohydrate percentage by subtracting % of Protein, Fat and Ash from % of dry weight, Moisture and Total Solids (TS) from Oven drying method, Titratable acidity (TA) as % of lactic acid. Brand wise comparison was carried out using one-way ANOVA, three types of milk was compared using two sample t-test and standard achievement was determined from one sample t-test where $p < 0.05$ was considered significant. Average values of fat and ash in PM and CM were not significantly different ($p > 0.005$) but significantly higher than in FCMP. Protein in CM was significantly higher than that of FCMP and PM. There was no significant difference between the mean carbohydrate and pH in FCMP and PM with the CM. There was no significant difference between mean protein, fat, carbohydrate and ash in COM of imported (6.05 ± 0.48 , 6.54 ± 0.05 , 10.74 ± 0.75 , 0.80 ± 0.32 , respectively) and locally produced brands (6.13 ± 0.60 , 6.25 ± 0.49 , 11.06 ± 0.94 , 0.86 ± 0.43 , respectively). Fat level in D was significantly lower than A, B and C. Mean TA in FCMP was significantly lower than the PM and there was no significant difference between the PM and CM. There was no significant difference in Specific gravity (SG) of A, B and C when compared with CM while D and E were significantly higher than CM. Moisture percentage of FCMP brands fulfills Sri Lankan standards and moisture (%) and the value in imported milk was significantly higher than in local brands. TS in PM was significantly lower than the CM. SG of G was significantly higher and TS of G was significantly lower than the CM. Nutritional value in a cup of milk in the three types of milk were $CM > PM > FCMP$. In conclusion, the physico-chemical parameters of three types of milk were within the acceptable levels, while the Sri Lankan and imported brands have similar nutritional values.

Keywords: Pasteurized milk, Physico-chemical properties, Powder milk, Sri Lanka