

**DEVELOPMENT OF CALCIUM FORTIFIED
FLAVORED PASTEURIZED MILK FOR PREGNANT
AND BREST FEEDING WOMEN**

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ABSTRACT

Calcium is the most abundant mineral in the body and calcium enrichment in dairy industry gain interest in recent years. This study was carried out to develop calcium fortified flavoured milk for pregnant and breast feeding women to satisfy their Recommended Daily Intake (RDA) and to find the best pasteurization treatment which ranks high amount of soluble calcium in liquid phase. Three different commercially available calcium sources were used namely Calcium Carbonate (CaCO_3), Calcium Chloride (CaCl_2) and Tri Calcium Phosphate ($\text{Ca}_3(\text{PO}_4)_2$) and best source for the fortification was selected by means of sensory evaluation 5 point hedonic scale with 15 trained panelists. The sensory properties of fortified milk were developed by series of preliminary trials with slight modifications of flavour profile, sugar content, flavour percentage and stabilizer percentage. Three batch pasteurization treatments were performed as; 70°C for 15 minutes, 80°C for 10 minutes and 90°C for 5 minutes to pasteurize the sample. Then, amount of soluble calcium was analysed by Atomic Absorption Spectroscopy (AA- 240, Australia). According to the results CaCO_3 was selected as the best source of calcium for fortification of milk. Adding vanilla flavour to the fortified milk increases the consumer acceptance by masking the undesirable taste of CaCO_3 . Addition of carrageenan as a stabilizer improves the sensory properties of fortified milk by reducing gritty mouth feel associated with CaCO_3 . Solubility of calcium carbonate is higher when the pasteurization time period is longer.