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WANNEE CHATURACHUMROENCHAI : FORMULATION OF IMITATION MILK PRODUCTS CONTAINING LOW LACTOSE, HIGH CALCIUM AND SUITABLE FATTY ACID RATIO FOR GENERAL CONSUMER AND STRICT VEGETARIAN. THESIS ADVISOR : VISITH CHAVASIT, Ph.D., PRAPASRI SIRICHAKWAL, Ph.D., WANTANEE KRIENGSINYOS, M.Sc. WILAIRAT MANEESATHEANRATTANA, M.Sc. 127 p. ISBN 974-589-517-2

Eventhough cow milk has been known for its excellent nutritive value, consumption of it is usually limited in people with lactase deficiency. Strict vegetarians substitute soybean milk for cow milk, which usually results in lowering consumption of good quality protein and calcium. Whole or full-fatted cow milk is not allowed for the elderly and people with degenerative diseases due to high content of saturated fatty acids. Imitation milk products containing low lactose, high calcium and suitable fatty acid ratio were formulated by using ingredients such as milk protein concentrate, skim milk powder and pasteurized milk as protein sources in imitation cow milk products, and isolated soy protein in an imitation soybean milk product, milk fat and vegetable oils, and other food additives. Four formulas of imitation cow milk products containing three levels of lactose content were developed as follows (i) 2 formulas of lactose free, (ii) 0.89% lactose and (iii) 3.74% lactose, while one formula of imitation soybean milk product was formulated. All of them contained the same amounts of protein and fat as normal whole cow milk, however calcium was increased to be about 50% of RDI per 250 ml serving, with the fatty acid ratio of about 1:1:1 (P:M:S). The imitation cow milk products which contained pasteurized milk as an ingredient were scored about 6 on a 9 point sensory hedonic scale which was significantly higher than the remaining formula ($p < 0.05$). The imitation soybean milk product was also moderately accepted at the score of about 7 from the same scale. The pasteurized imitation milk products could be stored in refrigerator for one week without affecting sensory acceptability eventhough the peroxide values tended to increase. Costs of raw materials of all imitation milk products except for imitation soybean milk were higher than the raw cow milk. A study of the potential for the sterilization of the imitation milk products indicated that citric acid and metabisulfite were needed to prevent browning.