PRODUCTION OF ICE CREAM ENRICHED WITH RED DRAGON FRUIT

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ABSTRACT

The purpose of this thesis was to develop low fat and fat free ice creams enriched with red dragon fruits with the use of appropriate fat replacer in which the outcomes were comparable to regular fat ice cream both in term of sensory profile and acceptability. Five formulations containing different fat level, amount and type of fat replacers were developed and be first studied in the Quantitative Descriptive Analysis (QDA) by 14 trained panelists. Chosen samples were then progressed to further analysis including protein analysis using Kjehdal method [AOAC Official method 991.20], total solid test [AOAC official method 941.08] ,meltdown test, and lastly consumer hedonic sensory evaluation to examine their overall acceptability. Fat-free red dragon fruit ice cream with Simplesse® (CP Kelco, U.S.) (FFS) and low-fat red dragon fruit ice cream with Simplesse® (CP Kelco, U.S.) (LFS) were chosen to be the best compatible to regular fat ice cream compared to those with MALTRIN® M100 maltodextrin (Grain Processing Corporation ,USA) for fat replacement. FFS and LFS had lower total solids (TS) contents yet higher melting rate than control (C). FFS was found to contain a higher protein content of 5.63%. Significant differences were found between FFS and LFS with C in terms of coldness, creaminess, firmness and mouth coating but not in sweetness, smoothness and viscosity in QDA. Both FFS and LFS were evaluated as acceptable when comparing to commercial fat-free and low-fat fruit based ice creams during the consumer hedonic testing.