Effect of flaxseed oil towards physicochemical and sensory characteristic of reduced fat ice creams and its stability in ice creams upon storage

This study investigates the effect of flaxseed oil towards physicochemical and sensory properties of reduced fat ice creams and its stability in ice-creams upon storage. Three formulations, (F1, F2, F3) were developed by substituting milk fat with flaxseed oil at levels of 2.5%, 5.0% and 7.5%, (w/w) respectively. Samples were subjected to sensory evaluation and analyses such as meltdown, titratable acidity, pH, total solids, protein and fatty acids composition. Incorporation of flaxseed oil into ice-cream showed no effects on physicochemical properties of the ice-creams. However, it increased the colour of ice-cream towards yellowness, decreased the sweetness, smoothness and creaminess. Flaxseed oil incorporation also slightly (P < 0.05) decreased the acceptance level of aroma, flavour, texture and overall acceptability of formulated icecreams. The most acceptable level of flaxseed oil substitution is at 2.5 %. Gas chromatography analysis showed that fatty acids slightly decreased upon storage.