PRODUCTION OF SOUR PLUM FLAVOURED REDUCED-FAT MAYONNAISE

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ABSTRACT

The aim of this study was to develop reduced-fat sour plum flavoured mayonnaises in which the oil content was reduced to 10% and 20% and replaced by fat replacers Maltrin® M040 maltodextrin and Simplesse® 100 as the fat replacer. Four reduced-fat mayonnaise samples were produced according to designed formulations. The full fat mayonnaise (81.11% oil content) without fat replacer was used as control. Quantitative Descriptive Analysis (QDA) and hedonic test were carried out to evaluate sensory quality and acceptability of formulated mayonnaises. After that, the physicochemical analyses and viscosity measurement were carried out to investigate the effect of these fat replacers toward formulated mayonnaise. The results indicated that all reduced-fat mayonnaises had significantly (P ≤ 0.05) lower total fat content and total solids content, but significantly (P ≤ 0.05) higher in moisture content than full fat mayonnaise. With regard to total protein content, reduced-fat mayonnaise with Simplesse was significantly (P ≤ 0.05) higher than both full fat and reduced-fat mayonnaises with maltodextrin. The results of viscosity measurement showed that mayonnaise is a non-Newtonian and the viscosities of all reduced-fat mayonnaises were lower than full fat mayonnaise. Results of QDA test showed that no significant difference (P > 0.05) was found in the oiliness of full fat and reduced-fat mayonnaises while the differences of sourness, smoothness, and viscosity were significant (P ≤ 0.05). The overall acceptability of commercial mayonnaise was the highest (72.92%) compared to reduced-fat mayonnaises in hedonic test. However, the reduced-fat sour plum flavoured mayonnaise was acceptable (70%) to be a healthier choice in the diet. This study showed Maltrin® M040 maltodextrin and Simplesse® 100 used as fat replacers in mayonnaise have respective advantages and disadvantages.