

PRODUCT DEVELOPMENT OF “KAYA” WITH PARTIAL SUBSTITUTION OF INULIN AS SUGAR REPLACER

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2009

ABSTRACT

The main purpose of this study was to determine the acceptability level and the effect of inulin substitution in the "kaya" spread. The acceptability level was tested towards physical, chemical, microbiological tests as well as sensory evaluation. A control "kaya" sample was developed, along with the substitution of portion of sugar by inulin at 10% (Formulation 1), 20% (Formulation 2) and 30% (Formulation 3). Quantitative Descriptive Analysis (QDA) results from 10 trained panelists demonstrated that firmness and adhesiveness increased with increasing amount of inulin substitution. However, sweetness, smoothness and spreadability were inversely proportional to the amount of inulin substitution. Affective tests were conducted among 100 untrained panelists to evaluate the acceptance level of formulated "kaya" spreads in comparison with commercial "kaya". Results revealed that F1 and F2 were well accepted among all formulated "kaya" samples whereas F3 received negative responses as it has ratings that was lower than 5.0 (neither nor dislike). The most preferable formulated "kaya" sample was F2 with 20% of inulin substitution, followed by F1 and F3. The knowledge of health benefits of inulin and reduced-sugar food product caused an increase in purchase intent. This indicates the marketability prospect of inulin containing products. Total Soluble Solid (TSS) values were observed in a decline pattern while water activity values increased from very first day till Day 14 but decreased on Day 21. The pH values of "kaya" samples dropped significantly on Day 21. The calcium content and ash content of F2 is slightly higher than commercial "kaya" spread. Nonetheless, there is no significant difference in their protein and fat content. F2 has 20% of sugar reduction comparing to control sample. Besides that, there was more than 50% of sugar reduction by comparing to the two selected commercial "kaya" spreads. Lastly, the total plate count results revealed all "kaya" samples were safe to be consumed. In short, inulin can be incorporated into "kaya" spreads.

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