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FORMULATION OF FISH AND VEGETABLE SPREAD

By

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Declaration

The work describe in this thesis was carried out by me under the supervision of Prof. Arther Bamunuarachchi and Mrs. Indira Wickramasighe (Department of Food Science and Technology, University of Sri Jayawardenapura, Nugegoda, Sri Lanka) and Mrs.Lalitha Kanapathyraj (Research and Development Manager, Primer Export Ceylon Limited, Instant Tea Division, Unilever Sri Lanka) .I declare that this report or any part of the report has not been submitted, presented or accepted in any previous applications for another degree.

2009.08.12 .....

Date

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Declaration of the supervisors

We certify that the above statement made by the candidate is true to the best of our knowledge and that this thesis is suitable for submission to the university for the purpose of evaluation.

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FATHER, MOTHER AND WIFE

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ABSTRACT

Consumers value the rich flavor and smooth texture of Margarine and spreads. variations due to processing, storage conditions, addition of ingredients, spices and salt, there are many diverse flavor profiles, textures, and taste of spreads. A better understanding of the key drivers of vegetable oil spread purchase may aid in identification of marketing strategies. Formulation of fish and vegetable spread is a ready to eat product and having Nutritional enriched fat spread which full fill daily the part of the nutritional requirement and ready to spread over the breads, buns, burgers and etc;. Microbiological test for the product done according to the Sri Lanka Standard Institute and carried out in my self and final tests done by Medical Research Laboratory. .

Sensory evaluation of formulated spread best value obtained for the tuna blended spread and analytically found the dehydrated vegetables added formula chemical characteristics no vary and minimum risk of having peroxides or rancid compounds. Steam cooked Fish and vegetables proximate analysis was done for 2 months and statistically analyzed results were Moisture 37.9 ± 0.14 %, pH 6.7 ± 0.14 %, Fat 51.55 ± 0.07 %, Protein 2.7 ± 0.14 %, Peroxide Value 1.14 ± 1.49 %, Free Fatty Acid 0.13 ± 0.04 % and melting point was 35.5 ± 0.14 %.

Formulation with steam cooked fish flesh ad dehydrated vegetables continue up to 4 month period of Proximate and last 3 months Microbiological analysis were conducted and 4 months results were analyzed statistically , Moisture 29.6 ± 0.23 %, pH 6.6 ± 0.13 %, Fat 51.82 ± 0.17 %, Protein 3.6 ± 0.16 %, Peroxide Value 0.10 ± 0.4 %, Free Fatty Acid 0.13 ± 0.03 % and melting point was 35.5 ± 0.08 %,and APC 1.2 x

10^3 CFU,Coliforms 0.67 1.15 CFU , Moulds 2 2 CFU, Yeast 30.33 11.59 CFU ,and Not Detected for *salmonella sp, staphylococcus aureus* and fecal coliforms.

In the present study Fish and Vegetable spread were formulated vary and steam cooked vegetables formulations were rejected after product was tested to chemical and microbiological analysis , best formulations were steam cooked fish flesh and dehydrated vegetable spread up to four months with out as per the acceptance levels .

This formulated paste could be stored under refrigeration 3 months of self life with out adding preservatives and using preservatives can be extended self life.