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Development of a High Fiber Content Batter

by

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Thesis submitted to the University of Sri Jayawardanepura for the award of the degree of Master of Science in Food Science and Technology.

DECLERATION

The work described in the this thesis was carried out by me under the supervision of Prof Arthur Bamunuaracchi and a report on this have not been submitted in whole or in part of any University or any other institution for another Degree/diploma.

Date:..2006.:..1.1:.01 .....

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I certify that the above statement made by the candidate is true and this thesis is suitable for submission to the University for the purpose of evaluation.

Date: 28/11/06

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ABSTRACT

Batter and breaded food products have long been popular consumer food items. Coating sea foods, poultry, red meat and vegetable products with a batter and/ or breading is common practice in modern food business. Fish fingers, Chinese rolls, fish cake, burgers, cutlets are the staple battered and breaded food items while battered poultry, Oyters, Shrimps ,Scallops , cater to luxury markets and widely used in restaurant trade. The development of basic recipes for the batters has been done time to time and the technology has been developed to get the desired batter characteristics. The nutritional qualities in batters have also play an important role

The objective of this study was to develop a high fibre contained batter that can be used in Chinese rolls production by using easily available ingredients. The Kohila (Lasia spinosa) powder and Radish (Raphanus sativus).powder were used for the recipe formulation. The existing recipe which is used in pancake production for Chinese rolls has been modified by adding different proportions of the Kohila (Lasia spinosa) and Radish (Raphanus sativus) powder. Four recipes were developed for each variety .Because of the high

water absorption rate of Kohila and Radish dehydrated powder was used during recipe formulation.

The crude fibre percentages of the pancake with new recipes and the existing recipe were determined. Chinese rolls prepared from the pancakes of the above recipes were subjected to sensory evaluation with the control to asses organoleptic properties.

The crude fibre percentages of the pancake which were made from Kohila and Radish were 10-12% high with comparing to normal batter. The overall acceptability of sample made of 50% radish was significantly lower than that of the control. There was no significant difference between the other batter formulations and the control for overall acceptability.

1. Introduction

Batter and breaded food products have long been popular consumer food items. Coating sea foods, poultry, red meat and vegetable products with a batter and/ or breading before cooking is a common practice in home makers, food processors and commercial food establishment modern food items. Recently the relative importance of coating has shifted from the home maker to use in restaurant and fast food outlets.

The commercial production of battered and breaded food items has increased by quantum loops.

Batter can be defined as a thick beaten liquid mixture as of flour, milk and eggs. But if correctly defined batter is a liquid mixture comprised of water, flour, starch and seasonings in food products are dipped prior to cooking.

A coating will be referred to as the batter or the breading adhering to a food product after cooking.

The market for coated food is actually market for various battered and breaded flesh and vegetable protein products intended for both retail and food service distribution.

An important consideration in the marketing and development of food products is, and will continue to be, taste. There is no better way to enhance flavor and differentiate foods than with coatings.

Viscosity, solids suspension, set-up character, leavening stability, browning rate, and flavor are the important batter selection characteristics. Batter viscosity may determine the success of a batter-coated food product more than any other

characteristic. Batter viscosity influences the quality and quantity pickup, the potential for voids, the handling ease, breading pick up and the final coating texture. It is it self affected by batter temperature, ingredient composition and solids –water ratio.

The set up character of batters should be evaluated during product development. The batter should be formulated to set quickly if it will be subjected to a prefer step, where as more slowly setting batter may be used continuous fry operations. The set up character is determined by the flour proteins and starches. Browning rate and flavor considerations form batters are similar to those for breadings.
The effective use of flavorings and seasonings in batter and breading system is more complex than many processes than many processors and food scientists may realize.

The food technologists can draw from a long "shopping list" of ingredients to yield a batter having the required properties. This creative challenge has made batters and breading an ideal area for nurturing new approaches and technologies. The typical formulas can be broken down in to critical and optional ingredients. By altering the optional ingredients can change the batter recipe to give what ever required nutritive characters
Recently, the relative importance of coating has shifted from the homemaker to use and fast food out lets

Fish fingers, Chinese rolls, fish cake, burgers, cutlets are the staple breaded food items while battered poultry, Oysters, Shrimps ,Scallops , cater to luxury market and widely restaurant trade

As batter technology evolves from art to science, the general role of ingredients come in into focus.

Aims of the project

Develop a high fibre contained batter that can be used in Chinese rolls production by using easily available ingredients.