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DEVELOPMENT OF BAKERY FRESH, LOW COST, NATURAL BREAD IMPROVER FOR THE ORDINARY BAKERY INDUSTRY

By

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M.sc. **2011**

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DECLARATION

The work described in this was carried out by me at the University of Sri Jayewardenepura. Under the supervision of Professor K. K. D. S. Ranaweera. Department of food science and Technology University of Sri Sayewardenepura and Dr. S. B. Nawarathne, senior lecture of University of Sri Jayewardenepura and report on this has not been submitted to any university for a degree and been presented an accepted in previous application for a degree and has been presented or accepted in previous application for a degree.

10 · 5 · 2013
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Date

R.K.T.K. Pathirana

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

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ABSTRACT

Hence a study was carried out with two factor factorial design with 4 variables such as level of sugar and yeast ,leavening time and drying process at two levels. Thus 16 treatment combination with 3 replicates were subjected for the study.

Efficacy of the treatments was evaluated in terms of leavening index and results revealed that best treatment was $a_1b_1c_1d_1$ as this treatment was capable to accomplish the desirable leavening index 2.0 within a matter of 21/2hrs.

Thereafter these best treatment combinations ($a_1b_1c_1d_1$)were used as the bread improver in manufacturing commercial scale bread using a ordinary bread making recipe.

Bread obtained from these 3 treatment combinations (Bread improvers) were subjected for measuring and comparison of physical, chemical and organoleptic properties along with normal bread as a control treatment.

Bread produced from $a_1b_1c_1d_1$ bread improver was capable to high quality bread comparatively control treatment, because bread out of this treatment was capable to secure low bulk density ($0.125cm^{-3}g^{1}$), high quality bread crumb & crust structure along with better sensory properties.

However, moisture content and PH value of the bread produced with the best treatment were remained within with the regulatory requirement of less 40% and 5.2-6.0 respectively.

CHAPTER 1

INTRODUCTION

Bread is one of the most important breakfast food consumed by almost all over the world, even in developing countries like ours. The character of the industry has changed over the years with the introduction of innovation technology such as preservatives, improvers and improved mechanical methods. Traditionally bread is based on flour derived from the cereal grain wheat. The extracted wheat flour used in bread making process because which mainly consists of starch and water insoluble protein. However wheat flour is poor in vitamins, minerals and dietary fibre, nevertheless over the last decades a tendency to adopt bread as a regular food product has become increasingly apparent in developing countries like ours. To satisfy the demand for bread, they will have to import an ever increasing quota of wheat and to be increased substantial amount of foreign exchange, which is burden for the national coffer. where as the bakery products are enrich with the ready to eat nature and time saving capacity of busy life style, their popularity has increased among the consumers. Therefore substantial amount of bakers are emerging in the commercial environments and as a result of that variety of bakery products are coming in to the market, especially with different kind of bread products., Hence stiff completion has been emerged among the bakery and only variable option to cop with this situation is the quality. Thus, improving of quality in bread particularly, softness of bread crumb, colour of the bread crust are very important because consumers inadvertently squeeze the bread crumb while looking at the bread. Crust for the better perception. Therefore improving of quality of bread crumb is an important aspect in order to maintain competitive edge of the bread in the dynamic market. A Productive option in improving quality of bread crumb, particularly the texture, is incorporation of a bread improver in order to accelerate the leavening process as well as to from a soft bread crumb. However bread improver are very expensive and very difficult to afford ordinary baker, as it is foreign origin, and also may contain some chemicals such as pottassium Bromate etc. Hence development of locally make natural bread improver is a great release for the ordinary baker, and also retaining of foreign exchange of the

country. The aim of this study is to develop a natural, low cost, health beneficial bread improver. For the dynamic and competitive marketing environment in the country.

Main objective

Development of baker friendly, low cost, natural bread improve for the ordinary bakers. In order to improve bread crumb as well as bread crust for better perception of consumer.

Specific objectives

i. Select of best bread improvers out of sixteen treatment combinations in terms of leavening index.

ii. To identify the physical and chemical characteristics of bread such as pH ,bulk density ,loaf volume, prepared from the best bread improver. ,

3 To examine the organoleptic qualities(sensory) of bread prepared from the best bread improver as against ordinary bread.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Wheat (Triticum Vulgare)

Wheat is the most important cereal used in bread making it grown in the Middle East but now widely grown through out the world (Ronalds Kirk Teal, 1991).

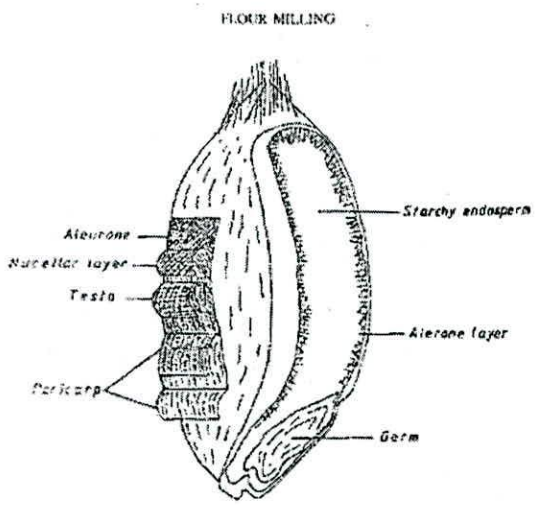

Fig. 1: Wheat grain

2.1.1 Wheat varieties

1. **Hard red spring wheat**

   The flours are usually high in protein and have strong gluten. They are especially suitable for pan bread and specially breads.

2. **Hard red winter wheat**

   The flours are intermediate in protein percentage and strength most white pan bread is made with these flours.

3. **Soft red winter wheat**

   Flours from this wheat are used mostly for cakes, cookies and pastries since their protein content is low and the gluten relatively weak.