

**THE EFFECT OF INCORPORATION OF β -GLUCAN ON THE
QUALITY OF NON-FRIED INSTANT NOODLES**

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ABSTRACT

THE EFFECT OF INCORPORATION OF β -GLUCAN ON THE QUALITY OF NON FRIED INSTANT NOODLES.

This study was conducted to determine the effects of β -glucan on the quality of non fried instant noodles. Four different treatments were prepared which consist of 0% β -glucan (control), 3% β -glucan, 5% β -glucan and 10% β -glucan. The samples of non fried instant noodle were tested for proximate composition, calorie content, colour, texture and sensory qualities (hedonic and quantitative descriptive test). Increasing concentration of β -glucan significantly ($p \leq 0.05$) increased fat, protein and ash content except carbohydrate. In addition, the increasing concentration of β -glucan also produced darker products and decreased the firmness of the noodles. Quantitative Descriptive Analysis (QDA) was carried out for the yellowness, overall appearance, firmness, elasticity, smoothness, overall texture quality, after taste and overall quality perceptions for each sample. There is significant difference in firmness for non fried instant noodles at 5% and 10% β -Glucan. Similarly, the firmness of the noodles increased significantly ($p \leq 0.05$) as the concentration of β -glucan increased in instrumental analysis. Colour of the products become more brownish for 5% to 10%. The colour of 0% is slightly yellow. From a sensory point of view, non fried instant noodles containing β -glucan were generally rated as 'like slightly' by a hedonic scale.

CHAPTER 1

INTRODUCTION

1.1 Background and Problem Statement

β -Glucans are major components of starchy endosperm and aleurone cell walls of commercially important cereals, such as oat, barley, rye and wheat (Wood, 2004). Over the last two decades, the acceptance of β -glucans as functional, bioactive ingredients has increased the popularity and consumption of cereal-based foods as well as of many other foods fortified with cell wall-enriched grain fractions, β -glucan concentrates and isolates. In nutritional and a functional viewpoint, such foods fit into the description of ‘functional foods’ as they provide some of the normal quality attributes of a food, such as mouthfeel and texture, as well as conferring specific health benefits (Wood, 2002).

Noodles based on wheat are prepared mainly from three basic ingredients; flour, water, and salt. There exists two distinct types of wheat flour noodles based on the presence and absence of alkaline salts, regular salted noodles and alkaline noodles. The basic process of dough mixing, sheet forming, compounding, sheeting or reduction, and cutting are essentially constant for all machine-made noodles (Park and Baik, 2004). High quality noodles should be bright in colour with very slow discoloration, have an adequate shelf life without visible