

**EFFECT OF SILICON DIOXIDE AND SALT ON OIL
ABSORPTION AND QUALITY CHARACTERISTICS OF
YAM CRACKERS**

By

HYDER JALEEL BIN GAFOOR ABDUL RASHEED



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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF PLATES	xi
LIST OF ABBREVIATIONS	xii
ABSTRACT	xiii
ABSTRAK	xiv
CHAPTER	
1. INTRODUCTION	1
2. LITERATURE REVIEW	4
2.1 Crackers Production Technology	4
2.2 Traditional Method	5
2.3 Modified Method	7
2.4 Extrusion Method	8

ABSTRACT

EFFECT OF SILICON DIOXIDE AND SALT ON OIL ABSORPTION AND QUALITY CHARACTERISTICS OF YAM CRACKERS

Crackers or more commonly known as 'keropok' in Malaysia is popular snack food among countries in the Asian region. To date, very little of quality studies have been carried out on 'keropok' especially yam crackers. This work examined the addition of silicon dioxide and salt on the oil absorption and quality characteristics of yam crackers. Quality characteristics of 'keropok' were crispiness, colour and flavour. Increase addition of salt gave increased the linear expansion of yam crackers. Increase of salt content had reduced lightness colour of fried yam crackers. Oil absorption and fat contents of fried yam crackers increase with increase in salt content. Addition of silicon dioxide (0.1%-0.3%) with 2% salt content to yam crackers gave similar linear expansion. Addition of silicon dioxide gave more brighter colour of fried yam crackers and reduced oil absorption and fat content of fried yam crackers. Good raw material (yam), sufficient amount of salt (2% of the weight of yam and starch) together with sufficient amount of silicon dioxide (0.1% of the weight of yam and starch) and the proper sequence of adding ingredients in mixing are recommended to produce high quality of yam crackers.

CHAPTER 1

INTRODUCTION

Crackers or 'keropok' are popular snack foods in Malaysia. Yam crackers are produced by forming dough from a mixture of tapioca starch, yam, salt, sugar, monosodium glutamate (MSG) and water. Then they are shaped, boiled or steamed to gelatinize, sliced, dried and packed in polyethylene bags. Before consumption, the gel slices are fried in hot oil, whereupon the 'keropok' expands into a porous low-density product. A satisfactory degree of expansion on frying is an important quality parameter.

Fried foods like yam crackers are consumed in large amounts and contribute greatly to dietary fat intake. Excess consumption of fat is considered as they key dietary contribute to coronary heart disease and perhaps cancer of the breast, colon and phosphate (Browner et al., 1991). Frying is complex and important operation in the industrial or institutional preparation of foods.

Despite the fact that vast amounts of foods are produced by this method, frying is still considered by many to be more of an art than a science or technology (Blumenthal, 1991). Deep fat frying involved transfer of heat from the surrounding oil to the interior