

OSMOTIC DEHYDRATION OF MANGO (*Mangifera indica*) FRUIT

BY

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ABSTRACT

Osmotic dehydration is a useful technique for the production of safe, stable, nutritious, tasty and concentrated food. The present study was conducted to develop an osmo-dehydrated mango cubes and its juice. The cubes ($7 \times 7 \times 7$) mm³ were obtained from unripened mature sour mango variety (Walamba). The cubes were immersed in 0.03% of sodium metabisulphate solution for 5 min. and later in different concentration of hypertonic solutions such as 50%, 60%, 70% and 80% sugar with 1% salt solution and 50%, 60%, 70% and 80% sugar with 2% salt solution for 24 hrs. followed by oven drying at 50°C for 20 hrs. The weight reduction and the moisture contents were determined during and after osmosis respectively. The juice was prepared from these dried mango cubes.

The resulting both final products and fresh samples were analyzed for nutrient composition such as moisture content, acidity and vitamin C. Then sensory evaluation was conducted to both dried cubes and juice to verify the characteristics such as colour, flavour, taste, appearance and overall acceptability using Hedonic 9 point scale ranking method. From the whole result, the best hypertonic solution was selected and the moisture sorption study was conducted to that selected best solution at 5°C, 30°C and 40°C. The selected cubes had the moisture content of 15 - 20% and the water activity of 0.6 - 0.7 at different temperatures and had a higher shelf life.

Among the solutions 70% sugar with 2% salt was selected as the best hypertonic solution, which had very low significant difference with fresh sample in the organoleptic qualities, but the acidity and moisture content is very much reduced in osmotically dehydrated product.

CONTENTS

	PAGE
ABSTRACT	i
ACKNOWLEDGEMENT	ii
CONTENTS	iii
LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER 1 INTRODUCTION	1
CHAPTER 2 LITERATURE REVIEW	5
2.1 MANGO	5
2.1.1. Classification of mango	5
2.1.2. Origin and distribution	6
2.1.3. Variety	7
2.1.4. Area and production	7
2.1.5. Morphology of mango fruit	7
2.1.6. Composition and uses	8
2.1.7. Processing of mango	10
2.2 DEHYDRATION	12
2.2.1. Effect of dehydration on water activity of food	13
2.2.2. Pretreatment	13
2.2.3. Methods of dehydration	14
2.2.4. Osmotic dehydration	15

2.2.4.1. Process variables	15
2.2.4.2. Effect of osmotic dehydration on product	18
2.2.4.3. Osmotic dehydration of mango	20
2.2.4.4. Advantages of osmotic dehydration	20
2.3 MOISTURE SORPTING STUDIES	22
2.3.1. Forms of water retention	22
2.3.2. Water activity	22
2.3.3. Sorption isotherm	23
2.3.4. Methods of determining sorption isotherm	23
2.3.5. Determination of BET Monolayer value	24
2.4 SENSORY EVALUATION	25
2.4.1. Definition	26
2.4.2. Use of sensory analysis	26
2.4.3. Problem associated with sensory analysis	27
2.4.4. Rules of sensory analysis	28
CHAPTER 3 MATERIAL AND METHODS	30
3.1 PRODUCT DEVELOPMENT	30
3.1.1. Preparation of osmo-dehydrated mango slices	30
3.1.1.1. Preparation of osmotic solutions	30
3.1.1.2. Preparation of sodium metabisulphate solution	31
3.1.1.3. Dehydration	31
3.1.2. Preparation of mango juice	32
3.1.2.1. Materials	32
3.1.2.2. Methodology	32

3.2. NUTRITIONAL ANALYSIS	32
3.2.1. Estimation of acidity	33
3.2.2. Determination of vitamin C	33
3.2.3. Determination of moisture content	35
3.3. MOISTURE SORPTION STUDY	35
3.3.1. Method	35
3.3.2. Preparation of samples for sorption study	37
3.3.3. Instrument preparation	37
3.3.4. Determination of moisture sorption	37
3.3.5. Determination of Burnr-Emmel-Trailer (BET) value	38
3.4. SENSORY EVALUATION	39
3.4.3. Questionnaire to evaluate the sensory characteristics or dehydrated mango samples and mango juice	40
CHAPTER 4. RESULT AND DISCUSSION	42
4.1. OSMOTIC DEHYDRATION	42
4.1.1 Effect of different osmotic solution on percentage of weight reduction in mango cubes	42
4.2 NUTRITIONAL ANALYSIS	47
4.2.1 Effect of different osmotic solution on moisture content in mango	47
4.2.2 Vitamin C content of mango	48
4.2.3 Acidity of mango	49
4.3 MOISTURE SORPTION	51
4.3.1 Sorption data of mango cubes	51
4.3.2 BET Monolayer values	53

4.3.2.1. BET Monolayer value of dried mango cubes at 5 ⁰ C, 30 ⁰ C and 40 ⁰ Customers	53
4.4 SENSORY EVALUATION	55
4.4.1 Evaluation of sensory characteristics of osmo-dehydrated mango products	55
4.4.2 Osmotically dehydrated mango cubes	56
4.4.2.1 Appearance	56
4.4.2.2. Colour	56
4.4.2.3 Flavour	57
4.4.2.4 Overall acceptability	57
4.4.3 Mango juice	57
4.4.3.1 Colour	57
4.4.3.2 Taste	57
4.4.3.3. Flavour	58
4.4.3.4 Overall acceptability	58
CHAPTER 5 CONCLUSION	59
BIBLIOGRAPHY	60
APPENDIX	53