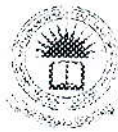


**STUDIES ON THE NUTRITIONAL AND SENSORY
QUALITY OF BISCUIT SUPPLEMENTED WITH
BROWN RICE AND WHITE RICE FLOUR OF
SELECTED RICE VARIETIES**



BY

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2019

ABSTRACT

Rice is the staple food of Sri Lankans and half of the global population. Sri Lanka is self-sufficient in rice; but there is a major fluctuation of the rice utilization pattern. So it is important if rice can be diversified into other areas. One of the major way is developing of rice biscuits. This study was conducted to analysis the nutritional and sensory qualities of biscuit supplemented with brown and white rice flour of selected rice varieties. This experiment was conducted in the Grain Quality Division, Rice Research and Development Institute, Bathalagoda, Sri Lanka during January to May of 2019.

Rice brain has better nutritional value, therefore, rice biscuits were prepared with five varieties of rice with 1:2 proportion of brown rice and white rice flour. Analysis were conducted with five rice varieties of T₁- Suwandel, T₂- At 309, T₃- Bg 94/1, T₄- At 311 and T₅- MA2. Each variety were tested for their physical and physiochemical characteristics. Each treatments were subjected to organoleptic analysis and more preferred three varieties of biscuits were selected for nutritional and microbial analysis and storage studies. Results of the nutritional and organoleptic qualities were analyzed statistically by ANOVA using SAS statistical analysis package to evaluate the significance at $P < 0.05$.

According to physical quality analysis Suwandel variety has higher percentage of brown rice (80.09%). At 311 variety has higher percentage of head grain (74.73%). By physiochemical analysis of grains, At 311 and Bg 94/1 varieties have high gelatinization temperature. In sensory evaluation rice biscuit with Suwandel variety get most preference on texture (5.38), flavour (5.11), taste (5.45), colour (5.62) and overall

acceptance (5.52) like attributes than other varieties. The results of the proximate analysis revealed that the T₃ treatment with Bg 94/1 variety was richer in fat content (12.28%) and T₁ treatment with Suwandel rice variety was richer in fiber (1.83%), moisture (2.82%) and ash (1.40%) content. T₂ treatment with At 309 variety contained highest amount of protein content (6.28%). Products were not affected by any microbial activities. Process such as roasting and baking at high temperature destroy large number of microorganisms.

Based on all the analysis, biscuit prepared from three varieties such as Suwandel, At 309 and Bg 94/1 were given overall nutritional quality and acceptability out of five varieties.

TABLE OF CONTENTS

ABSTRACT	I
ACKNOWLEDGEMENT.....	III
TABLE OF CONTENTS	IV
LIST OF TABLES.....	X
LIST OF FIGURES.....	XI
LIST OF PLATES.....	XII
ABBREVIATION.....	XIII
CHAPTER 01	1
INTRODUCTION.....	1
CHAPTER 02	5
LITERATURE REVIEW	5
2.1 Biscuits	5
2.2 Ingredients used for Making Biscuits.....	8
2.2.1 Rice Flour.....	8
2.2.2 Fat.....	8
2.2.3 Sun-flower oil.....	9
2.2.4 Sugar.....	9
2.2.5 Baking Powder.....	9
2.2.6 Corn flour.....	10
2.3 Biscuit Production.....	10
2.4 Technique for Making Cookies.....	12

2.4.1 Mixing Process	12
2.4.2 Molding Process	12
2.4.3 Baking Process	12
2.5 Overview of rice.....	13
2.5.1 Importance of Rice	14
2.5.2 Taxonomy	15
2.5.3 Origin and Distribution	16
2.5.4 Characteristics of Rice	16
2.5.4.1 Physical Characteristics.....	16
2.5.4.2 Chemical Characteristics of Rice	20
2.6 Packaging and Shelf life of Products.....	23
2.6.1 Types of Packaging Materials	24
2.6.1.1 Polyethylene	24
2.6.1.2 Polyvinyl Chloride	24
2.6.1.3 Paper and Paper-based Materials	24
2.6.1.4 Aluminum Foil.....	25
2.6.1.5 Glass.....	25
2.7 Sensory Evaluation.....	25
2.8 Panel Management	26
2.9 Hedonic Rating Test.....	26
2.10 Benefits of Sensory Evaluation	26
2.11 Problems of Sensory Evaluation	27
2.12 Rules of Sensory Evaluation	27

2.13 Qualities Assessed by Sensory Tests	28
2.13.1 Colour	28
2.13.2 Aroma	28
2.13.3 Taste.....	28
2.13.4 Texture	28
2.13.5 Overall Acceptability	29
CHAPTER 03	30
MATERIALS AND METHODS	30
3.1 Methodology	30
3.1.1 Physical Characteristics of Selected Rice Varieties.....	30
3.1.1.1 Milling Characteristics	30
3.1.1.2 Milled Grain Length and Length to Width Ratio	32
3.1.2 Chemical Characteristic of Rice Grain	32
3.1.2.1 Determination of Gelatinization Temperature	32
3.2 Preparation of rice flour	33
3.3 Development of Rice Biscuit	34
3.3.1 Treatments.....	36
3.4 Physical Properties Analysis of Biscuit Prepared from selected rice varieties	37
3.4.1 Diameter.....	37
3.4.2 Thickness	37
3.4.3 Volume.....	37
3.4.4 Density	37
3.4.5 Spread Ratio	37

3.5 Organoleptic Analysis	38
3.5.1 Materials used for Organoleptic Analysis	39
3.5.2 Serving the Samples for Organoleptic Analysis	39
3.6 Nutritional Analysis.....	40
3.6.1 Determination of Crude Fat.....	40
3.6.1.1 Materials	40
3.6.1.2 Procedure.....	40
3.6.1.3 Calculation.....	40
3.6.2 Determination of Crude Fiber	41
3.6.2.1 Materials.....	41
3.6.2.2 Procedure.....	41
3.6.2.3 Calculation.....	42
3.6.3 Determination of Crude Protein	42
3.6.3.1 Materials	42
3.6.3.2 Procedure.....	42
3.6.3.3 Calculation.....	43
3.6.4 Determination of Moisture Content.....	44
3.6.4.1 Materials	44
3.6.4.2 Procedure.....	44
3.6.4.3 Calculation.....	44
3.6.5 Determination of Ash Content.....	45
3.6.5.1 Materials	45
3.6.5.2 Procedure.....	45

3.6.5.3 Calculation.....	45
3.7 Microbiological Analysis.....	45
3.7.1 Materials.....	45
3.7.2 Procedure	46
3.7.3 Total Plate Count.....	46
3.8 Storage Studies.....	46
3.9 Shelf Life Evaluation.....	47
3.10 Statistical Analysis	47
CHAPTER 04	48
RESULTS AND DISCUSSION	48
4.1 Physical Characteristics of Selected Rice Varieties	48
4.1.1 Milling Characteristics.....	48
4.2 Chemical Characteristic of Rice Grain	50
4.2.1 Gelatinization Temperature of Selected Rice Varieties	50
4.3 Physical Properties Analysis of Freshly Made Rice Biscuits.....	51
4.4 Organoleptic Qualities Analysis of Freshly Made Rice Biscuits	52
4.4.1 Sensory Evaluation on Texture of Freshly Made Rice Biscuits	52
4.4.2 Sensory Evaluation on Flavour of Freshly Made Rice Biscuits	52
4.4.3 Sensory Evaluation on Taste of Freshly Made Rice Biscuits	53
4.4.4 Sensory Evaluation on colour of Freshly Made Rice Biscuits	53
4.4.5 Sensory Evaluation on Overall Acceptability of Freshly Made Rice Biscuits ...	53
4.5 Nutritional Analysis of Freshly Made Rice Biscuits	55
4.5.1 Fat Content of Freshly Made rice biscuits.....	55

4.5.2 Fiber Content of Freshly Made Rice Biscuits	55
4.5.3 Protein Content of Freshly Made Rice Biscuits	58
4.5.4 Moisture Content of Freshly Made Rice Biscuits.....	58
4.5.5 Ash Content of Freshly Made Rice Biscuits	58
4.6 Microbial Analysis of Freshly Made Rice Biscuits	58
4.7 Changes in Nutritional Qualities of Biscuits during Storage at Ambient Temperature	59
4.7.1 Fat Content of Rice Biscuits during Storage Period	59
4.7.2 Fiber Content of Rice Biscuits during Storage Period	60
4.7.3 Protein Content of Rice Biscuits during Storage Period	61
4.7.4 Moisture Content of Rice Biscuits during Storage Period	62
4.7.5 Ash content of Rice Biscuits during Storage Period	63
4.8 Organoleptic Analysis of Rice Biscuits during Storage period	64
4.9 Microbial Analysis of Rice Biscuits during Storage	65
CHAPTER 05	66
CONCLUSIONS	66
SUGGESTIONS FOR FUTURE RESEARCH	67
REFERENCES	68
APPENDICES	I