Development of fruit bar made from Wood Apple (*Limonia acidissima*) & Muskmelon (*Cucumis melo*)using different sweeteners and determination of its quality parameter.

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A thesis submitted in the partial fulfillment of the requirements for the degree of Masters of Science in Applied Human Nutrition & Dietetics

Department of Applied Food Science and Nutrition

Faculty of Food Science and Technology

Chattogram Veterinary and Animal Sciences

UniversityChattogram- 4225, Bangladesh

July 2023

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Sadia Islam

July 2023

Development of fruit bar made from Wood Apple (*Limonia acidissima*) & Muskmelon (*Cucumis melo*) using different sweeteners and determination of its quality parameter.

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PLAGIARISM VERIFICATION

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DEDICATED TO MY BELOVED FAMILY & TEACHERS

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The Author

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Table of Contents

List of Table

List of Figures

List of Abbreviation

&	**: And**
AOAC	**: Association of Analytical Chemists**
DPPH	**: 2, 2-diphenyl-1-picrylhydrazyl**
EDTA	**: Ethyl di amine tetra acetic acid**
CMC	**: Carboxymethyl cellulose**
APM	**: Aspartame**
GAE	**: Gallic Acid Equivalent**
SDA	**: Saboraud dextrose agar**
QE	**: Quercetin equivaletns**
ANOVA	**: Analysis of variance**
°B	**: Degree brix**
°C	**: Degree celcius**
TSS	**: Total soluble solids**
CHO	**: Carbohydrate**
etc	**: Et cetera**
et al	**: Et alii / et alia**
G	**: Gram**
Cfu	**: Colony forming unit**
PPM	**: Parts per million**
Mg	**: Milligram**
Kg	**: Kilogram**

Abstract

Wood apple (*Limonnia acidissima* and muskmelon (*Cucumis melo*) both are highly nutritious fruits with lots of medicinal properties which are seasonally produced in our country. Due to blend taste and higher moisture content of muskmelon every year lots of fruits are wasted. In our country very little study has been conducted on the processing of muskmelon, wood-apple and products made from muskmelon and Wood-apple are hardly available in our market place. That's why current research is done to make a highly nutritious fruits bar to utilize this two common fruits of Bangladesh by using different sweetener . Fruit bar is the product prepared by blending fruit purees or pulp extracted from ripe pulpy fruit, sugar or other nutritive sweeteners and other ingredients and additives desired for product and dehydrated to form sheet which can be cut to desired shape and size. In this study among the different sweeteners made fruit bar sample A, B, C, D, E,F – sample C which was made with wood-apple and muskmelon using dates recorded maximum sensory score and overall acceptability (5.50±0.01).In sample C it was recorded that TSS level (78.89±0.01) °Brix, pH level (3.00±0.02), carbohydrates (71.8±0.01),crude fiber (2.80±0.01), ash (1.30±0.01), protein (2.08±0.01), vitamin (4.54±0.03), Calcium (1.64±0.01) , Magnesium (0.23±0.01), Potassium (2.27±0.01), Iron (27.40±0.01) and energy content (312 .37±0.01).The overall viable count in the microbiological study was determined to be within allowable limits, and no fungal influence was seen. Making fruit bar from wood-apple and muskmelon can minimize the wastage of muskmelon and ensure the proper utilization of wood-apple and muskmelon while also improving health and being enjoyed by all socioeconomic groups.

Key words: Fruit bar, sensory score, Brix, crude fiber, organoleptic taste, microbial analysis, total viable count, fungal effect.