PRODUCING HEALTH BOOSTING & NUTRITIOUS TEA USING MORINGA (*Moringa oleifera)* LEAVES

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Roll no: 0219/13

Registration no: 774

Session: 2019 (July- December)

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

Department of Applied Food Science and Nutrition

Faculty of Food Science and Technology

Chattogram Veterinary and Animal Sciences University

Chattogram-4225, Bangladesh

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Farhana Yasmin Baby

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DEDICATE TO MY BELOVED AND RESPECTED PARENTS AND TEACHERS

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PLAGIARISM VERIFICATION

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Abbreviations

%	Percentage
&	And
ANOVA	Analysis of variance
℃	Degree Celsius
dl	Deciliter
DC	Diabetic control
DPPH	2,2-diphenyl-1-picrylhydrazyl
et al	Et alii/ et aliae/ et alia
etc	Et cetera
g	Gram
Kg	Kilogram
mg	Milligram
NS	Not significant
PPM	Parts per million
SPSS	Statistical Package for Social Science
SEM	Standard Error of Mean
T1DM	Type 1 diabetes mellitus
T2DM	Type 2 diabetes mellitus
UV	Ultraviolet
GAE	Gallic Acid Equivalent
FDA **FAO**	Food and Drug Administration Food and Agriculture Organization
CAC	CAC Codex Alimentarius Commission
TPC	Total Phenolic Content
TFC	Total Flavonoid Content
CP	Control point
AOAC	Association of Official Agricultural Chemists.

Abstract

The main purpose of this research is to produce a health boasting and nutritious tea using *Moringa oleifera* leaves, flavouring with ginger. Moringa is called “the miracle tea”. This tree’s root, buts, leaves each part contain variety of vitamins and minerals. The focus of this work is to identify how moringa leaves could combined with green tea and provide more nutritious tea and to find the optimal ratio of moringa leaves to green tea that would result in a more nutritious and antioxidant-rich brew. The primary goal of this study is to create a vitamin and mineral-fortified tea and to examine the effects on the tea's nutritional profile and sensory qualities. Moringa leaves were dried and then ground into a powder to make the moringa tea. There are three samples in different concentrations of moringa leaf powder used. Type A (8% moringa leaves powder), Type B (15% moringa leaves powder) and Type C (commercial tea). The results of the study were statistically analyzed to determine the extent to which the effects of variation in the number of observations made in tea preparation might be considered significant. Proximate analysis, bioactive substances, antioxidant capacity, vitamins (C and B2), minerals (Fe, Ca, Mg, and K), sensory evaluation, and microbiological analysis were all performed on the samples. When comparing two different preparations, Type B (15% moringa leaves) came out on top. Type B, which consists of 15% moringa leaves, comprises high percentages of moisture, crude fiber, fat, ash, and crude protein than type A. it also contains good amount of antioxidant, caffeine, and phenolic substance, Vitamin B2 and vitamin C. Fe, Ca, K, Mg perchantage of type B is also higher than Type a and type C. The combination of moringa leaves powder and green tea at a 15% concentration was the most popular. It scored top in all categories, including aroma, flavor, color, texture and overall acceptance. The addition of moringa leaves, at a rate of 15%, to green tea creates a healthy value-added product that has the potential to increase food security in Bangladesh. Finally, the final product was judged to be more socially acceptable due to improvements in its nutritional and organoleptic qualities.

Keywords: moringa leaves powder, flavonoids compound, polyphenolic compound, Antioxidant capacity, health boosting and nutritious tea.