



A STUDY ON FORMULATION AND STANDARDIZATION OF MORINGA WAFER

¹P. Ilakkiyaraja, ²Dr. K. U. Pavitra Krishna

¹UG Student, ²Head of the Department

Department of Food Science and Processing Management

Subbalakshmi Lakshmipathy College Of Science, Madurai, India

ABSTRACT

Moringa oleifera, commonly referred to as the drumstick tree or horseradish tree, It is a versatile plant which is native to the Indian subcontinent and parts of Africa. Its leaves, in particular, have garnered significant attention due to their rich nutrient content and health benefits. Moringa Leaf is a good source for maintaining healthy diet snack prepared by incorporating moringa leaf in 3 variants. It was estimated by a panel of judges using score card with five point hedonic scale. Shelf life analysis has experienced to examine the shelf life of a product and how they change with environmental conditions. The cost of moringa leaf wafers were anatomized by taking into account. The fixed and variable cost include during the course of processing. In conclusion, Moringa oleifera leaves wafers represent a valuable supplement with potential health-promoting properties. Incorporating Moringa leaf consumption into daily dietary habits may offer a convenient and sustainable approach to improving overall health and well-being.

Key words: Moringa, wafer, Moringa leaf powder, Wheat flour.

INTRODUCTION:

Generally, salads are widely named as “securing snacks” cruel diet on account of their different well-being benefits capable of being traced to the copiousness in vitamins, essential greasy acids, mineral, amino acids and digestive texture and differing essential bioactive compounds. These contain fitness-advancing plant subordinate metabolites collected of antioxidants and phenolic compounds. It is well approved that to meet urged often concession of food, the World Health Organization (WHO) advice not completely 400g of product and non-formal produce (WHO, 2013) is secondhand. The digestive directions for Americans advise five portions of salads per era established a consumption of 2000 calories (HHS/USDA, 2015). It is still urged the one of the five portions of herbs bear be green leafy herbs.

Nutritionists and dieticians are of the belief that nation concede possibility transform their diets as no distinct produce meets all the pertaining to food necessities inevitable for best condition and well-being. Hence in today's agri-fare arrangements, more stress is likely to crop variety accompanying the goal of effectuating human digestive necessities, and to weaken the pressure on bran result. Globally, crop variety and digestive worth of legume crops are of distinctive importance for reconstructing foodstuff

and food freedom. Plants are bigger beginnings of abundant bioactive compounds together described as phytochemicals, that are stated expected key to best condition.

Green leafy vegetables give crucial supplements required for human wellbeing and prosperity. These incorporate amino acids, vitamins, basic greasy acids, minerals and dietary fiber. It too has critical financial benefits. For occasion, agriculturists within the tropics and subtropics, for the most part ladies, develop and gather green leafy vegetables to supplement family salary. In provincial zones, green leafy vegetables play critical part as wholesome source, and it is accessible all-year. Green leafy vegetables are ordinarily considered as the cheapest source of nourishment for vitamins and micronutrients supplementation to combat nutrients deficiencies.

It is additionally utilized as home grown and restorative plants in different social and conventional settings for numerous diverse sicknesses. The nearness of against dietary variables such as nitrates, oxalates, phytates, cyanogenic glycosides and tannins in green verdant vegetables can influence micronutrients retention and, in this way, make the last mentioned inaccessible. Warm preparing of leafy vegetables through bubbling, cooking and whitening some time recently utilization offer assistance in decreasing the level of hostile to supplements.

II. MATERIALS AND METHODS

This chapter bargains with materials and strategies in received for considering Advancement of moringa takes off powder consolidated wafers. The study was conducted in the department of food science and Processing Management at Subbalakshmi Lakshmi pathy college of science Madurai.

MATERIALS:

PROCUREMENT OF RAW MATERIAL:

The crude materials such as moringa takes off powder, wheat flour, powdered sugar, drain, heating pop, salt from departmental stores Madurai.

CHEMICALS:

The chemicals as reagents utilized for the think about were Research facility reagent (LR). Expository reagent (AR) or ensure reagent.

UTENSILS:

Measuring mugs, blending bowl, stirrer, tawa ,spoon, plate were utilized for utilized for planning and serving the created items.

ENERGY SOURCE:

Electric current and fluid petroleum gas (LPG) were utilized as warming sources.

METHODS

Preliminary preparation of selected ingredients:

The procured raw materials such as moringa leaves powder, wheat flour, powdered sugar, milk, baking soda, and salt.

The dried ingredients such as moringa leaves powder, wheat flour, salt, powdered sugar should be mixed in a mixing bowl except the sesame seeds. Make it into a soft dough.

Formulation of Moringa leaves powder incorporated wafers:

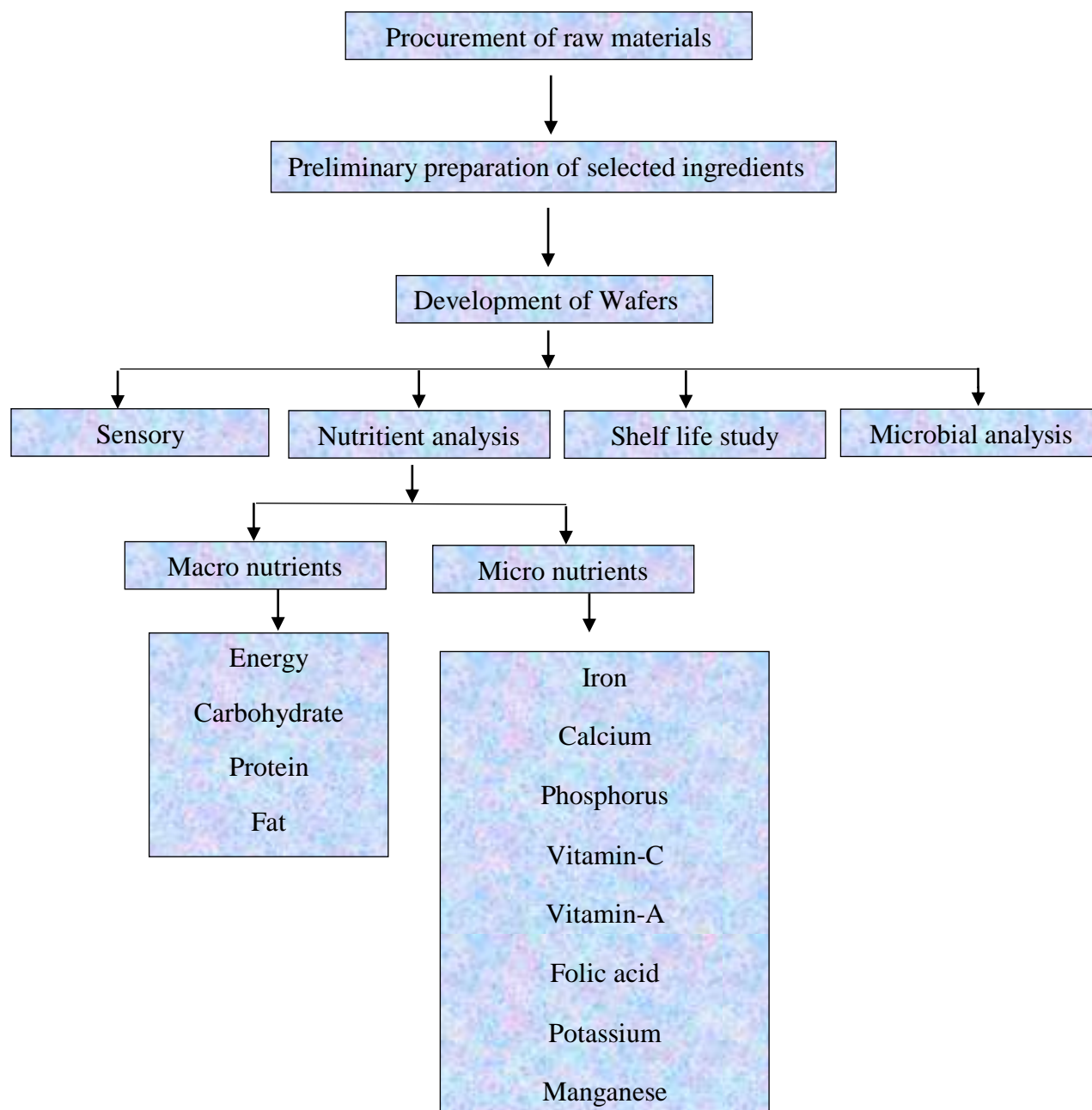
Moringa leaves have high nutritive value and enormous health benefits. Moringa leaves is incorporated in many products due to its nutritional value. Moringa leaves were incorporated at the level of 37%, 26%, and 15% in the formulated wafers products respectively

Development of Moringa leaves powder incorporated wafers

Table 1 The proportion of ingredients used to prepare and its variations

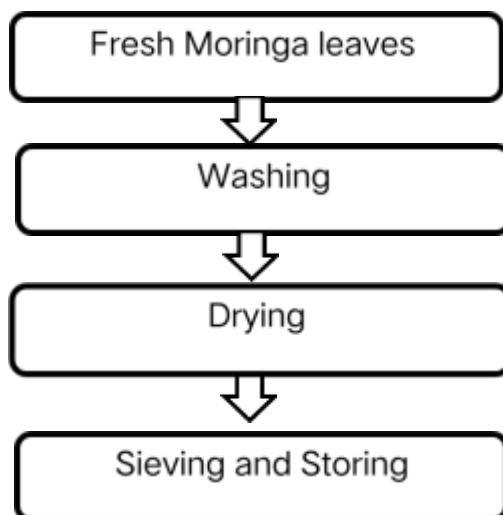
S.NO	INGREDIENTS	QUANTITY		
		Control	MLW1	MLW2
1.	Maida flour	75g	25g	25g
2.	Powdered sugar	30g	25g	25g
3.	Moringa leaves powder	-	75g	50g
4.	Milk	25ml	25ml	25ml

- MLW 1 (Sample A) - 75% Moringa leaves powder incorporated wafers
- MLW 2 (Sample B) - 50% Moringa leaves powder incorporated wafers

Figure 1 Flow chart for the Moringa leaves wafers

Procedure:

Take all the ingredients. Take a bowl. Put the wheat flour in the bowl. Add powdered sugar with the wheat flour. Mix it thoroughly. Add moringa leaves powder and mix it well. Add salt as per the taste. Mix the all the ingredients. Add milk gradually and mix the flour into a dosa batter stage. Leave it for 5-10 min. take a spoon level batter and pour it in the tawa and make it into a smooth little circle using brush. Toast both sides. Take it gently and start to roll the piece into roll using cylinder shaped straw into a wafer roll. Seal it in the box. After the few hours it will look crisp. Fill it with chocolate cream.

Figure 2 Preparation of Moringa leaves powder**III RESULTS AND DISSCOUSION****ORGANOLEPTIC OR SENSORY EVALUATION**

The institute of Food Technologies (IFT) defines sensory evaluation a. “The scientific discipline used to evoke measure, analyze, and interpret those reactions to characteristics of food and raw materials as perceived through the senses of light, smell, taste, touch and hearing.

When the quality of a food product is assessed by means of human sensory organs, the evaluation is said to be sensory or subjected or organoleptic evaluation. Sensory quality is a combination of different sense of perception coming in choosing and eating a food. Appearance, flavor and mouth feel decides the Acceptance of the food. (Sreeja et al., 2009).

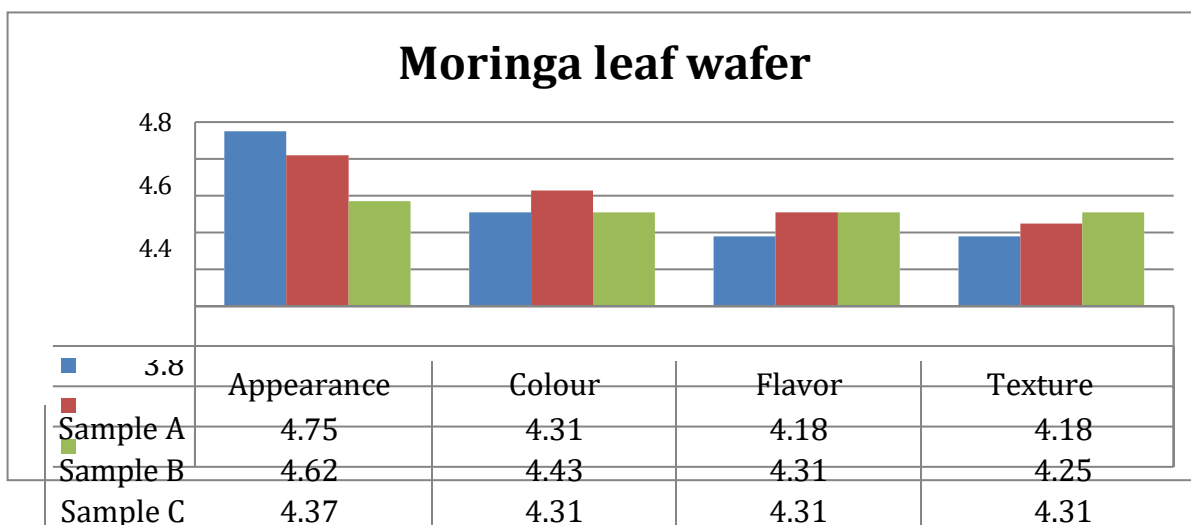
The developed food product along with its variation was evaluated by the panel of judges, by using 5 points hedonic Scale rating.

Table 2 Mean score obtained for the overall acceptability of Moringa leaf wafer

Characteristics	Sample A	Sample B	Sample C
Appearance	4.75	4.62	4.37
Colour	4.31	4.43	4.31
Flavour	4.18	4.31	4.31
Texture	4.18	4.25	4.31
Taste	4.37	4.5	4.12
Total	3.48	4.42	4.28

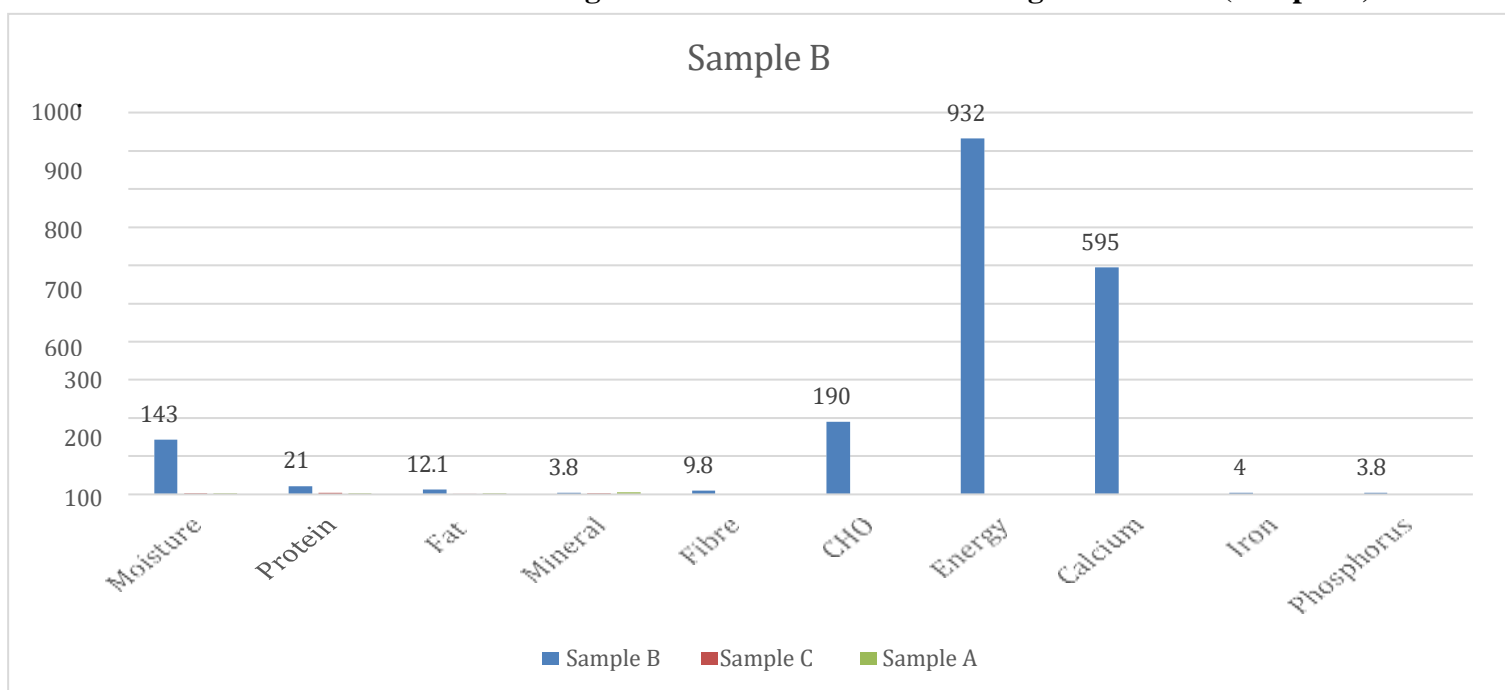
Sensory Evaluation was conducted between 16 members with trained, semi-trained, and untrained panel members. Among that Sample C which is the control scored a high rating of 4.31 in texture. Sample A scored a high rate of 4.75 in appearance. Sample B scored a high rate 4.43 in colour, 4.31 in flavor and 4.42 in taste. Overall acceptability was scored by the sample B of ratings 4.42

Figure 3 Sensory Attributes of Moringa Leaf Wafer (sample B)



IV Nutrient analysis of the standardized wafers

Figure 4 Nutritive value for Moringa leaf Wafer (Sample B)



The moisture present in wafers is 143.3. The protein present in wafers is 21. The fat present in wafers is 12.1. The minerals present in wafers are 3.8. The fiber present in wafers is 9.8. The CHO present in wafers is 190. The energy present in wafers is 932. The calcium present in wafers is 595. The iron present in wafers is 4. The phosphorous present in wafers is 3.8. The niacin present in wafers is 3.3. The carotene present in wafers is 6858. The thiamine present in wafers is 0.23. The riboflavin present in wafers is 0.19. The vitamin C present in wafers is 54. The choline present in wafers is 0.

CONCLUSION

The Formulation and Developed Moringa wafer is more nutritious snack for the children this study consider, the moringa wafer was organized in three different extent to assess the generally adequacy of the moringa wafer. Five-point hedonic scale rating is rating is utilized for the assessment reason. supplement substance of the standardized item were assessed.

Bibliography

1. Moringa leaf powder Beth Doerr, Lindsay Cameron ECHO Technical Note. USA, 2005
2. Processing of Moringa leaves as natural source of nutrients by optimization of drying and grinding mechanism, MA Ali, YA Yusof, Nyuk Ling Chin, MN Ibrahim, Journal of Food Process Engineering 40 (6), e12583, 2017
3. Impact of Moringa oleifera leaf powder supplementation on a few quality characteristics of wheat bread, Abraham I Sengev, Joseph O Abu, Dick I Gernah, Nourishment and nourishment sciences 4 (3), 270, 2013
4. Effect of microwave vacuum drying on nutritional composition of moringa (Moringa oleifera) leaves, JP Yashaswini, N Venkatachalapathy, Kulbhushan Sharma, R Jaganmohan, Akash Pare, International Journal of Chemical Studies 9 (1), 2790-2795, 2021
5. Impact of drying procedures on the proximate and other supplement composition of Moringa oleifera takes off from two zones in Eastern Nigeria, BO Mbah, PE Eme, AE Paul, Pakistan Diary of Sustenance 11 (11), 1044, 2012
6. https://scholar.google.com/scholar?hl=en&as_sdt=0,5&qsp=2&q=moringa+leaves+powder&qst=ib#d=gs_qabs&t=1689435236405&u=%23p%3DtlmqdEggyUJ
7. https://scholar.google.com/scholar?hl=en&as_sdt=0,5&qsp=2&q=moringa+leaves+powder&qst=ib#d=gs_qabs&t=1689435036059&u=%23p%3D4DhaOD4clMsJ