MAIN ORGANISER:

OFFICIAL COLLABORATORS:

THE INTERNATIONAL COMPETITION ON SUSTAINABLE EDUCATION

20TH AUGUST 2025

TRANSFORMING EDUCATION, DRIVING INNOVATION AND ADVANCING LIFELONG LEARNING FOR EMPOWERED WORLD

SUSED2025
THE FOURTH INTERNATIONAL COMPETITION ON SUSTAINABLE EDUCATION 2025
TRANSFORMING EDUCATION, DRIVING INNOVATION AND ADVANCING LIFELONG LEARNING FOR EMPOWERED WORLD
e-PROCEEDING
20TH AUGUST 2025
ACADEMY OF LANGUAGE STUDIES
UNIVERSITI TEKNOLOGI MARA
NEGERI SEMBILAN BRANCH
KUALA PILAH CAMPUS
MALAYSIA

MORI NORI

(*Moringa oleifera* INNOVATION INTO HEALTHY NORI SNACKS)

Dimas Fahrezi, Gita Tresno Asih Raharjo, Olga Octaviani Eka Sari[1*], Paujia Hanum[1] & Syarif Hidayatullah

Jln. Karya wisata Gedung Johor Medan – 20144 Telp. (+62) 081361602976. Fakultas Pertanian Universitaas Islam Sumatera Utara*

olgaoktaviani2018@gmail.com*

ABSTRACT

Moringa leaves (Moringa oleifera) are known to the public as wild plants that were once less than optimally utilized, despite having very high nutritional content. Along with the development of public awareness about the importance of functional and healthy food, the benefits of moringa began to receive attention. Mori Nori products were introduced as a healthy food innovation based on moringa leaves produced without preservatives and MSG and processed through burning/roasting to preserve their original flavour and nutritional content. Then, it is processed into nori chips as an alternative to the conventional nori based on seaweed. By combining the distinctive flavour of moringa and the practical form of nori, Mori Nori aims to introduce moringa in a more modern, attractive, nutritious, natural, and edible form to the public, especially to the younger generation. The methods used include formulation of ingredient mixtures, drying and baking techniques, and organoleptic testing of taste, aroma, and texture. The results obtained show that Mori Nori has good organoleptic quality and nutritional content that is permanently preserved. This innovation is expected to be a major and successful contribution in the diversification of local foods as well as the development of high economic value products that will become healthy food solutions based on Indonesia's natural wealth.

Keywords: *Moringa, Food Innovation, Healthy Product*

INTRODUCTION

Indonesia is a country with a tropical climate. Various types of plants that grow have the potential to provide benefits for human life, one of which is moringa. People usually use moringa leaves as a complement in daily cooking, not a few make moringa plants only as ornamental plants that grow on house terraces, even in some regions in Indonesia, the use of moringa leaves is more for bathing the corpses, to shed amulets, and as animal feed (Marhaeni, 2021). Moringa leaves have a hight content of antioxidant, vitamin A, and vitamin C (Hastuty et al., 2022). Moringa leaves are also considered to have the potential to overcome malnutrition, hunger, and prevent various diseases in the world (Angelina et al., 2021). Therefore, efforts need to diversify food products to increase the added value of moringa leaves, extend the shelf life of moringa leaf products and to attract enthusiasts from various ages, including being processed into nori (Bulotio et al., 2019).

METHODS

Processing begins with the preparation of raw materials, namely fresh moringa leaves washed and sorted to choose the leaves with the best quality. Then, to produce an ideal mixture between moringa leaves and other additional ingredients, experiments with various compositions are carried out to produce the desired taste and texture. After that, the moringa leaves that have been formulated are processed through drying at high temperatures. The result is then formed into nori chips that are uniform in thickness and size.

Mori Nori products were organoleptically tested for taste, aroma, and texture. Testing was conducted by 20 trained panelists using a hedonic scale to assess product acceptability. The organoleptic test data were analyzed descriptively to determine product characteristics and consumer acceptance.

RESULTS AND DISCUSSION

The research results show that Mori Nori products are successfully developed with physical characteristics such as chips that resemble conventional nori, uniform thickness, and natural green color from moringa leaves. Made without artificial preservatives and MSG, this product is safe to consume and in accordance with healthy food trends. Organoleptic testing showed positive results for all three components. Mori Nori has a unique flavor and can be accepted by the panelists, with a moringa flavor that is felt but not too dominant. The characteristics of moringa that have been roasted with an attractive and non-stinging aroma are indicated in the aroma of the product. This product has a crispy texture and is easy to eat, similar to regular nori but has the characteristic of moringa leaves.

According to the analysis, the processing process of moringa leaves maintains its nutritional content well. Mori Nori products maintain the protein content, vitamins, and important minerals of moringa leaves. The development of Mori Nori products also shows great economic potential as a local food diversification product that can increase the added value of moringa leaves and provide people with healthy food choices.

Table 1.: Nutritional content of fresh and dried moringa leaves

Nutritional Components	Fresh Leaves	Dried Leaves
Water content (%)	94.01	4.09
Protein (%)	22.7	28.44
Fat (%)	4.65	2.74
Ash content	-	7.95
Carbohydratet (%)	51.66	57.01
Fibert (%)	7.92	12.63
Calcium (%)	350-550	1600-22--
Energy (Kcal/100g)	-	307.30

Source: Melo *et al* (2013); Shirik*i et a*l (2015)

CONCLUSION

This study successfully developed the product "Mori Nori", which is a moringa-based healthy food innovation processed into nori chips. Taste, aroma, and texture test results showed good organoleptic quality. The roasting method can maintain the nutritional content of moringa leaves. This product is made without preservatives and MSG, making it safe for consumption. Nori can be a solution to introduce a more modern, practical, and attractive moringa to the public, especially the younger generation. This innovation has great potential to encourage local food diversification and the development of high economic value products derived from Indonesia's natural wealth.

Mori Nori can be a great way to introduce moringa to people, especially the younger generation, in a more practical, attractive and modern form. This innovation has great potential to encourage local food diversification and the development of high-value products based on Indonesia's natural resources. The Mori Nori product is expected to be the first step in optimally utilizing moringa leaves as a functional food, while helping food security and the health of the Indonesian people.

Table 2.: Results of organoleptic test of nori

Shape	**Aroma**	**Taste**	**Color**
Square, brittle	Moderate distinctive moringa leaf odor	Savory, weak distinctive moringa leaf flavor	Blackish green

ACKNOWLEDGEMENTS

This activity is supported by research funds provided by the Faculty of Agriculture, Islamic University of North Sumatra. We also thank the supervising lecturers who have helped us in this research process. As well as, the panellists who are part of the implementation of the organolpetic

method that we do. And friends who always provide support. Hopefully, this research can be useful for many people.

REFERENCES

Angelina, C., Swasti, Y. R., & Pranata, F. S. (2021). Peningkatan nilai gizi produk pangan dengan penambahan bubuk daun kelor (*Moringa oleifera*): Review. *Jurnal Agroteknologi*, *15*(01), 79.

Hastuty, Y. D., & Nitia, S. (2022). Ekstrak daun kelor dan efeknya pada kadar hemoglobin remaja putri. *JPP (Jurnal Kesehatan Poltekkes Palembang)*, *17*(1 Juni), 121-127.

Marhaeni, L. S. (2021). Daun kelor (*Moringa oleifera*) sebagai sumber panganfungsional dan antioksidan. *Jurnal Agrisia*, *13*(2), 40–53.

Melo, N. V., Vargas, T. Quirino and C. M. C. Calvo. (2013). (*Moringa oleifera L)*. Anunderutilized tree with macronutrients for human health Emir. J. Food Agric, 25 (10): 785-789.

Pade, S. W., & Bulotio, N. F. (2019). Nutrifikasi daun kelor (*Moringa oleifera*) dengan varietas umur daun berbeda terhadap karakteristik mutu nori rumput laut (*Gracilaria* spp). *Journal of Agritech Science*, *3*(1), 34–42.

Shiriki, D., Igyor, M.A. and Gernah, D.I. (2015). Nutritional evaluation of complementary food formulations from maize, soybean and peanut fortifoed wit.

ATTACHMENT

The Image Above Is An Example Of Mori Nori Products Used In Making Sushi.