

Development of a Healthy Noodles Enriched with the Flavors of Coleus Aromaticus, Mentha, Erythrina Indica

Suruthi B., Amutha A.

Department of Food Technology
JCT College of Engineering and Technology
Coimbatore, India

suruthibalraj2000@gmail.com, ranjiamu2000@gmail.com

Abstract- Noodles have been the staple foods for Asian countries since ancient time. They can be made from wheat, rice and other raw materials such as buckwheat and starches derived from potato, sweet potato and pulses. Normally, wheat noodles is enriched with protein, carbohydrates and fibre content. This study was conducted to add additional nutrients content to the wheat noodles by incorporating the powders of Coleus amboinicus (Omavalli leaves), Mentha (mint leaves) and Erythrina Indica (Kalyana murungai leaves). Omavalli leaves is used in curing cough, cold, stomach problems, indigestion etc. Mint leaves is used for easing queasy stomach, calming stress and anxiety etc. Kalyana murungai leaves is useful for treating cough, cold and is very good for women as it treats many ailments that women regularly face. People use to crush these leaves and eat in the normal mouth or boiled these leaves in the water and from cold, cough or fever. But not everyone like to have this. As we know, noodles is a food, with zero haters. So we have incorporated these flavours in noodles. This noodles is prepared with the composition of 55% wheat flour, 15% omavalli powder, 15% mint powder and 15% kalyana murugai powder.

Keywords- Noodles, Wheat flour, Powders of Omavalli, Kalyana Murungai and Mint.

I. INTRODUCTION

Noodles are a type of food made from unleavened dough which is rolled flat and flat and cut, stretched or extruded, into long strips or strings. Noodles can be refrigerated for short-term storage or dried and stored for future use. Coleus amboinicus, is a semi-succulent perennial plant in the family Lamiaceae with a pungent oregano-like flavor and odor. The origin of Coleus amboinicus is unknown, but it may be native to Africa and possibly India. It is widely cultivated and naturalized elsewhere in the tropics where it is used as a spice and ornamental plant[1]. Mentha is a genus of plants in the family Lamiaceae.

The genus has a subcosmopolitan distribution across Europe, Africa, Asia, Australia and North America. All mint thrive near pools of water, lakes, rivers and cool moist spots in partial shades. In general, mints tolerate a wide range of conditions, and can also be grown in full sun. Mint grows all year round[2]. Erythrina variegata also called Erythrina Indica is a thorny deciduous tree. It is commonly known as tigers claw or Indian coral tree, is a species of Erythrina native to the tropical and subtropical regions of eastern Africa, the Indian Subcontinent, northern Australia, and the islands of the Indian Ocean and the western Pacific Ocean east to Fiji. Erythrina variegata is valued as an ornamental tree. It belongs to Fabaceae family (legume family)[3].

II. METHODOLOGY

1. Preparation of Powders

The leaves of Omavalli, Mints, and Kalyana Murungai are freshly collected from the local market. The leaves are then cleaned and dried until all the moisture has been released. Then it is grind to make a fine powder. These powders are also readily available in shops. we can use that too for the preparation of this noodles.



Fig.1. Coleus aromaticus powder.



Fig.2. Mentha powder.



Fig.3. Erythrina Indica powder.

2. Preparation of Noodles

2.1. Required materials

Wheat flour and the prepared Omavalli, Mint and Kalyana murungai leaves are required for the preparation of this noodles.

2.2. Kneading

In noodles manufacturing process, wheat flour and the prepared powders are to be kneaded with the water at a temperature of 20 to 30 C. This process is to be carried out for 15-20 minutes. Thus providing the dough with text form tissue that generates noodles elasticity. This dough is to be rest for 20 nins to mature.

2.3. Forming Noodle Belt

Then the dough goes into two rotating rollers, wherein two noodles belt is bought together as one belt of thickness 10 mm. It helps to distribute the noodles evenly. This dough is also left for sometimes to mature.

2.4. Rolling

With the help of pressing rollers, the 10 mm thick noodles is flattened repeatedly using four rollers and finally becomes thin at 1 mm thickness.

2.5. Slittering

These noodles are then put into the slitter where with the help of rollers blades these noodles are made even thinner and wavy.

2.6. Steaming and Dipping

These noodles are then steamed for 1-5 mins at 100 C to pregelatinize the starch of the noodles. After steaming the noodles are dipped in seasoning.

2.7. Molding

Noodles are cut into 40-70 cm long and are put into a round or square shaped metal mold serving.

2.8. Drying

Noodles in a metal mold are placed into a air drier and dehydrated with hot air of approximately 80 C for more than 30 minutes.

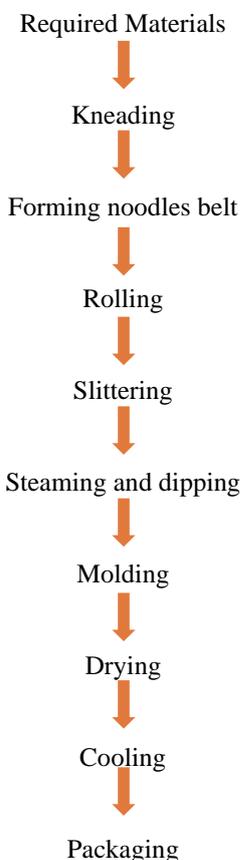
2.9. Cooling

After the drying process, the noodles are cooled with air.

2.10. Packaging

Finished products are then hermetically packed into film bags or into cup-containers together with seasoning and garnish which then are sealed with aluminium foils etc.

3. Flow chart for Noodles processing



4. Health Benefits

4.1. Coleus aromaticus

Beneficial in providing relief from osteoporosis and arthritis, provides relief from irritable bowel syndrome, aids in treating breast prostate cancer, boosts immune system, promotes sweating and helps to reduce fever. These leaves can be used in home remedies for treating cold, cough, throat pain and a few minor skin problems[4].

4.2 Mentha

It is used for treating irritable bowel syndrome. It promotes digestion, it treats nausea and headache, it improves memory, it can prevent cancer, it is also good for skin health, it can help weight loss, it protects against radiation-induced DNA damage[5].

4.3 Erythrina Indica

It is used to treat cold and cough, strengthens bones, is good for women as it treats many ailments that women regularly face, absorbs toxins and it is also a wonderful muscle relaxant. It has wonderful anti-inflammatory properties. It can reduce high cholesterol and it helps to prevent bone loss[6].

Table 1. Nutrients Values of Coleus Ambinicus.

1.	Protein	0.6%
2.	Vitamins	
	Ascorbic acid	0.003%
	Thiamine	0.0008%
3.	Minerals	
	Calcium	0.158%
	Phosphorus	0.016%
	Potassium	0.138%
	Sodium	0.0047%
	Magnesium	0.088%
4.	Trace minerals	
	Iron	0.262%
	Zinc	0.0003%
	Copper	0.00012%
	Chromium	0.000022%
5.	soluble dietary fibre	0.31%
6.	Insoluble dietary fibre	1.56%
7.	Phytic acid	0.00092%
8.	Soluble oxalate	0.02%

Table 2. Nutrition Values of Mentha.

1.	Energy	14 Cal
2.	Protein	1.4 g
3.	Carbohydrates	1.7 g
4.	Fat	0.2 g
5.	Fiber	1.9 g

Table 3. Nutrition values of Erythrina Indica.

1.	Protein	1.81 g
2.	Carbohydrates	9.56 g
3.	Free fatty acids	0.91 g
4.	Beta carotene	1.1 mg / 100 g
5.	Vitamin E	
6.	Folic acid	26 / 100 g
7.	Nicotine acid	2 / 100 g

Table 4. Chemical compositions of Wheat flour.

1.	Protein	13.20 %
2.	Fat	0.90 %
3.	Carbohydrates	74.23 %
4.	Crude fibre	0.40 %
5.	Dry gluten	12.26%
6.	Wet gluten	25.52%

III. ANALYSIS

1. Chemical analysis

The prepared noodles were analyzed for moisture, protein, fat, ash, crude fiber, starch content by AOAC method. The total carbohydrates were calculated by approximation i.e. by subtracting the measured protein, moisture, fat and ash from 100[7].

2. Cooking quality evaluation

The cooking qualities of noodles were evaluated with respect to cooking time, cooking loss and water uptake [8].

2.1. Cooking time

Optimal cooking time was evaluated by observing the time of disappearance of the core of the noodle strand during cooking (every 20 sec) by squeezing the noodles between two transparent glass slides.

2.2. Cooking loss

The cooking loss was determined by measuring the amount of solid substance lost to cooking water. 10 gm sample of noodles was placed into 100 ml of boiling water in a 500 ml beaker. Cooking water was collected in a pre-weighed glass dish and was placed in a hot air oven at 105 C and evaporated to dryness. The dry residue was weighed and reported as a percentage.

2.3. Water uptake

The water uptake was calculated by getting the difference between weight of cooked noodles and weight of dried noodles. The cooked noodles were placed on filter paper for 5 min before weighing, to blot the excess adhered water.

3. Sensory evaluation

The prepared noodles were given to 20 persons for the sensory evaluation (i.e. color, taste, appearance, smell and overall acceptability). The results of the sensory

evaluation is given below based on the 9 points hedonic scale.

IV. RESULTS AND DISCUSSION

Table. 5. Composition of samples.

Samples	S1	S2	S3	S4
Wheat	55%	50%	50%	50%
Omavalli powder	15%	30%	10%	10%
Mint powder	15%	10%	30%	10%
Kalyana Murgai powder	15%	10%	10%	10%

Table.6. Sensory evaluation.

Sample	Color	Taste	Texture	Smell	Overall acceptability
S1	8.8	8.8	8.5	8.8	8.9
S2	8.5	7.9	8.3	8.5	8.2
S3	8.3	8.2	8.1	8.6	8.0
S4	8.1	7.1	8.1	6.9	7.5

The results from the sensory evaluation revealed that the sample 1 has better characteristics than others.

Table. 7. Chemical composition of prepared noodles.

Moisture	6.72%
Ash	2.34%
Protein	11.28%
Fat	4.98%
Starch	49.80%
Total carbohydrates	45.98%
Crude fibre	1.02%

Fig.4. Prepared noodles.



Table. 8. Cooking Quality evaluation.

Cooking time (min)	7.00
Cooking loss (g)	1.15
Water uptake (g)	9.99

V. CONCLUSION

Nowadays, noodles is the top most consumed fast food among the people. But fast food and street food are not at all good for health. So, people mostly used to avoid these

fast foods. The incorporation of the powders of coleus aromaticus, Mentha, and Erythrina indicia makes the noodles healthier. It will increase the nutritive value of the noodles. Hereafter, people will not hesitate to buy noodles. By consuming this noodles we can get rid from cold, cough and fever etc. Because this noodles contains more number of medical benefits.

REFERENCES

- [1] Plectranthus amboinicus (Indian borage), Datasheet, Invasive Species Compendium". Centre for Agriculture and Biosciences International. 23 November 2017. Retrieved 13 March 2020.
- [2] Brickell, Christopher; Zuk, Judith D. (1997). The American Horticultural Society: A-Z Encyclopedia of Garden Plants. New York, NY: DK Publishing. p. 668. ISBN 978-0-7894.
- [3] Erythrina variegata". Germplasm Resources Information Network (GRIN). Agricultural Research Service (ARS), United States Department of Agriculture (USDA). Retrieved 18 December 2017.
- [4] The Herbalist in the Kitchen, by Gary Allen, University of Illinois Press, 2010, p. 198.
- [5] Jamila, F.; Mostafa, E. (2014). "Ethnobotanical survey of medicinal plants used by people in Oriental Morocco to manage various ailments". Journal of Ethnopharmacology. 154 (1): 76–87. doi:10.1016/j.jep.2014.03.016. PMID 24685583.
- [6] Heuzé V., Thiollot H., Tran G., Edouard N., Lebas F., 2018. Coral tree (Erythrina variegata). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. <https://www.feedipedia.org/node/23080>.
- [7] AOAC. 2004. Official Method of Analysis. Association of Official Agricultural Chemist. 12th Ed. Washington, D.C., USA.
- [8] Taneya MLJ, Biswas MMH, Shams-Ud-Din M (2014) The studies on the preparation of instant noodles from wheat flour. J Bangladesh Agril Univ 12: 135-142.

Author Profile



B. Suruthi

3rd year Food Technology,
B. Tech, Food Technology,
JCT College of Engineering and Technology,
Coimbatore, Tamil Nadu, India.