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DEVELOPMENT AND SENSORY EVALUATION OF '*NARIKELAKSHIRIKA'* (A COCONUT BASED PUDDING)

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ABSTRACT

The study was undertaken to develop and standardize a wholesome and an ancient traditional Indian recipe, a sweet preparation *(Narikelakshirika)*. It was standardized as per the reference found in the ancient Ayurvedic literature *(Ksemakutuhalam)* with slight changes as per practical application. The primary objective of this study was to develop and quality assess (sensory analysis) the food product. It was made using tender coconut pulp, cow's milk, cow's ghee and candied sugar with an intention to develop an innovative and nutritive food product. Finally, sensory analysis of the product was carried out by a panel of 5 semi-trained judges on 5 points hedonic scale. The product exhibited an excellent acceptability for its aroma, taste and overall acceptability. Mouth feel and physical appearance were exhibited to be fair. Thus, it has shown an excellent overall acceptability & therefore can be used as an extreme nourishing dessert and a growth promoter. It can be recommended especially to growing children, adolescents, pregnant women and nursing mothers, people with emaciating disorders, leanness, malnutrition and to athletes. The product can be undertaken for further proximate and microbial analysis in future.

KEYWORDS: *Narikelakshirika*, Coconut, Cow's ghee, Cow's milk, Pudding.

INTRODUCTION

Food is one of the important and basic needs of a human being. It is an emotion and a key to healthy and happy living. A proper balanced and healthy diet with regular physical exercise and healthy mind is very important in today's world. With the change in time, science and technology, the lifestyle and eating habits of human beings have also changed significantly, which gave rise to a lot of lifestyle disorders and diseases like cancer, diabetes, hypertension, PCOD, etc. Along with modern science, the importance and influence of our traditional science in today's modern time is also seen. Physicians, nutritionists, dieticians, Ayurvedic doctors and public have all started to learn, accept and apply the traditional and modern science in their life.

This research paper aims to highlight the preparation and sensory evaluation of '*Narikelakshirika'* (Coconut kheer/pudding). This recipe was made by referring to the literature obtained from the book *'Ksemakutuhalam'* composed by *Ksemasarma*.

Narikelakshirika' is basically a Coconut-based milk dish which is prepared using highly nutritious & calorie dense food ingredients such as tender coconut, cow's milk, cow's ghee and candied sugar. It is an extremely nourishing food product.

Coconut, being the base of this product is considered as a 'superfood' due to a number of nutritional and health benefits that it offers. It is also known as *"Kalpavriksha"* or "the tree of life". It is one of the most amazing gifts that nature has given. The coconut fruit is used as a valuable source of food as well as medicine in many cultures, languages, religions and races scattered around the globe. In traditional medicine around the world, it is used to treat a wide variety of health problems. Coconut is a rich source of energy mostly sourcing from fats. It is abundantly endowed with medium chain saturated fatty acids (MCFAs) which posses a number of health benefits. Medium-chain triglycerides (MCTs) are the triglycerides that are composed of the fatty acids having 7–12 carbons in length. The MCTs have a different course of digestion; they enter bloodstream and travel directly to the liver where they are metabolized. MCFAs do not participate in the biosynthesis and transport of cholesterol.[1] In cardiovascular disease, MCTs have also been proposed to reduce hyperlipidemia based on observations that indigenous populations with high consumption of coconut flesh have low incidence of cardiovascular disease.[2] It is also a great source of various minerals, vitamins and antioxidants.

Followed by Coconut, another beneficial food ingredient used in making this product was Cow's milk. Milk is considered as 'whole food'. It contains high biological

value protein, carbohydrates, fat, important vitamins, minerals such as calcium, magnesium, phosphorus, potassium, sodium, etc. and is considered essential for sustaining life and maintaining health. These nutrients in milk almost make it nature's most nearly perfect food. According to Ayurveda, Cow's milk is the most *'Sattvik'* foods. It is conducive for all the beings, enliving, strengthening, growth promoting, anti-aging and a *rasayana*. It helps in increasing the *Ojas*.[4]

One of the most nutritious ingredients used in this recipe is Cow's ghee. It is a rich source of essential fatty acids such as EPA, DHA, oleic acid, etc along with the fat-soluble vitamins A, D, E and K. It also contains the beneficial conjugated linoleic acid. It is an excellent source of another essential fatty acid known as oleic acid (OA) which has numerous health and nutritional benefits. OA could be considered as a potential immunomodulatory fat. Diets rich in oleic acid have beneficial effects in inflammatory-related diseases. OA has the ability to reduce the inflammatory effects of long-chain saturated fatty acids in human aortic endothelial cells. OA in the colon mucosa might also have beneficial effects for IBD patients. It has also been reported as an anti-inflammatory fatty acid playing a role in the activation of different pathways of immune competent cells.[3] Cow's ghee also contains Short chain Fatty Acids (SCFAs) which have been reported to provide a number of health benefits including weight loss, management of diabetes, improvements in blood lipid profiles, improved immunity, etc. Ayurveda considers ghee as an indispensible part of a balanced diet and one of the best fats to be eaten. It has been said to increase longevity, provide strength & imparts luster, memory, is appetizing and balances the *tridoshas.*[4]

The recipe also contains candied sugar which is an excellent source of energy coming from simple carbohydrates.

Thus, it is a calorie dense product which is extremely nourishing. It provides a high amount of essential fats, is a rich source of proteins, carbohydrates and various vitamins and minerals. It gives a cooling effect on the human body.

MATERIALS AND METHODS

Raw materials procurement

Functional raw materials like Tender Coconut pulp, Cow's milk, Cow's ghee & candied sugar were procured from local supermarket of Pune.

Experimental trials & *Kshirika* preparation

The recipe *Narikelakshirika* was made according to the ingredients and procedure mentioned in *'Ksemakutuhalam'* grantha with some modifications in the formula.

It was prepared as per the traditional method of *kshirika* preparation.

Grated tender coconut pulp was sautéed in pure cow's ghee until it obtained a slight golden brown tinge. To this, boiled cow's milk was added and this mixture was stirred continuously until it thickened. Finally, candied sugar was added to it and the mixture was mixed properly.

Sensory Analysis of the product

The product was scored for characteristics like appearance, aroma, taste, texture/mouth feel and overall acceptability, by panel of five people on five point's hedonic scale using score-card. (Please refer table 1)

RESULTS AND DISCUSSION

Development of *Narikelakshirika*

The raw materials used for one serve were as follows:
Tender Coconut Pulp – 20g
Cow's milk- 240 ml
Cow's Ghee – 1 Tsp
Sugar -2 Tsp

Sensory Evaluation

The sensory analysis data of *Narikelakshirika* was as follows

Table 1: Individual scores of panelists on hedonic scale.

Sr. no.	Appearance	Aroma	Taste	Texture/mouth feel	Overall acceptability
1	3	5	5	4	5
2	4	4	5	4	4
3	4	4	4	3	4
4	3	3	5	4	4
5	3	4	4	4	4

The mean of the 5 characteristics was as follows

Table 2: Mean score of panelists on hedonic scale.

Sr. no.	Characteristic	Mean Score
1	Mean Appearance Score	3.4
2	Mean Aroma Score	4
3	Mean Taste Score	4.6
4	Mean Mouth feel/texture Score	3.8
5	Mean overall acceptability Score	4.2

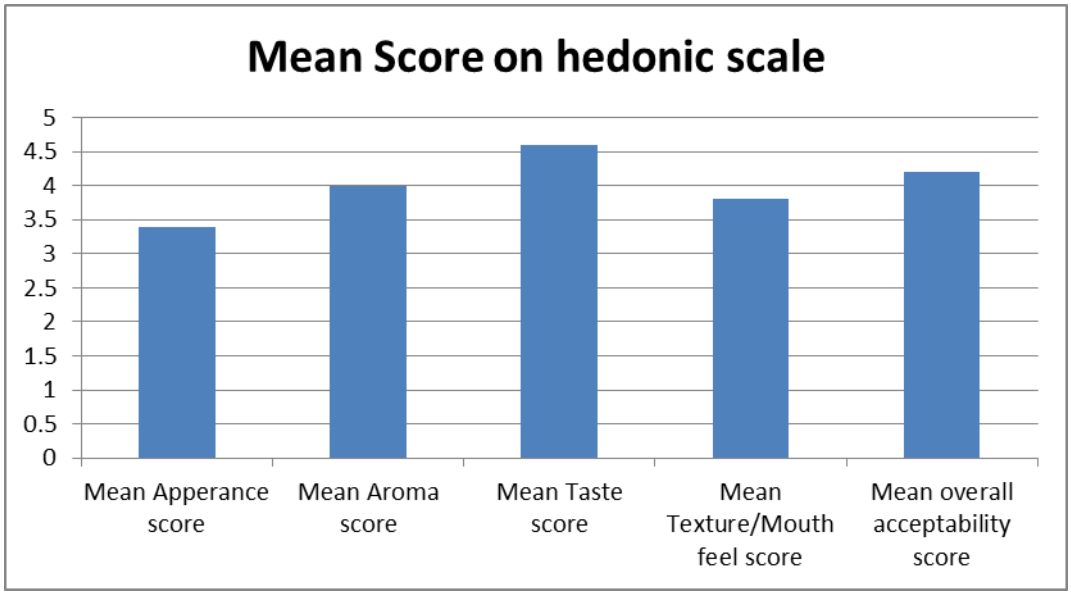

Figure 1: Sensory Evaluation of *'Narikelakshirika'*

Among sensory analysis, the product ranked excellent with the characteristics like aroma, taste and overall acceptability. The physical appearance and mouth feel were exhibited to be fair.

Thus, the product exhibited overall good acceptability with respect to sensory analysis.(Please refer table 2) As the ingredients used in this product are available throughout the year, it can be prepared anytime when one wishes to have it. One can especially enjoy having it during the winter season. This product has numerous therapeutic benefits and thus can have a global acceptance.

Calorific Value per serve[5]
Energy: 335 Kcal
Carbohydrates: 23g
Protein: 9g

Figure 2: *Narikelakshirika.*

CONCLUSION

A wholesome and nutritious coconut based sweet dish with therapeutic properties was successfully developed as per the reference found in Ancient Ayurvedic literature (*Ksemakutuhalam*). The product exhibited an excellent overall acceptability.

This coconut based sweet dish can be considered to be a calorie dense and an extremely nourishing food product. It gives a cooling effect on the human body. Its is an excellent source of protein, essential fats, calcium, antioxidants and thus can be recommended to growing children, adolescents, pregnant and nursing mothers, people with emaciating disorders, leanness, malnutrition and to athletes as it is very rich in carbohydrates and proteins that help in tissue repair and restoring the glycogen which gets depleted during heavy exercises.

Incorporation of this recipe into routine diet may significantly enhance the quality of diet and nutritional status of individuals.

There is a scope in the future to conduct proximate as & microbial analysis as well as to study the shelf life of the product.

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REFERENCES

Journal references

1. DebMandal M, Mandal S. Coconut (Cocos nucifera L.: Arecaceae): In health promotion and disease prevention. Asian Pacific Journal of Tropical Medicine, 2011; 4(3): 241-247.
2. Shah N, Berkeley N L. The use of medium-chain triglycerides in gastrointestinal disorders. Pract. Gastroenterology, 2017; 41: 20-28.
3. C Carrillo, Ma del M Cavia, S Alonso-Torre. Role of oleic acid in immune system; mechanism of

action; a review. Nutricionhospitalaria, 2012; 27(4): 978-990.

Book references

4. Scholars of the centre for theoretical foundations (CTF) of I-AIM. Bhojanakutuhaklam (English). 1st ed., Bangalore, India, 2012.
5. C.Gopalan, B.V. Rama Sastri & S.C. Balasubramanian. Nutritive Value of Indian Foods. National Institute of Nutrition, India, 2012.