



SENSORY ANALYSIS FOR CAKE, COOKIES AND WAFER BISCUIT DEVELOPED FROM WHELK (*Chicoreus ramosus*) MUSCLE

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ABSTRACT

Chicoreus ramosus muscle is edible seafood that muscle in Thoothukudi district. So I change that muscle to value added products. It has a significant role in brain development. Foods made from *Chicoreus ramosus* muscle boost health, The objectives to develop a tentative formulation and standardise of using a combination of *Chicoreus ramosus* whelk muscle.To evaluate the physical characteristics of the *Chicoreus ramosus* products.To develop a scale for sensuality and to measure the sensory experiences of the products.To analyse the Packaging of the *Chicoreus ramosus* products.To study the shelf life of the products. 100 Respondents were randomly selected 20 years to 40 years(adult). This study is conducted in Thoothukudi city. The Organoleptic Acceptability of the formulated value added products by the sensory evaluation such as appearance/colour, Taste/Flavour, Smell/Odour, Texture/Mouthfeel and Over all acceptability by 5-point hedonic scale was used to calculate the food susceptibility in sensory pattern. Two variation of dried whelk muscle powder for the preparation of ***Chicoreus ramosus*** cake, ***Chicoreus ramosus*** cookies, ***Chicoreus ramosus*** wafer biscuit. The two variations of V1 – 30g, V2 – 25g. The sensory evaluations of these samples the V2 samples are accepted and have high value.

KEY WORDS: *Chicoreus Ramosus*, Muscle, Products, Sensory Evaluation, Analyse

INTRODUCTION

Bakery products are ready to eat, convenient to use, and possess satisfactory nutritional quality. India is the Second-largest producer of biscuits. The two major bakery items are bread and biscuit account for about 82% of the total Bakery products.(Goyal, 2006). In India Sweet or savoury biscuits are popularly enjoy by the peoples. Traditionally, the biscuits are the good source of energy and nutrition in India. Mintel research shows that the consumers of India almost two-thirds (63%) are eaten healthy biscuits such as multigrain, high-fibre, low/no sugar. And it improves the immunity. Consumers of South of 41%, around 25-34 years of age consumers 35% across India. The features of healthrelated Indian consumers are energy boosting (36%) and balanced nutrition (33%).(Mintel, 2020). Wafers, improbable other biscuits are produced by the baked between heavy hot plates form a very fluid batter to forms thin sheets. Wafer gives the unique textured eating experience. It maintain the crispness and lightness. The distribution of moisture and weight of sheet is important. (D Manley,2011) According to the International journal of Food science and Technology 41(5), 569-576, said that the wafers are baked foods which are low-moisture content. It is produced by the batter and baked between hot plates. The wafers are baked products which are low-moisture content. It is produced by the batter and baked



between hot plates. The wafer are mainly controlled by the quality of water sheets are flour property, water level, mixing action, baking time and temperature, density, viscosity, holding time and temperature are the quality to be judged. The water level of 155-165%, baking temperature of 170% and 2 minutes of baking time are the high quality of wafer sheets. **(Ismail S Dogan, 2006)**. In Tamil Nadu, Thoothukudi District is one of the most famous place for seashore. The *Chicoreus ramosus* and many shellfish are available many places in Thoothukudi District. The Production of Whelk *Chicoreus ramosus* are higher in the winter season. Kalavasal, Threspuram, Vembar, Keelavaipar, Sippikulam, VOC Port are the important seashore areas in Thoothukudi are cultivating *Chicoreus ramosus*. The only few peoples are using *Chicoreus ramosus* Whelk Muscle as food especially the people near the seashores. Many peoples are not consuming whelk muscle as food. And many Fishermans are use only whelk to sell for the cost. They are wasting the whelk muscle. We take these *Chicoreus ramosus* Whelk Muscle and producing many new products. The whelk muscle have many health benefits. Thus the value added products and new products are prepared from the *Chicoreus ramosus* are Cake, Cookies and Wafer Biscuit.

OBJECTIVES

- To develop a tentative formulation and standardise of using a combination of *Chicoreus ramosus* whelk muscle and evaluate the physical characteristics of the *Chicoreus ramosus* products.
- To develop a scale for sensuality and to measure the sensory experiences of the products.
- To analyse the Packaging of the *Chicoreus ramosus* products. To study the shelf life of the products.

METHODS AND MATERIALS

Selection of the Respondents:

Hundred Respondents were randomly selected 20 years to 40 years(adult).

This study is conducted in Thoothukudi.

Selection of Raw Material:

Chicoreus ramosus muscle was purchased from Threspuram in Thoothukudi District of Tamil Nadu in Southern India. The other ingredients for cake, cookies, and wafer biscuits were purchased from supermarket in Thoothukudi District

Equipments used in the study:

Oven, Measuring Cups, Egg beater, Tray, Bowl, Measurement Machine, Plates, Spoon, Wafer Machine, Biscuit cutter, Knife.

Figure -1: Process of *Chicoreus ramosus* Whelk Muscle powder

- Chicoreus ramosus Whelk
- Separation of Muscle from shell
- Boil the Muscle
- Clean the unwanted parts of muscle
- Cut into small round pieces
- Dry in sun light for 5 days
- Grind the Dried Whelk Muscle
- Stored in air tight container in room temperature

Formulation and Standardization of Chicoreus ramosus Muscle Products:

Table-1: Preparation of Chicoreus ramosus Cakes

Sample	Ingredients						
	Dried whelk muscle powder	Sugar	Maida	Butter	Milk	Egg	Baking powder, Baking soda, Salt
V1	30g	25g	30g	5g	4g	5g	1g
V2	25g	30g	30g	5g	4g	5g	1g

Table-2: Preparation of Chicoreus ramosus Cookies

Sample	Ingredients					
	Dried whelk muscle powder	Maida	Sugar	Butter	Milk	Baking powder, Baking soda, Salt
V1	30g	25g	30g	8g	6g	1g
V2	25g	30g	30g	8g	6g	1g

Table-3: Preparation of Chicoreus ramosus Wafer Biscuit

Sample	Ingredients						
	Dried whelk muscle	Maida	Rice flour	Sugar	Butter	Milk	Baking powder, Baking soda, salt



	powder						
V1	30g	20g	5g	30g	8g	6g	1g
V2	25g	25g	5g	30g	8g	6g	1g

The Organoleptic Acceptability of the formulated value added *Chicoreus ramosus* products

The Organoleptic Acceptability of the formulated value added products by the sensory evaluation such as appearance/colour, Taste/Flavour, Smell/Odour, Texture/Mouthfeel and Over all acceptability by 5-point hedonic scale was used to calculate the food susceptibility in sensory pattern.

PREPARATION OF VALUE ADDED CHICOREUS RAMOSUS PRODUCTS:

Preparation of *Chicoreus ramosus* Cake:

Take 500g dried whelk muscle. After that whelk muscle become 350g of powdered gram in weight. The two variation of products for the whelk muscle powder like V1 is 30g and V2 is 25g. First the preparation of cake for the V1 is 30g. The preparation is adding 5g of egg and beat it then add 25g of sugar to it. Then add 30g of maida flour and mix it. Then 5g of Butter and 4g of milk are add together and mix it well then add 25g of dried whelk powder Add 1g of baking powder, baking soda and salt. Then the V2 is 25g. The preparation is adding 5g of egg and beat it then add 30g of sugar to it. Then add 30g of maida flour and mix it. Then 5g of Butter and 4g of milk are add together and mix it well then add 25g of dried whelk powder Add 1g of baking powder, baking soda and salt. Bake these two variation dough in oven 180°C for 25 minutes. Then packed in Aluminium foil silver plastic pouches bag and stored in refrigerator at temperature of 18°C.

Preparation of *Chicoreus ramosus* Cookies:

The two variation of products for the whelk muscle powder like A1 is 30g and A2 is 25g. First the Preparation of Cookies for the V1 is 30g. The preparation by adding 8g of Butter in the plain surface then add 25g of maida flour to it. Then add 30g of sugar and 6g of milk to it. Mixing the ingredients with the 1g of baking powder, Baking soda and salt. Then add 25g of dried whelk muscle powder to it and mix it well. Then the V2 is 25g. The preparation by adding 8g of Butter in the plain surface then add 30g of maida flour to it. Then add 30g of sugar and 6g of milk to it. Mixing the ingredients with the 1g of baking powder, Baking soda and salt. Then add 25g of dried whelk muscle powder to it and mix it well. Bake these two variation dough in oven for 25 minutes in 180°C. Then packed in Aluminium foil silver plastic pouches bag and stored in refrigerator at temperature of 18°C.

Preparation of *Chicoreus ramosus* Wafer Biscuit:

The two variation of products for the whelk muscle powder like V1 is 30g and V2 is 25g. First the Preparation of Wafer Biscuit for the A1 is 30g. The preparation is adding 20g of Maida flour and 30g of sugar then mix it well. Then add 8g of Butter to it. Mix the ingredients with the 5g of rice flour, 6g of milk, 1g of Baking powder, Baking soda, and salt. Then add 25g of dried whelk muscle powder. Mix all the ingredients. Then the A2 is 25g. The preparation is adding 25g of Maida flour and 30g of sugar then mix it well. Then add 8g of Butter to it. Mix the ingredients with the 5g of rice flour, 6g of milk, 1g of Baking powder, Baking soda, and salt. Then add 25g of dried whelk muscle powder. Mix all the ingredients. Bake these two variation dough in the wafer machine for 10 minutes. Then pack in Aluminium foil silver plastic pouches bag and stored in refrigerator at temperature of 18°C.

SHELF LIFE OF THE VALUE ADDED CHICOREUS RAMOSUS PRODUCTS:

The shelf life of the products S1, S2, S3 are placed in the room temperature at 36 C, refrigerator at 2 C, freezer at 0 C for 60 days.

Packaging of the Chicoreus ramosus Products:

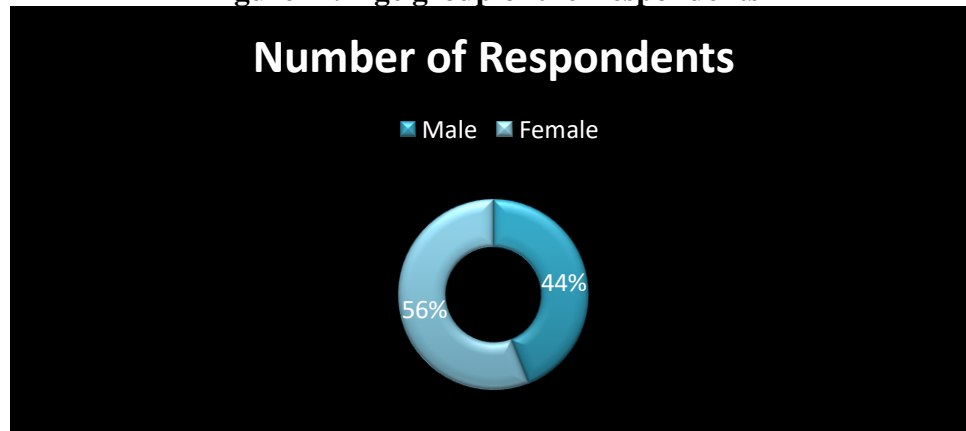
Packaging of the Sample S1, S2 and S3 are packed in Aluminium foil silver plastic pouches bag and Polypropylene bag.

Plate -1: Packaging of the Products**ANALYSIS OF DATA:**

Mean value, Percentage Analysis

RESULT AND DISCUSSION**Age group of the Respondents:**

The Socio economic profile have been obtained by the adult age group of 20 to 40 years urban people are like the products most in Thoothukudi.

Figure -2: Age group of the Respondents**OVERALL MEAN VALUE OF THE Chicoreus ramosus CAKE SAMPLE (S1)**

The Overall mean value of the cake sample (S1), Like Extremely the mean value of C is 0.22, V1 is 0.53 and A2 is 0.53. Like very much the mean value of C is 0.1, A1 is 0.17 and V2 is 0.34. Like moderately the mean value of C is 0.15, V1 is 0.06 and V2 is 0.05. Like slightly the mean value of C is 0.15, V1 is 0.03 and V2 is 0.03. Neither like or dislike the mean value of C is 0.11, V1 is 0.05 and V2 is 0.01. Dislike highly the mean value of C is 0.05, V1 is 0.09 and V2 is 0.01. Dislike moderately the mean value of C is 0.09, V1 is 0.02 and V2 is 0.01. Dislike very much the mean value of C is 0.05, V1 is 0.04 and V2 is 0.01. Dislike extremely the mean value of C is 0.08, V1 is 0.01 and V2 is 0.01.

Overall mean value of the chicoreus ramosus cookies sample (S2)

The Overall mean value of the cookies sample (S2), Like Extremely the mean value of C is 0.19, V1 is 0.51 and V2 is 0.54. Like very much the mean value of C is 0.17, A1 is 0.25 and A2 is 0.29. Like moderately the mean value of C is 0.15, V1 is 0.09 and A2 is 0.07. Like slightly the mean value of C is 0.13, V1 is 0.04 and V2 is 0.05. Neither like or dislike the mean value of C is 0.06, V1 is 0.03 and V2 is 0.01. Dislike highly the mean value of C is 0.08, V1 is 0.01 and V2 is 0.01. Dislike moderately the mean value of C is 0.07, V1 is 0.04 and V2 is 0.01. Dislike very much the mean value of C is 0.09, V1 is 0.02 and V2 is 0.01. Dislike extremely the mean value of C is 0.06, V1 is 0.01 and V2 is 0.01.

Overall mean value of the chicoreus ramosus wafer biscuit sample (S3)

The Overall mean value of the Wafer Biscuit sample (S3), Like Extremely the mean value of C is 0.16, V1 is 0.5 and V2 is 0.55. Like very much the mean value of C is 0.2, V1 is 0.13 and V2 is 0.28. Like moderately the mean value of C is 0.15, V1 is 0.07 and V2 is 0.0. Like slightly the mean value of C is 0.11, V1 is 0.06 and V2 is 0.04. Neither like or dislike the mean value of C is 0.1, V1 is 0.12 and V2 is 0.01. Dislike highly the mean value of C is 0.09, V1 is 0.03 and V2 is 0.01. Dislike moderately the mean value of C is 0.07, V1 is 0.05 and V2 is 0.01. Dislike very much the mean value of C is 0.06, V1 is 0.02 and V2 is 0.01. Dislike extremely the mean value of C is 0.06, V1 is 0.02 and V2 is 0.01.

**Table – 4. Score card for overall acceptability of the chicoreus ramosus products
S1 – Cake S2 – Cookies S3 – Wafer Biscuit S3**

Score	S1			S2			S3		
	Respondent	Mean value	%	Respondent	Mean value	%	Respondent	Mean value	%
Like extremely	53	0.53	53	54	0.54	54	55	0.55	55
Like Very much	34	0.34	34	29	0.29	29	28	0.28	28
Like Moderately	5	0.05	5	7	0.07	7	8	0.08	8
Like Slightly	3	0.03	3	5	0.05	5	4	0.04	4
Neither Like or Dislike	1	0.01	1	1	0.01	1	1	0.01	1
Dislike highly	1	0.01	1	1	0.01	1	1	0.01	1
Dislike moderately	1	0.01	1	1	0.01	1	1	0.01	1
Dislike very much	1	0.01	1	1	0.01	1	1	0.01	1
Dislike extremely	1	0.01	1	1	0.01	1	1	0.01	1

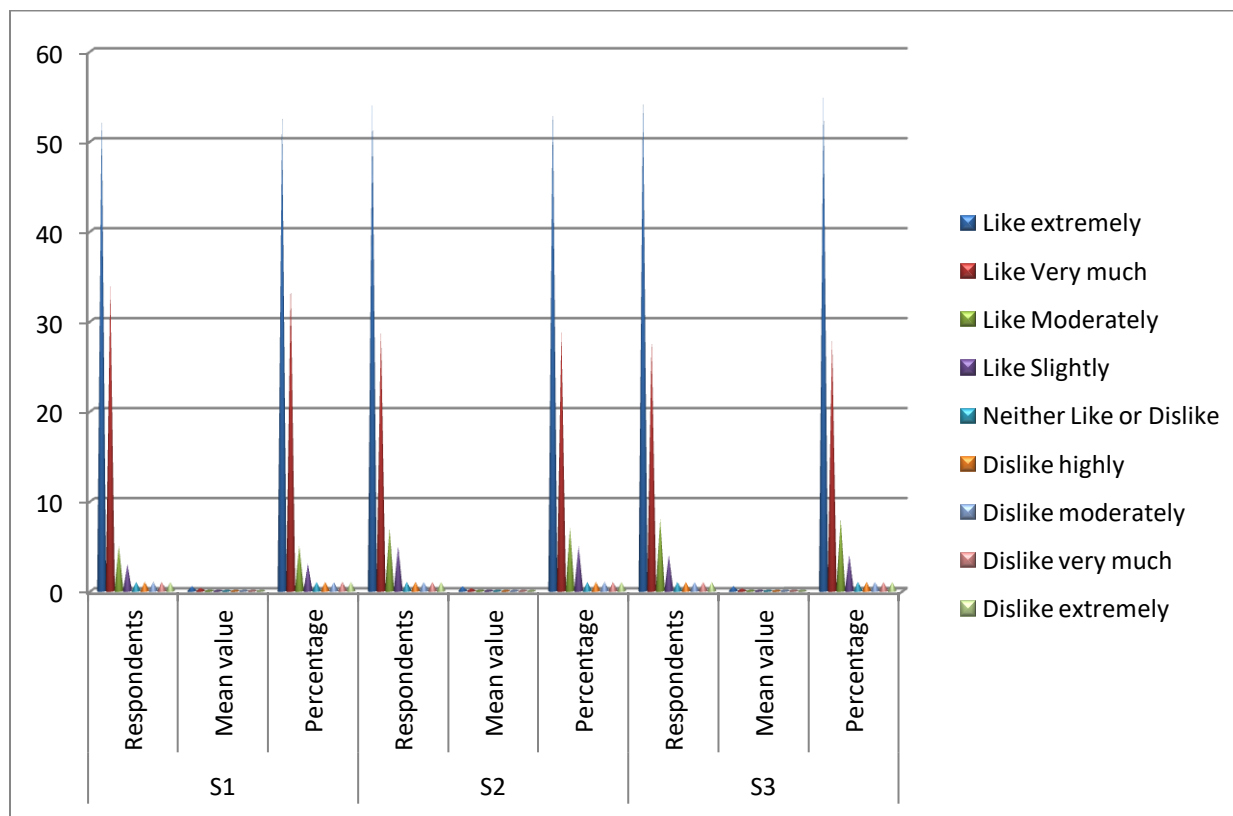


Figure – 2 Score card for over all acceptability of the Chicoreus ramosus Products

The above table - 4 shows that the cake sample S1 have Like Extremely of mean value is 0.53, Like very much of mean value is 0.34, Like moderately of mean value is 0.05, Like slightly of mean value is 0.03, Neither like or dislike of mean value is 0.01, Dislike highly of mean value is 0.01. Dislike moderately of mean value is 0.01. Dislike very much of mean value is 0.01. Dislike extremely of mean value is 0.01. The Wafer biscuit sample S3 have Like Extremely of mean value is 0.55, Like very much of mean value is 0.28, Like moderately of mean value is 0.08, Like slightly of mean value is 0.04, Neither like or dislike of mean value is 0.01, Dislike highly of mean value is 0.01. Dislike moderately of mean value is 0.01. Dislike very much of mean value is 0.01. Dislike extremely of mean value is 0.01. the cake sample S1 have Like Extremely of mean value is 0.53, Like very much of mean value is 0.34, Like moderately of mean value is 0.05, Like slightly of mean value is 0.03, Neither like or dislike of mean value is 0.01, Dislike highly of mean value is 0.01. Dislike moderately of mean value is 0.01. Dislike very much of mean value is 0.01. Dislike extremely of mean value is 0.01. Thus, S3 have high score of S2 and S1.

Physical Characteristics of the Formulated value added Chicoreus ramosus Products

Table – 5: Physical Characteristics of the Formulated value added Chicoreus ramosus Products

S.No	Name of the product	Name of the sample	Weight (g)	Diameter (cm)	Thickness (cm)	Width (cm)	Length (cm)
1	Cake	V ₂	50	4	2	4	5



2	Cookies	V ₂	20	3	0.4	4	5.5
3	Wafer Biscuit	V ₂	1	-	1	2	10

Shelf Life of the value added *Chicoreus ramosus* Products

The *Chicoreus ramosus* Cake - Sample 1, *Chicoreus ramosus* Cookies - Sample 2 and *Chicoreus ramosus* Wafer biscuit -Sample 3 was not changed in their Colour and taste in 15th day. During 60th day it was observed that the colour and taste was not changed.

SUMMARY AND CONCLUSION:

These three *Chicoreus ramosus* Products of S1, S2 and S3 are kept in room temperature, refrigerator and freezer for 60 days the Colour, Taste, Flavour, Smell were observed. From this study, it was revealed that the keeping quality of these three products was found to be good.

This study conducted in Thoothukudi by the randomly selected 100 respondents of 20 to 40 years age group adults. Thus the female respondents are high. It was concluded that the S3 sample of wafer biscuit have the highest score and accepted by all panels recorded good score reports on other samples.

This value added products from the Whelk muscle of *Chicoreus ramosus* and it is prepared. These products are sensory evaluated by randomly selected peoples. It is accepted and attracted by the people.

Finally concludes the summary by saying that the 20 – 30 age group adult is preferred S1 like extremely (0.82), 31 - 40 age group adult is preferred S2 like extremely (0.88) and 20 – 30 age group adult is preferred S3 like extremely (0.74).

Chicoreus ramosus Products have been highly nutritious.it has health benifits it prevent chronic diseases and disorders.

REFERENCE

- Meera Rao Patankar, PushpaBharathi. (2001). "Food Preparation: A Scientific Approach" First edition. pp. 98, 115, 158, ISBN: 81-261-0720-0
- N. ShakuntalaManay, M. Shadaksharaswamy. (2001). "Foods Facts and Principles" Second edition. pp. 336, 359, 408, ISBN: 81-224-1325-0
- Sumati R. Mudambi, Shalini M. Rao, M.V. Raja gopal. (2006). "Food Science" Revised Second edition. pp. 86, 109, ISBN(10): 81-224-1779-5
- Vijay Kaushik. (2000). "Food Science and Nutrition" pp. 15, 41, ISBN: 81-7594-047-6
- D. Manley. (2011). "Manley's Technology of Biscuits, Crackers & Cookies". 4th edition, pp. 353-371. <https://doi.org/10.1533/9780857093646.3.353>
- D. Nelson. (1994). "Journal of Comparative Physiology". Pp. 164,147-155.
- I.S. Kotsianis. (September-October, 2002). "Trends in Food Science and Technology". Vol 13(9-10). [https://doi.org/10.1016/S0924-2244\(02\)00162-0](https://doi.org/10.1016/S0924-2244(02)00162-0)
- Ismail S. Dogan. (March 2006). "Factors affecting wafer sheet quality". (Journal of Food Science and Technology). Vol 41(5), pp. 569-576. <https://doi.org/10.1111/j.1365-2621.2005.011117.x>



- Margaret Zaitoun. (October, 2018). “Sugars: Types and their Functional Properties in food and human health”. ISSN:2381-4837
- <https://www.worldbakers.com/wafers-evolving-flavors-and-formats/>
- <https://www.tradeindia.com/blog/top-wafer-biscuit-manufacturing-companies-in-the-world/>
- <https://www.foodtechbiz.com/anufood-india-2022/take-your-pick-from-pickwicks-wide-range-of-wafer-biscuits-rolls-waffles-cookies-and-much-more>
- <https://www.ijcommdent.com/article.asp?issn=2589-8388;year=2021;volume=9;issue=2;spage=148;epage=151;aualast=Subramani>
- <https://www.moneycontrol.com/news/business/almost-two-thirds-of-indian-consumers-ate-healthy-biscuits-in-last-6-months-mintel-survey-5616911.html>