STUDIES ON RECIPE DEVELOPMENT AND ORGANOLEPTIC EVALUATION OF PEARL GALLETAS

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Abstract: Pearl galletas is a type of baked product or cookies produced using the lemongrass seasoned chocolate and malted pearl millet mixture which is more in nourishment just as the lemongrass which is the distinctive component use in this with the goal that it very well and also consumed by all the age groups. The aim of the project is to developed a nutritionally healthy product. Pearl Galletas cookies are very beneficial to consume as they are rich source of protein and fiber. Enrichment of fiber in cookies is done by the process of malting. The nutritionally rich pearl galletas cookies was organoleptically evaluated using 9 points hedonic scale method. Cookies provides 10.15 g of protein, 23.95 g of carbohydrates, 22.3 g of fats. The packaging material used is plastic containers.

Index Term – bakery products, pearl galletas, lemongrass, organoleptic evaluation, hedonic scale

I. INTRODUCTION

A cookie is a baked food product that is commonly little, level and sweet. It typically contains flour, sugar and some sort of oil or fat. Cookies or biscuit treat variations incorporate sandwich scones, for example, custard creams, Bourbons and Oreos, with marshmallow or jam filling and once in a while dunked in chocolate or another sweet covering. In the time of present-day world, the mankind is moving towards innovation driven helpful way of life. In such a mechanical affected world, in light of diet change more than 33% populace is under danger of horrible wellbeing concerns including non-transferable sicknesses, wholesome lacks and some more. Additionally, besides the food utilization is likewise transforming from an ordinary locally situated food to persuaded nourishments. In some setting our prime undertaking in the ongoing examination study was centered around a usage of characteristic just as fake supplement thick substances to create protein and fiber rich treats. Pearl galletas are protein and fiber rich cookies with lemongrass flavored Choco fillings, in which the cookies are made with malted pearl millets flour and all-purpose flour (Maida). The ingredients involved in the preparation of Pearl galletas involves ingredients like pearl millets, all-purpose flour, butter, sugar, dark chocolate and main ingredient that is lemongrass. lemongrass contains a few cancer prevention agents, which can help search free extremists in your body that may cause infection. As we know there are various cookies available in market like fried cookies, mold cookies and many more but pearl galletas are comparatively more superior and can be consumed by all the age groups because these cookies are rich in protein and fiber with the natural sources and also malted millets are use which fulfills the requirement of iron and fiber. This item goes under the classification of pastries these are creative, basic, and fundamental and requires no unique treatment for the handling and furthermore has more sustenance benefits and are additionally techno financially feasible for business creation of any scale. The daily protein intake should be 0.8 g per kg of body weight and these cookies fulfilled the requirements of that too. Pearl millets prevents diabetes's, protects heart and rich in vitamin B and magnesium. Dark chocolate helps to lower blood pressure, rich in vitamins and minerals. Chocolate is such an ingredient which adds taste to the product and also reduces stress. Malting is unit operation involves in preparation of this cookies in which the growing (germination) of grain in moist air, under controlled ecological conditions of millets is done. The fundamental goal of malting is to alter the grain structure and synthesis and also is light in color and also includes access to nutrition and also has better amino acid profile and that is the main objective behind using a malted form of millets. This is accomplished fundamentally by activating the malt's endogenous proteins to hydrolyses the biopolymer particles. The safety parameters of the cookies are crucially regulated by FSSAI regulations and found free from any kind of hazard. Shelf life of pearl galletas is around 3 months at room temperature.

II. MATERIALS AND METHODS

The raw materials used during present investigation like Malted pearl millets flour, all-purpose flour, sugar, butter, lemongrass leaves, and packaging material were procured from local market of Loni-Kalbhor, Pune, Maharashtra.

Organoleptic evaluation of prepared Pearl Galletas:

The prepared pearl galletas sample was evaluated for sensory characteristics like colour, flavour, texture, consistency and overall acceptability by 5 semi-trained panel members comprised of academic staff members of MIT school of Food Technology, Pune. Judgment was made through rating of products on a 9-point Hedonic scale with corresponding descriptive terms ranging from 9 'Like Extremely' to 1 'Dislike Extremely'.

Chemical analysis of Pearl Galletas:

The randomly selected samples of pearl galletas will be analysed for the weight, size, shape and other properties.

Moisture
Moisture content in the product will be determined by drying a known quantity of the samples (sample1, sample2, sample3) in an oven at 55 ± 2 °C till it gave a constant weight. Average of three samples will be calculated and expressed in %, taking the weight of fresh sample as initial weight.

Protein
Protein content will be determined by using Kjeldhal Apparatus as described in AACC (2000) Method No. 46-30.

Total carbohydrates
Carbohydrates can be estimated by phenol H2SO4 method according to AOAC (2000)

Total fat
Total fat content will be determined using hexane as a solvent in Soxhlet apparatus as per the procedure given in AACC (2000) Method No. 30-25

Crude Fibre
Fibre will be determined by subjecting the sample paste to simultaneous acid-base treatments, cooled in desiccators and weighed to determine the percentage crude fibre content (AOAC, 2004).

Total ash
Ash will be estimated by direct burning of sample; igniting it in a Muffle Furnace at 550°C till greyish white residue obtained (AACC, 2000; Method No. 08-01).

Nutritional Content-

Randomly picked pearl galletas cookie samples are taken for chemical analysis. Various methods are used in the process. Chemical parameters or nutritional contents found in 100 gm sample is as follows:

Table No.1: Nutritional Data

Sr. No.	Nutritional Contents	Values (in gm)
1.	Moisture	4.13
2.	Protein	13.35
3.	Carbohydrates	19.05
4.	Fats	22.3
5.	Fiber	9.5

III. METHOD OF PREPARATION

Ingredients: (Per 100gm)

All the ingredients are taken according to recipe and treatments were given.

Table No.2: Ingredients

Sr. No.	Ingredients	Quantity
1.	Malted pearl millets flour	216 gm
2.	All-purpose flour (Maida)	162 gm
3.	Shortenings	162 gm
4.	Sugar	243 gm
5.	Milk	54 gm
6.	Lemongrass (chopped)	14 gm
7.	Dark chocolate compound	135 gm
8.	Guar gum	2 gm
9.	Baking powder	3.8 gm
10.	Salt	1-1.5 tsp

Processing method:

- Lemongrass flavored chocolate-

Half cup of milk was heated with chopped lemongrass.

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Sieved all the mixture and kept it for boiling till it simmers.

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Boiled milk was added to chopped dark chocolate compound.

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Stirred well till chocolate gets melt and then refrigerated for 1-2 hours.

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Prepared flavoured cream was used in cookies preparation.

- Cookies-

One cup of sugar, half cup of of all-purpose flour (Maida) and half cup of malted pearl millets were whisked into half cup of butter.

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Pinch of cocoa powder, pinch of baking powder and salt for taste and 1-2gm of guar gum as stabilizer were added and prepared a dough.

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Cookies were prepared by adding chocolate at core of each cookie.

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Cookies are baked at 120°C for 10-15 min.

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Delicious cookies are ready and packed in plastic container.

Figure No.1: Pearl Galletas

IV. Result and Discussion

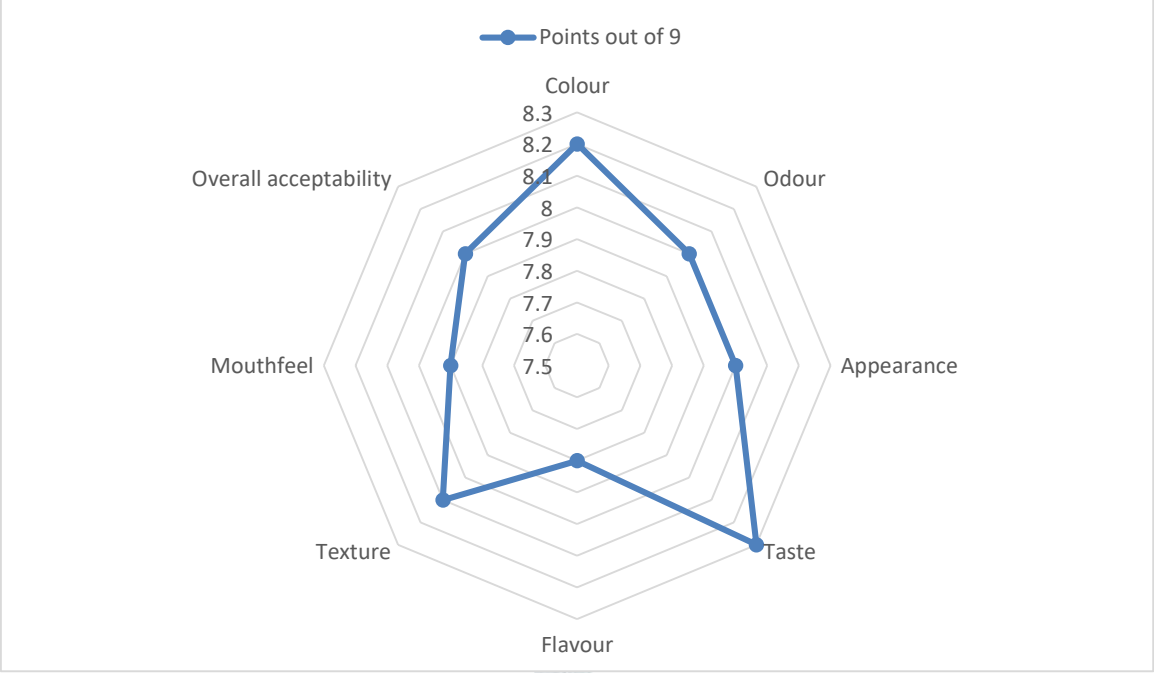
Sensory evaluation of Pearl Galletas-

The sensory evaluation of organoleptic characteristics like colour, appearance, taste, flavour, texture, mouthfeel, and overall acceptability were carried out by semi trained panellists by method of hedonic scale with "9 as Like Extremely and 1 as Dislike extremely". Then average score was calculated for individual organoleptic property.

Table No.3: Sensory Evaluation

Attribute	Rating score
Colour	7.9
Odour	8
Appearance	8
Taste	8.1
Flavour	7.8
Texture	8.1
Mouthfeel	7.7
Overall acceptability	7.8

Figure No.2: Radar chart of Peral galletas



Shelf life analysis-

The prepared product was analyzed for duration of 6 weeks which started after second day of preparation of the product. Cookies were stored under both room temperature as well as refrigerated condition for 6 weeks in its packaging material. The product was observed and tasted at frequent intervals for any change in appropriate color, odour, texture, taste and moisture. The observations are as follows:

Table No.3: Shelf life

Week	Observations
Week 1	No change in colour, odour, taste, texture and appearance
Week 2	No change in colour, odour, taste, texture and appearance
Week 3	No change in colour, odour, taste, texture and appearance
Week 4	No change in colour, odour, taste, texture and appearance
Week 5	No change in colour, odour, taste, texture and appearance
Week 6	No change in colour, odour, taste, texture and appearance

Result: - The shelf life of Cookies is up to 3 months at room temperature while storage in refrigerator results to more shelf life.

V. Conclusion-

The prepared pearl galletas is baked product can be eaten as dessert or as snacks. It is bakery product so that the easy to prepare as simple process is involved. The replacement of more than half amount of all-purpose flour with malted pearl millet flour makes it more proteinaceous and fiber rich which is beneficial for health.

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