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NUTRI-TARTS

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ABSTRACT

In recent scenario the lifestyle patterns are the major cause of increasing risk factors like obesity, diabetes mellitus, cardio-vascular diseases, arthritis etc. Considering the general eating patterns of the population an innovative product “Nutri-Tarts” were made. The tarts comprises of various flours like *Pennisetum typhoideum* (bajra flour), *Avenabyzantina* (oats), *Triticum aestivum* (wheat flour) to make it a multigrain product. Also flax seeds are added which act as a functional food which help in lowering the cholesterol levels. They are a good source of omega 3 fatty acids. *Sesamum indicum* (Gingelly seeds) are added which increases the calcium content of the product, thus making it a healthy multigrain product with a light flavor of kasuri methi. The tarts were baked to reduce the oil content of the product. They were further standardized based on the sensory evaluation tests done. Microbial testing was conducted to check the shelf life of the product. Overall the product showed a good shelf life and served as a healthy snack option.

Key words: Tarts, Multigrain, Oats, Baked.

INTRODUCTION

A food product was developed so as to develop skills involved in entrepreneurship. Several recipes were tried out of which nutri-tarts was selected because of its nutritional content. Various ingredients were added which added to its health benefits. A tart is a baked dish consisting of a filling over a pastry base with an open top not covered with pastry. The pastry is usually shortcrust pastry; the filling may be sweet or savoury, though modern tarts are usually fruit-based, sometimes with custard. Tartlet refers to a miniature tart.

Tarts were made out of various flours making it multigrain. Also flax seeds were added which help in lowering the cholesterol levels. Gingelly seeds were added to increase the calcium content of the product.

MATERIALS AND METHODS

STANDARDIZATION

Initially various recipes were tried to make a standard product which included khakras using various flours. After brain storming sessions the normal khakra's were given different shapes as tarts, using multigrain flours. Thus after all the brain storming sessions nutri-tarts were standardized using ingredients as shown in “Table-1”

Table-1- Ingredient used for the preparation of recipe

Ingredients	Amount
Bajra flour	20 gms
Wheat flour	20 gms
Oats	20 gms
Flax seeds	10 gms
Gingelly seeds	10 gms
Kasuri methi	5 gms
Red chilli powder	½ tsp
Cumin powder	½ tsp
Oil	10 gms

METHOD

Firstly the flax seeds and gingelly seeds were dry roasted, then all the flours were added to it and kasuri methi and red chilli powder were added for flavor. Salt and cumin powder were added. The dough was kneaded and rolled out into rotis and then was placed in tart moulds and was baked for 20 mins at 180 degrees in the oven.

NUTRIENT ANALYSIS OF THE DEVELOPED RECIPE

The nutrient such as energy, carbohydrate, protein, fat, fibre and calcium were analyzed.

SENSORY EVALUATION

To find the acceptability of the product, sensory evaluation was conducted using a naïve panel comprising of 18 students, periodically for 3 weeks, the product was evaluated using a scoring test with the following characteristics such as Taste, colour, appearance, texture and aftertaste. The scores used for evaluation as Poor, Fair, Good, Very Good and Excellent. Taste the product and evaluate it according to its characteristics and mark them according to the scale given above. It is carried out for 3 consecutive weeks.

MICROBIAL TESTING

Table-2 - Nutritive Value Chart

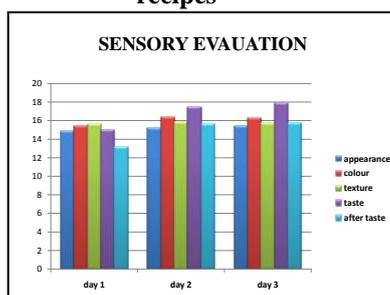
Ingredients	Amount (g)	Energy (kcal)	CHO (g)	Protein (g)	Fat (g)	Fibre (g)	Calcium (mg)
Bajra flour	20g	72	13.5	2.32	1	2.26	8.4
Wheat flour	20g	68	13.88	2.42	0.34	2.5	9.6
Oats	20g	78	12.44	3.04	1.72	2.1	-
Flax seeds	10g	53	2.8	1.82	4.21	2.73	25.5
Gingelly seeds	10g	56	2.5	1.83	4.33	1.68	145
Oil	10g	90	-	-	10	-	-
Total		417	45.12	11.43	21.6	11.27	188.5

The recipe contains 417kcal of energy, 45.12g of carbohydrate, 11.43g protein, 21.6g fat, 11.27g fibre and 188.5mg of calcium respectively.

SENSORY EVALUATION

A continuous sensory evaluation was done on 1st, 2nd and 3rd week after the product was made. It was done in order to check the acceptability of the product and to find whether there were any changes in the characteristics: color, taste, appearance and texture of the product.

Figure-1 -Sensory evaluation of the developed recipes



The result showed that the appearance and taste improved on day 2 and day 3 than day 1. Also the colour and texture improved.

MICROBIAL TEST RESULT

Microbial test was conducted to check the shelf life of the product. It was done by using pour plating and

Microbial test was conducted to check the shelf life of the product. Pour plating method was used. Nutrient Agar was used to do the pour plating. The results were checked by Total Plate Counting of the microbial colonies.

RESULTS

NUTRIENT ANALYSIS OF THE DEVELOPED RECIPE

The nutrient analysis such as energy, carbohydrate, protein, fat, fibre and calcium were shown in table-2.

total plate counting of microbial colonies was checked after 24 hrs of the pour plating.

Plate-1 -Microbial Colonies



The result showed in *plate-1* that the microbial colonies present were only 2-3 which shows that the product can be stored for longer period of time and has a good shelf life.

DISCUSSION

Nutri-tarts were chosen as the product for this study because it scored very well on color, taste, appearance and texture. The product was made using various flours thus making it a multi grain product. A recent study by Paula Tighe *et al* showed a significant decrease in blood pressure when whole grain foods were consumed by CVD patients. Flax seeds were added which help in lowering cholesterol levels in the body. They are a good source of omega 3 fatty acids which are known to be heart friendly. Am Pan *et al* conducted a study in 2009 which showed lowering of blood lipid levels when flax seeds were administered in the diets of middle aged women. Bajra flour and oats add to the fibre content of the product. Brenda M Davy *et al* revealed that when oats were consumed in comparison with wheat flour altered LDL cholesterol. Thus tarts can be served as a snack

beneficial for CVD patients using variety of fillings. All these ingredients add to the health benefits and serve as a good snack option for people suffering from CVD.

CONCLUSION

Today people have become more aware of their health considering the rise in population suffering from health problems like CVD. In such scenario, this product modification has helped in attaining focus over modification of eating patterns of such people suffering from CVD. The product has proved to be beneficial for people suffering from CVD due to its various health benefits. Also this serves as a good snack option. The additional benefit includes that the product is baked which cuts down on the fat content and thus proves effective. So also people with CVD can relish on tasty snacks, but in a healthy way!

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