

STANDARDIZATION OF PROCESS FOR INCORPORATION OF PUMPKIN SEED POWDER, DRUMSTICK LEAVES POWDER IN CAKES AND COOKIES

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ABSTRACT:

To improve the nutritional status of all strata of people, it is necessary to enrich the diet with the locally available nutritionally valued ingredient and formulate healthy recipes to include in our day to day life. Understanding the impact of trends in both dining customs and eating patterns in today's society centers around healthy dining menus the study was carried out with incorporation of healthy ingredients like drumstick leaves and pumpkin seed powder in cakes and cookies and standardization of recipes was carried with hedonic rating scale. The incorporation of pumpkin seed and drumstick leaves powder ranges from 10 %, 15 % and 20% respectively. Cakes and cookies incorporated with 15% of drumstick leaves scored higher when compared with the reference sample.

INTRODUCTION :

The enrichment of food products is a consequential idea to treat explicit nutritional insufficiencies. Food enrichment also supports a better health in huma. The identification and evolution of fortifying agents that would guarantee good product quality and maximize the bioavailability of essential nutrients create technical and scientific challenges for the nutritionists

Moringa Oleifera is a very nutritionally benefits plants with number of health benefits including medicinal and nutritional benefits. The leaves of Moringa are rich in various phytochemicals and are also rich in protein,calcium, vitamin, iron ascorbic acid, and antioxidants.

Pumpkin (Curcubita maxima) it belongs to Cucurbitaceae family they are rich in β carotene, vitamins, minerals, and fibers. Pumpkin seeds have a great nutritional profile that benefits a variety of human health factors. Protein, vitamins, fat , and minerals are found to be high in pumpkin seeds which will aids to reduce the risk of chronic heart diseases. Because of their high moisture content, fresh pumpkins are very susceptible to attack by pathogenic microorganisms during the period between harvest and consumption

There is generally wastage in vegetables in the form of peels, seeds and other parts. So for this project, **pumpkin seed powder and drumstick leaf powder are incorporated for waste reduction nutrient incorporation basis**

Hence the present study is entitled on “**standardization of process for incorporation of pumpkin seed powder, drumstick leaves powder in cakes and cookies**” carried out with the following objectives,

- To formulate and standardise the cake and cookies with drumstick leaves powder and pumpkin seed powder.
- To evaluate organoleptically the cakes and cookies incorporated with drumstick leaves powder and pumpkin seed powder.

METHODOLOGY

The methodology followed for the present study, “**STANDARDIZATION OF PROCESS FOR INCORPORATION OF PUMPKIN SEED POWDER, DRUMSTICK LEAVES POWDER IN CAKES AND COOKIES**” was carried out under the following headings:

1. SELECTION OF RECIPES

Cakes and cookies are very popular bakery products all over the world. Among the different age groups, children like cakes and cookies because of their delicious taste and texture. Though they are very tasty, their nutritional value is very low. To overcome this problem this study was taken to improve the nutritional value of cakes and cookies by incorporating pumpkin seed powder and drumstick leaves powder.

2. SELECTION OF INGREDIENTS

One of the essential ingredient used for the preparation of cakes and cookies is refined wheat flour. It is a good source of energy and carbohydrate but lacks other essential nutrients like protein and fiber. Other ingredients include fat, sugar all acts as energy source and egg is a dense and good protein source.

Preparation of Powders

The pumpkin seeds and drumstick leaves were all dried properly by sun drying to remove off the moisture and kill the microbes. Then the dried seeds and leaves were ground to powder form and before incorporation they ought to be roasted to remove the raw flavour. The incorporated powders taken for the preparation were cleaned to remove part of the sand and dirt.

3. INCORPORATION OF POWDERS INTO CAKES AND COOKIES

Powdered pumpkin seeds and drumstick leaves were incorporated at the percentage of 10,15 and 20% incorporation into the preparation of standard cake and cookie preparation and labelled as C1,C2, C3 for cakes and B1, B2, B3 for cookies incorporated with pumpkin seed and drumstick leaves incorporated cakes and cookies asre named as C4,C5,C6 for cakes and B4,B5,B6 respectively.

TABLE 1 : Represents the level of incorporation of pumpkin seed powders in correct proportions in cakes and cookies

Table 1.1 CAKE incorporated with pumpkin seed powder

Ingredients	Standard (g)	C1 (10 % level)	C2 (15 % level)	C3 (20 % level)
Maida flour	100g	90g	85g	80g
Pumkin seed powder	-	10g	15g	20g
Baking powder	5g	5g	5g	5g
Sugar	80g	80g	80g	80g
Salt	2g	2g	2g	2g
Egg	2	2	2	2
Shortening	100g	100g	100g	100g

Table 1.2 COOKIES incorporated with pumpkin seed powder

Ingredients	Standard (g)	B1 (10%level)	B2 (15 %level)	B3 (20 % level)
Maida flour	100g	90g	85g	80g
Pumkin seed powder	-	10g	15g	20g
Baking powder	2g	2g	2g	2g
Sugar	50g	50g	50g	50g
Salt	5g	5g	5g	5g
Milk	10ml	10ml	10ml	10ml
Shortening	50g	50g	50g	50g

Table 1.3 CAKE incorporated with drumstick leaves powder

Ingredients	Standard (g)	C4 (10 % level)	C5 (15 % level)	C6 (20 % level)
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Maida flour	100g	90g	85g	80g
Drumstick leaves	-	10g	15g	20g
Baking powder	5g	5g	5g	5g
Sugar	80g	80g	80g	80g
Salt	2g	2g	2g	2g
Egg	2	2	2	2
Shortening	100g	100g	100g	100g

Table 1.2 COOKIES incorporated with drumstick leaves powder

Ingredients	Standard (g)	B4 (10%level)	B5 (15 %level)	B6 (20 % level)
Maida flour	100g	90g	85g	80g
drumstick leaves	-	10g	15g	20g
Baking powder	2g	2g	2g	2g
Sugar	50g	50g	50g	50g
Salt	5g	5g	5g	5g
Milk	10ml	10ml	10ml	10ml
Shortening	50g	50g	50g	50g

4. ORGANOLEPTIC EVALUATION OF VEGETABLE PEEL AND SEED POWDER INCORPORATED IN CAKES, MUFFINS AND COOKIES

Organoleptic evaluation is done to estimate the acceptability of the prepared pumpkin seed powder and drumstick leaves powder incorporated bakery products. The Numerical score card rating was used to sense the parameters like **Appearance, Colour, Flavor, Texture and Taste** of the cakes and cookies incorporated with pumpkin seed powder and drumstick leaves powder. Semitrained (taste) panel members were selected for the evaluation and the panelists were asked to assess the degree of liking for each sample and the scores obtained were tabulated.

5. COST ANALYSIS:

Current cost at the time of preparation of the raw ingredients in the wholesale commercial market was considered as basic cost. Fifty per cent of basic cost was added as overhead charges to this and considered to be the total cost as the production cost and the cost of all the standardized cakes and cookies were calculated.

RESULTS AND DISCUSSION

The Results and Discussion pertaining to the topic “**STANDARDIZATION OF PROCESS FOR INCORPORATION OF PUMPKIN SEED POWDER, DRUMSTICK LEAVES POWDER IN CAKES AND COOKIES**”, is discussed below

Formulation and sensory evaluation are important aspects for development, product improvement and optimization. Baking conditions as well as raw material properties affects the sensory characteristics of product. The study proves that the flavor, texture and appearance of cakes and cookies can be improved by incorporating drumstick leaves powder and pumpkin seed powder in varying proportions. Cake and cookies were prepared for acceptability trials. Among them acceptable and highly acceptable cake and cookies in each of the three forms were selected.

The acceptability level is evaluated by tabulation method. The result is explain below:

Pumpkin seed powder incorporated cake and cookies scored more marks in all aspects for Appearance, Colour, Flavor, Texture and Taste. All the three variations are acceptable in terms of appearance, texture, taste and flavour in cakes and cookies.

drumstick leaves powder was also acceptable but 20 percent variation had over flavour. But all the variations were highly acceptable in cakes. In cookies it was acceptable only up to 15%.

CONCLUSION

The main objective of the study is to formulate and standardise the cake and cookies with drumstick leaves powder and pumkin seed powder and to evaluate organoleptically the cakes and cookies incorporated with drumstick leaves powder and pumkin seed powder. There is generally wastage in vegetables in the form of peels, seeds and other parts. So for this project, **pumpkin seed powder is used as on waste reduction basis and drumstick leaf powder for nutrient incorporation purpose.** To conclude this study proves that the flavor, texture and appearance of cakes and cookies can be improved by incorporating drumstick leaves powder and pumpkin seed powder in varying proportions. Further researches can be worked on to develop a gluten free cakes and cookies hence which can be included by all conveniently .

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