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Development and sensory analysis of Traditional food products incorporated with poppy seeds

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Abstract

Poppy seeds (*Papaver somniferum*) are oilseeds power house of beneficial nutrients. These are also called *Amapola* (Spanish), *Khushkus* (Punjabi, Gujrati), *Posto* (Bengali) and *Postadana*, *Khushkus* (Hindi). These are used in bakery products mainly breads, rolls, and cookies, cakes and pastries preparation. It can also be used as a thickening agent and excellent binding agent. Poppy seeds are used for Ayurveda treatments for a wide range of conditions and therapies. In Indian traditional medicine (*Ayurveda*), poppy seeds are ground into a fine paste with milk and applied on the skin as a moisturizer. Poppy seeds have a natural supply of alkaloids which is extremely beneficial for treating nervous disorders also make a perfect remedy for curing insomnia as well as breast cancer, heart attack and other heart diseases. Poppy seeds significantly reduce the risk of heart attack and other heart diseases because it contains linoleic acid in adequate amount. Oleic acid (a mono unsaturated fatty acid), helps lower Low Density Lipoprotein (LDL) or "bad cholesterol" and increase High Density Lipoprotein (HDL) or "good cholesterol" levels in the blood. This present study is an attempt to made traditional products fortified with poppy seeds like Besan papadi and Potato papad which are beneficial for health besides this they also introduces our traditional foods. The products were standardized and served as control (T₀). Three treatments were given as T₁ T₂ and T₃ at level of 5, 10 and 15 percent for development of Potato papad and besan papadi. All the developed products were evaluated organoleptically using 9 Hedonic Scale (B. Srilakshmi, 2007) by a panel of 6 judges of the Department of Foods and Nutrition, BPS institute of higher learning, on the basis of colour, appearance, texture, taste, flavour and overall acceptability. The result of sensory analysis was found that the traditional food products like Potato papad and besan papadi was acceptable in all treatments as controlled.

Keywords: *Papaver somniferum*, *Amapola*, *Postadana*, *Khushkus*, *Ayurveda*, alkaloids, Potato papad and Besan papadi

1. Introduction

Poppy seeds, also known as *khushkus* gives a nutty, sweet, spicy, and pleasant flavour to any dish. Poppy seeds are nutritious oilseeds which are used as a condiment in cooking. These seeds are excellent source of B-complex vitamins such as thiamine, pantothenic acid, pyridoxine, riboflavin, niacin and folic acid. These are a rich source of omega-3 fatty acids and carbohydrates. Poppy seeds can help keep up body's energy levels. Poppy seeds are rich in iron and zinc that can help boost your immune system. Beside this these are rich source of fibre poppy seeds can help with your digestion and ease or prevent constipation. Incorporation of poppy seeds in the form of flour is easy to incorporate in value added products and it is more acceptable as compared to whole seeds.

Poppy seed oil contains oleic acid which inhibits the activity level of the gene, known for triggering breast cancer. Increased level of oleic acid present in the body lower the number of cancer cells in the affected areas. Excessive calcium deposits are known for creating certain types of kidney stones. Poppy seeds contain oxalates that reduce your calcium intake, thereby preventing the formation of kidney stones. The high amount of dietary fibre found in poppy seeds is useful for lowering cholesterol levels, regulating insulin and blood glucose concentrations, and promoting gastrointestinal health.

Poppy seeds are used in bakery products, on top of dishes, in fillings of cakes and in desserts and to produce edible oil. Poppy seeds are also used as poppy seed filling, which is a combination of ground poppy seeds, sugar, liquid (water or milk) and possible additional ingredients and spices.

The poppy seed filling is usually heat treated before use in the food preparation.

Poppy seed containing foods go through several processes before being served. In the case of bread, often whole, untreated poppy seeds are used mainly as decoration and no other treatment than baking takes place. In other foods, poppy seeds are commonly ground before adding on top of a dish or before using in bakery products (Poppy seeds are also used as poppy seed filling, which is a combination of ground poppy seeds, sugar, liquid (water or milk) and possible additional ingredients and spices. The poppy seed filling is usually heat treated before use in the food preparation.

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Poppy seeds oil has a high phosphorus content, which aids in the absorption of calcium into the bones, developed a simple preventative for osteoporosis. The extracts from the opium poppy have been used by man for pain relief (for at least 3500 years). Other parts of the plant, namely poppy seeds, have been used as food and to produce edible oil. Poppy seed oil is also used for pharmaceutical, cosmetic and technological purposes, besides food use as cooking oil and more recently as salad oil and dipping oil.

Objectives

Thus keeping in view this background, the present study will be undertaken to achieve the following objectives-

1. To develop value added products using processed poppy seeds
2. To study their organoleptic acceptability.

2. Materials and methods

The present study was carried out in the research laboratory of the Foods and Nutrition Department, BPS institute of higher

learning.

The research procedures to achieve the objectives have been described following

- a) White poppy seeds were purchased from the local market of Jind.
- b) The ingredients which were used in the products formulation incorporated with Poppy seeds were also obtained from the local market of Jind.

White poppy seeds having good physicochemical properties and nutritive value were selected for preparation of value added products. Poppy seeds were used for the development of nutritious Potato papad and besan papadi. The products were standardized and served as control (T_0). Three value addition treatments i.e. incorporation with poppy seeds at different percentages was referred as T_1 , T_2 and T_3 treatments respectively for development of Potato papad, and Besan papadi. Bengal gram flour and potato paste was incorporated with poppy seeds and utilized for preparing products. Treatment T_1 was incorporation of poppy seeds at 5 percent level with 95 percent main ingredient. Treatment T_2 was incorporation of poppy seeds at 10 percent level with 90 percent main ingredient. Treatment T_3 was incorporation of poppy seeds at 15 percent level with 85 percent main ingredient.

Organoleptic evaluation

The developed products were evaluated organoleptically using 9 Hedonic Scale by a panel of 6 judges of the Department of Foods and Nutrition, BPS institute of higher learning, on the basis of Colour and appearance, Texture, Taste, Flavour and overall acceptability.

Calculation of Nutritive Value of the products

The protein, crude fibre, fat, carbohydrate and energy of the products were calculated by using the value obtained by analysis of Poppy seeds by the value of the raw ingredient used as given by. The data obtained from sensory evaluation were statistically analyzed by using mean.

3. Results and discussion

Organoleptic evaluation of products

Table 1: Organoleptic acceptability of Potato papad incorporated with poppy seeds

Treatment	Colour	Appearance	Aroma	Texture	Taste	Mean
T_0	7.3	7.3	7.7	7.7	7.5	7.5
T_1	6.8	6.7	6.8	6.7	6.7	7.2
T_2	6.7	6.5	6.5	6.8	6.5	7
T_3	6	6.5	7	7.1	6.6	6.6

Control (T_0): 100% boiled Potato paste

Treatment (T_1): 95% boiled Potato paste + 5% Poppy seed

Treatment (T_2): 90% boiled Potato paste + 10% Poppy seed

Treatment (T_3): 85% boiled Potato paste + 15 % Poppy seed

So, it can be concluded from the result that regarding the

overall acceptability of potato papad the treatments T_0 without incorporation of poppy seeds and T_1 at 5 % with incorporation of poppy seeds were desirable and after that T_2 and T_3 incorporation of poppy seeds were liked slightly desirable by all the panel members.



Control (T₀)



Treatment (T₁)



Treatment (T₂)



Treatment (T₃)

Table 2: Organoleptic acceptability of Besan papadi incorporated with poppy seeds

Treatment	Colour	Appearance	Aroma	Texture	Taste	Mean
T ₀	7.5	7.8	8	7.5	7.5	7.7
T ₁	7.2	6.8	6.8	6.7	7.5	7.0
T ₂	7.0	6.4	7.2	7.2	6.8	6.9
T ₃	6.7	6.6	6.3	6.6	6.8	6.6

Control (T₀): 100% Bengal gram flour

Treatment (T₁): 95% Bengal gram flour + 5% Poppy seed

Treatment (T₂): 90% Bengal gram flour + 10% Poppy seed

It is quite obvious from the results that besan papadi was most

acceptable at control level (T₀). Besan papadi brought down the score of colour, appearance, aroma, texture and taste incorporated with poppy seeds as compare to control.



Control (T₀)



Treatment (T₁)



Treatment (T₂)



Treatment (T₃)

4. Conclusion

Nutritious products (Potato papad and besan papadi) were successfully prepared incorporation with poppy seeds in boiled potato and Bengal gram flour. Sensory evaluation of the prepared products were indicated that treatment T₀ (control) was liked more than others (T₁, T₂, T₃). T₁ incorporation of poppy seeds at 5 percent level with 95 percent main ingredient (boiled potato and besan) was liked desirable. Besan papadi and Potato papad were acceptable the other treatments were also acceptable. The amount of the nutrients like Fat, Iron, Calcium, Energy, Fibre, and Protein was increased by the incorporation of poppy seeds. but carbohydrate content in besan papadi decreased in all treatments (T₁, T₂, T₃) then control (T₀) because poppy seeds have less content of carbohydrates as compare to cereals, but increased in potato papad.

5. References

1. Rahimi A, Arslan N, Rezaeieh KAP. 2015. Online Journal of search.proquest.com
2. Rahimi A, Arslan N, Rezaeieh KAP. Variation in Fatty Acid Composition of Four Turkish Registered Poppy (*Papaver somniferum* L.) Seeds in two Locations (Ankara and Boldavin) of Turkey. 2015. Online Journal of search.proquest.com
3. Šerá B, Gajdová I, Šerý M. [PDF] from hfcas.ac.cn new physicochemical treatment method of poppy seeds for agriculture and food industries. 2013. iopscience.iop.org
4. Bhavyajyoti Chilukot. Top 8 health benefits of khus khus or poppy seeds | Read, 2014. www.thehealthsite.com/.../top-8-health-...
5. Duke James A. Culinary Poppy- Vegetable Reaserch & Extension Centre, 1983. <http://agsyst.wsu.edu/culinarypoppy.html> Deepmala Bhattacharya (2014) healthland.time.com/.../scientists-identify-opium-poppy-genes-that-make...
6. Lachenmeier DW. Poppy seed foods and opiate drug testing--where are we today, 2010. NCBI www.ncbi.nlm.nih.gov/.../19901868
7. Docharmony. The amazing health benefits that you can reap from, 2013. www.naturalnews.com/042001_health.
8. Muehler DM, Debregeas GF, Karczmar GS, Eng PJ. Nature, 2000. nature.com
9. Jawień E, Ząbek A, Deja S, Łukaszewicz M. 1H NMR-Based Metabolic Profiling for Evaluating Poppy Seed Rancidity and Brewing, 2015. Cellular and Molecular degruyter.com.
10. Emily Upton. Can Eating Poppy Seeds Really Cause You to Fail a Drug, 2014. www.todayifoundout.com/poppy-se.
11. Epicenter. 2013. <http://theepicentre.com/spice/poppy-seed>, Europeon Food Safety, 2015. [PDF] Scientific Opinion on the risks for public health related to the. www.efsa.europa.eu/sites/default/files/scientific_output/files/.../2405.pdf
12. Erowid. Poppy Seeds and Drug Tests, 1995-2016. <https://www.erowid.org/.../poppy/popp...>
13. Fundak. Poppy Seeds- only Foods, 2015. www.onlyfoods.net >poppy-seed
14. Foodofy. Poppy Seeds Nutrition Facts - Health Benefits, Nutritional, 2015. www.foodofy.com/poppy-seeds.html
15. Das G. Drug Testing for...Poppy Seeds? NIDA for Teens, 2013. teens.drugabuse.gov/.../drug-testing-po. Journal of Advanced Research in Computer Science, search.proquest.com
16. Goutm Das. Cuckoo Search based Softcomputing