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To Nutritional Profile of Dietary Fibre Pizza Base and Sensory Evaluation of Develop Product

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Abstract: ***As a safety, health and nutrition become more important and the regulatory mechanism has become more stringent the nutritional quality assumes significance. There is a distinct shift from consumption of so called junk foods to health foods. The role of dietary fiber in offering protection against diabetes and heart disease is well established for this reason interest has arisen in increasing fiber in the diet. Fiber offers manifold health benefits particularly to diabetics by lowering blood sugar levels, reducing insulin requirement. Improving glycaemic control and lowering serum cholesterol and triglyceride values in diabetic individuals. During flate bread, different ingredients are used to ensure the development of a continuous dietary fibre network that is essential for flate bread quality. Interests in incorporating bio active ingredients such as dietary fiber (DF) and antioxidants properties into popular foods such as flate bread have grown rapidly, due to the increased consumer health awareness.***

Fenugreek leaves are enriched with mineral like potassium , calcium, and iron , vitamin c. Fenugreek leaves are a rich source of soluble dietary fibre content and it is used in functional food , traditional food , Nutraceutical as well as in in physiological utilization such as anticancer, antibacterial, antiulcer, antithelminitic and anti-diabetic agent.

Lotus-stem is high in dietary fibre and highly recommended for pregnant women.

The present study was conducted to provide a vegetable rich source dietary fibre such as Nelumbo Nucifera (lotus stem) or Fenugreek- leaves (Trigonella foenum -gracum) act as helpful in a natural fortified food item for making pizza base .which are converted to healthy functional food.It can be proved to be healthy dietary fibre pizza for children, Type 2 Diabetes patient or other life style diseases to keep the digestive system healthy.

The dietary fibre pizza base (flatbread) is developed by taking wheat flour and different percentage of fenugreek leaves and lotus stem and are mixed up and fermented and bakery yeast and then taken (8-10 minutes in the oven at 200℃of the different sample and enriched dietary fibre pizza base. Develop product was evaluated on the various parameter, sensory evaluation & Nutritional analysis .sensory evaluation of prepared product was carried out using 9 pointhedonic scales out of the four. Hence highest acceptable product was put forth for nutritional analysis & percentage of dietary fibre respective.

Keywords: Enriched Dietary Fibre Pizza Base, Fenugreek Leaves, Lotus Stem Nutritional Analysis. Sensory Evaluation.

I. INTRODUCTION

Pizza is a **flatbread** generally topped with tomato sauce and cheese and baked in an oven. It commonly topped with a selected of meats, vegetables, and condiments. Pizza is a value added item made from flour. Amongst processed cereal products in India. Pizza as a, fast food is unhealthy, hunger satisfying food, which is easy to make and easy to consume. Pizza contains a high level of refined sugar, white flour, polyunsaturated fats, salts and numerous food additives but lacking in protein, vitamin, and fibres. Pizza is popular snake's food because of their simplicity of manufacture, consumption and good taste.

The role of dietary fibre in offering protection against diabetes and heart disease is well established for this reason interest has arisen in increasing fibre in the diet. Fenugreek is endospermic(**CFTRI, K SHRINIVASAN,2006)** Dietary choice and medicinal herbs remain the basis for maintaining a healthy lifestyle and well-being, especially relating to chronic diseases, which include cancer, cardiovascular diseases (CVDs) and diabetes, despite the remarkable advances in medicine and combinatorial drug development.
Fenugreek leaves are enriched with minerals like potassium, calcium, and iron. Fresh leaves comprise 3 to 5% of protein. Fenugreek leaves are enriched with Vitamin C. The Vitamin K from fenugreek greens is comparable to spinach. This fenugreek leaf is highly beneficial for treating poor liver functions and dyspepsia. It is also helpful in treating gastric problems and other intestinal issues.
Lotus stem is high in dietary fibre and highly recommended for pregnant women. The fibre in lotus stem is useful to keep the digestive system healthy.
Researcher reports revealed that Lotus stem was found to be an excellent source of protein and vitamin C, while it is a good source of fiber and Iron. As compared to the available literature, the carbohydrate content of lotus stem (13.4 g) found to be low compared to root (17.2 g). Lotus stem is a rich source of protein (14.6 g) when compared to root (2.6 g).
Pizza is a value added item made from flour. Amongst processed cereal products in India, pizza.

II. MATERIALS AND METHODS

Fresh fenugreek leaves and lotus stem (Kamal kakadi) were taken for the nutritional enrichment of pizza base.

Processing of Fenugreek Leaves

The fresh fenugreek leaves (kashuri methi) were processed to remove dirt and other field damaged portion. The clean and fresh fenugreek leaves were separate the leaves from the stem and chop them the fenugreek leaves were washed in water to remove the send from the leaves. Then water was drained and fenugreek leaves were spread in trays and dried in a sun up to 0.86gm moisture level. It has set aside for two days and make the to get dried at room temperature

Processing of Lotus Stem

The fresh lotus stem (Kamal kakadi) were processed to remove dirt and other field damaged portion. The clean and fresh lotus stem were chopped into small pieces with a knife and blanched in hot water at 100°C for three minutes containing 2% salt.Then water was drained and lotus stem were spread in trays and dried in a sun up to 5-10% moisture level at 33±2°C for 9 hours. After cooling to room temperature, the dried mushrooms were ground into powder in a grinder then they were sieved and packaged in polythene bags and stored at room temperature for further use in the preparation of pizza base.

Product Development

Treatment for the Preparation of Vegetable Dietary Fibre

T_1- Whole wheat flour + 10% fenugreek leaves+10%lotus stem
T_2- Whole wheat flour + 15% fenugreek leaves +10%lotus stem
T_3 whole wheat flour+20% lotus stem +15% fenugreek leaves
T_4- Whole wheat flour (Control

Pizza Making Procedure

The enrichment of dietary fibre pizza base was prepared by mixing the whole wheat flour with a specified amount of fenugreek leaves powder or lotus stem powder yeast sugar and salt olive oil as mentioned in the treatments. Take part (1/10th of total requirement) of lukewarm water. Add a part (about 1/5th of total requirement) of sugar in it. Add the crumbled yeast and allow to rest aside (for about 5 to 10 min.) till it disintegrates and starts to float on the water. Add sufficient flour to make a thin paste and whisk it to incorporate some air. Leave it for 10 to 15 min. during which the paste will arise that helps in vigorous yeast action. Dissolve salt and left over sugar in remaining water and strain to remove extraneous matter. Add this water in to flour, roughly mix, add the yeast– paste and knead well to prepare a smooth dough. Add shortening at the last stage of mixing and made the clear dough. Cover the dough with wet cloth and keep it aside for a stipulated time at 26.6℃ (800℉) and 75 Rh. for bulk fermentation. Press out the gas produced after 2/3 of bulk fermentation time. That is known as knock back. Divide the dough in to 100g pieces, round and relax for 10 to 15 min. Sheet each piece into round shape like a chapatti of 0.5 to 1.0 cm (1/4 to ½") thickness, 12 to 14 cm (5 to 6") diameter, place on a baking sheet and dock with a fork. Allow proofing for 15 to 20 min with baking temperature (250℃), time (8-10) and diameter (15-18 cm.) in such a way that bottom gets light brown colour and top surface remains almost white or slightly brownish.

Organoleptic evolution of enrichment vegetable dietary fibre pizza base was carried out by a panel of teachers. The organoleptic characters *viz.*, colour and appearance, texture, taste and overall acceptability of dried fenugreek leaves or lotus stem and enrichment of pizza base, whereas colour and appearance, texture, taste and overall acceptability of dietary fibre pizza base were evaluated on five points hedonic scale (Ranganna, 1986). The mean score given by judges were used for statistical analysis.

III. RESULT AND DISCUSSION

Present investigation was conducted with the objective to develop dietary fiber pizza base by incorporating fenugreek leaves and Lotus stem, their standardization and assessment of organoleptic, bio-chemical, functional, textural parameters and storage stability of the accepted as compare to control pizza base

Acceptability Studies

All the experimental pizza bases prepared from different formulations were organoleptically evaluated after 8 hr. by a panel of 15 trained judges, using a 9-point hedonic scale (Amerin et al., 1965). For the assessment of pizza base quality crust colour, crumb colour, crumb taste, crumb aromas, crumb elasticity, over acceptability characteristics were selected.

The results are expressed in terms of average acceptability scores.

TABLE 1. Organoleptic Evaluation of Dietary Fibre Pizza Base for Flavour and Taste, Body and Texture and Colour and Appearance

Treatment	Flavour and Taste	Body and Texture	Colour and Appearance	Overall Acceptability
T_1- Whole wheat flour + 10% fenugreek leaves+10%lotus stem	43	32	33	33
T_2- Whole wheat flour + 15% fenugreek leaves +10%lotus stem	43	30	31	31
T_3 whole wheat flour+20% lotus stem+15% fenugreek leaves	35	31	30	29
T_4- Whole wheat flour (Control)	44	31	29	30

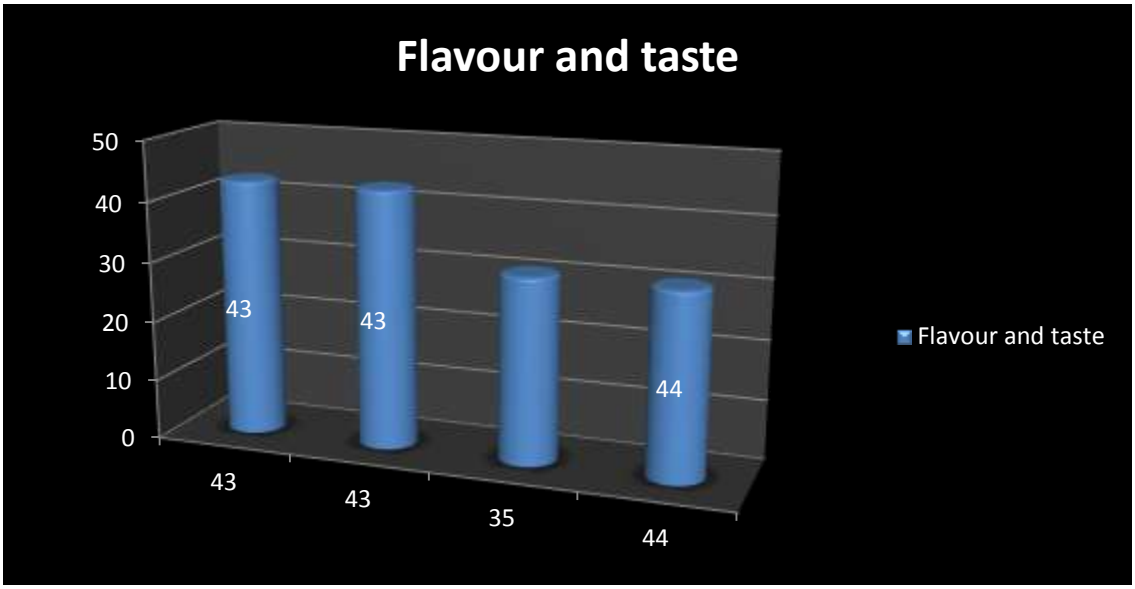

Fig.1: Graphical Representation- Flavour and Taste

*From the above graph it shows that the Sample T1, T2, and T4 are most accepted among the panalist members and it gets the highest scoring, then after sample T3 sample respectively.

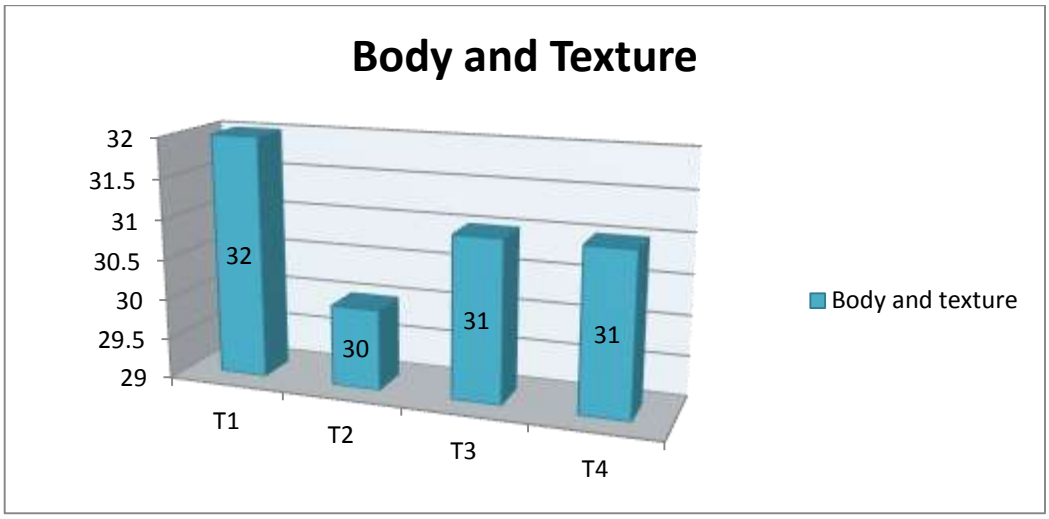

Fig: 2 Graphical Representation: Body and Texture

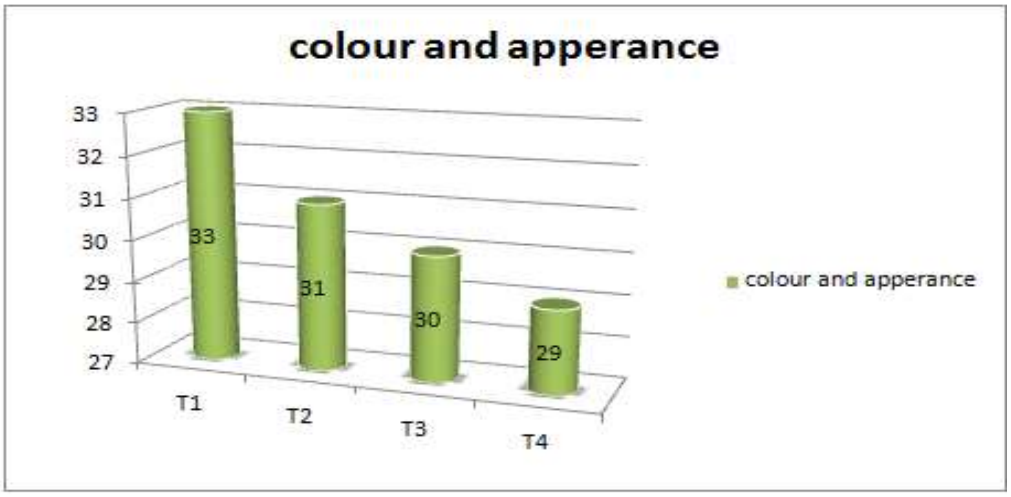

Fig: 3 Graphical Representation: Colour and Appearance

*From the above graph it shows that the sample T1 is most accepted in terms of colour and appearance among the sensory panellist members and it gets the highest scoring, then after sample T3 and T4 respectively.

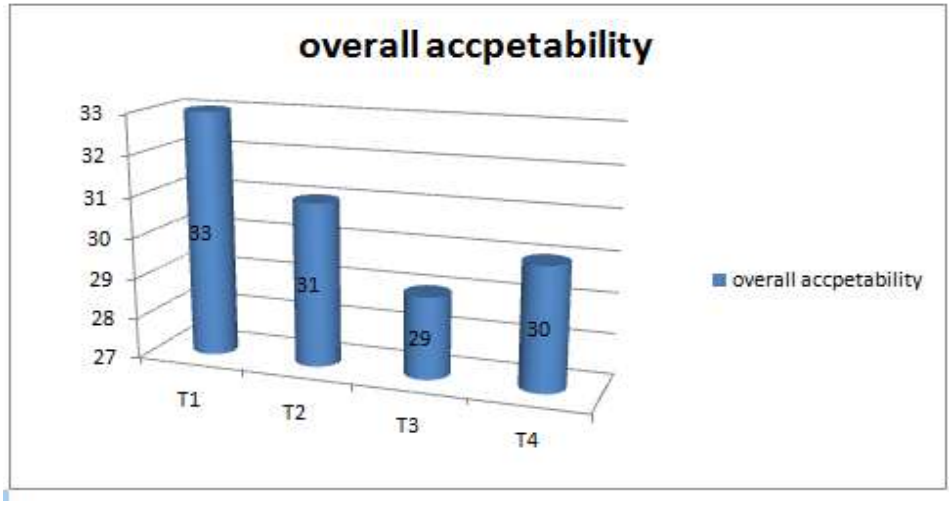

Fig: 4 Graphical Representation: Overall Acceptability

*From the above graph it shows that the sample T1 is most accepted overall among the sensory panellist members and it gets the highest scoring, then after sample T2 and T3, T4 respectively. The overall quality of noodle with 15% Dietary fibre pizza base was the most acceptable in all the parameters of quality.

IV. SUMMARY AND CONCLUSION

Dietary fibre percentage in dietary fibre pizza base was higher (3.62%) as compared to refined wheat flour pizza (2.3) in 100 gm sample weight. From the above observations, it can be concluded that acceptable pizza base can be prepared by replacing wheat flour. With fresh fenugreek leaves /Lotus stem nutritional Enrichment to serve as a snack for all the age.It is strongly recommended that dietary fibre pizza base could be prepared by fresh Fenugreek leaves/lotus stem at the level of 20% with good overall acceptability as wells enhanced dietary fibre.

V. RECOMMENDATIONS AND SUGGESTION

- Dietary fibre pizza should be advertised among the community.
- The dietary fibre pizza base should be given to life style diseases and to see health benefit for it.
- It is also good for type 2 diabetes patients, constipation and other life style diseases a good amount of protein and dietary fibres.
- It should be used daily to overcome deficiency of nutrients

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