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“A STUDY ON INCORPORATION OF MILLETS BASED DOUGH NUT AND PIZZA BASE MIX”

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Abstract:

The doughnut and pizza are one of the most popular food all over the world. The millets based doughnut and pizza can be a healthy snack for all people and it is rich in protein and dietary fiber. Millet based Doughnut can be a healthy pastry for children and they enjoy to eat it. By this way we can reduce the usage of refined wheat flour (Maida) . It is made by using little millet flour, sorghum millet flour, barnyard millet flour and wheat flour. It can be stored in room temperature for two months without any artificial preservatives. The sensory properties, nutritional composition and cost calculation of millets based doughnut and pizza mix were determined. Millets have so much of nutritional and health benefits.

Key words: Doughnut, pizza base, Sensory Properties, Sorghum millet flour, Barnyard millet flour.

INTRODUCTION:

A doughnut is a kind of food made from fermented fried dough. It is a well liked dessert in most of the states and is prepared in various forms as a sweet bite. It can be handmade or bought in markets. Pizza is normally prepared by using lean yeast-leavened bread dough that is cooked and topped in same way that French and middle eastern breads are made. Commercial interest in pizza, which is traditionally consumed by people of Europe and Italy, has now made its way into India. Experimenting with the taste buds has always been the process of food lovers in India

Millets play the role of dominant foods in many lagging countries because of their unique potential to grow under conflicting weather conditions like little rainfall. Millets have minor significance in western countries but a stable food in the diets of African and Asian people. Majority of the millets are grown in dissimilar parts of

the world. The global yield of millet grain was 762712 metric tons and India top the ranking with a production of 334500 tons in 2010.

Millets are unique because they are rich in protein, calcium, dietary fiber and polyphenols. It is identified that millets contain remarkable amount of sulphur containing essential amino acids like methionine and Cysteine

Millets have received attentiveness for their possible role as useful foods due to health promotive phytochemicals. Millets are safe for people suffering from gluten allergy and celiac disease. They are non-acid forming and non-allergenic hence they can be easily digested. In addition to their nutritional worth, several possible health benefits such as avoiding cancer and cardiovascular sickness, reducing tumor occurrence, lowering blood pressure, risk of heart sickness, cholesterol and rate of fat absorption, detaining gastric emptying, and providing gastrointestinal bulk has been reported for millets

Based on the health benefits, nutritional significance of millets, the project study is proposed to develop millets based donut & pizza base mix . In order to decrease the consumption of refined wheat flour (Maida) which is a major factor for the prevalence of degenerative disease.

The project is proposed with the following objectives:

- To develop donut & pizza base mix with little millet flour, sorghum flour, barnyard millet flour and wheat flour.
- To optimise the ratio of millets and develop donut & pizza with the addition of millets
- To analyse the sensory attributes of the developed donut & pizza.
- To analyse the proximate composition of the developed donut & pizza base mix.
- To estimate the shelf life, cost calculation and labelling

SELECTION OF INGREDIENTS:

The ingredients used to prepare doughnut and pizza mix are wheat, sorghum, barnyard and little millets. Wheat, sorghum, barnyard and little millets were purchased from the palamuthir nilayam in peelamedu in Coimbatore which are cleaned and properly stored.

PROCESSING OF INGREDIENTS:

Little millet, sorghum millet, barnyard millet were cleaned, washed and further sun dried for 1 day and it is milled in the flour mill. Then the flour mixture is ready to use.

STANDARDISATION OF MILLETS BASED DONUT & PIZZA BASE MIX

TABLE-1

INGREDIENTS	VARIATION -1	VARIATION -2	VARIATION -3	VARIATION -4	VARIATION - 5
Little millet flour	5	10	15	20	25
Sorghum millet flour	5	10	15	20	25
Barnyard millet flour	5	10	15	20	25
Wheat flour	85	70	55	40	25
Total	100	100	100	100	100

In the study, the different proportion of little millet flour, sorghum millet flour, barnyard millet flour and wheat flour are incorporated in the developed millets based doughnut & pizza base mix in the proportion of 5:5:5:85(V₁), 10:10:10:70 (V₂), 15:15:15:55 (V₃), 20:20:20:40 (V₄), 25:25:25:25 (V₅). The control is made from refined wheat flour.

SENSORY EVALUATIONS OF CONTROL AND DEVELOPED MILLET DOUGH NUT AND PIZZA

The developed and formulated millets based doughnut and pizza are assessed by 15 semi -practiced panel members using 5-point hedonic scale.

DEVELOPED MILLETS BASED DOUGH NUT

TABLE-2

CRITERIA	CONTROL	VARIATION 1	VARIATION 2	VARIATION 3	VARIATION 4	VARIATION ON 5
APPEARANCE	4.46±0.86	4.466±0.707	4.53±0.925	4.26±0.925	4.2±0.8	4.38±0.801
COLOUR	4.2±0.77	3.933±0.707	4.8±0.925	4.26±0.755	4±0.755	4±0.376
TASTE	4.06±0.88	3.733±0.755	4.4±0.755	3.93±0.801	3.4±1.03	4.06±1.281
TEXTURE	4.06±0.96	3.733±0.707	4.4±0.925	4±0.925	3.46±0.844	3.8±0.963

OVERALL ACCEPTABILITY	4.2±0.676	3.86±0.376	4.53±0.755	3.866±0.844	3.66±0.707	3.8±0.707
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DEVELOPED MILLETS BASED PIZZA

TABLE-3

CRITERIA	CONTROL	VARIATION 1	VARIATION 2	VARIATION 3	VARIATION 4	VARIATION 5
APPEARANCE	4.73±0.45	4.8±0.414	4.8±0.351	4.5±0.833	4.6±0.736	4.3±1.11
COLOUR	4.1±0.65	4.4±0.632	4.5±0.636	3.6±1.046	3.73±0.703	3.4±0.985
TASTE	4±0.53	4.06±0.593	4.3±0.723	3.3±0.617	3.13±0.743	3.13±0.639
TEXTURE	4±0.65	4.2±0.703	4.3±0.723	3.7±0.573	3.46±0.636	3.4±0.828
OVERALL ACCEPTABILITY	4.13±0.351	4.4±0.507	4.6±0.507	3.7±0.457	3.6±0.507	3.3±0.723

PHYSIO-CHEMICAL ANALYSIS OF CONTROL AND DEVELOPED MILLETS BASED DOUGHNUT & PIZZA BASE MIX

The physio chemical analytic constituents such as ash, moisture were carried out using standard procedure for the millets based doughnut & pizza base mix

ASH

The ash value of millets based doughnut and pizza base mix is given in table-

TABLE-4

CRITERIA	CONTROL	SAMPLE
ASH	18.2	13.4

The ash content of the control and sample (18.2 & 13.4). The experiment millet based doughnut and pizza base mix (variation II) has got the lesser score of ash value when compare with control.

MOISTURE

The moisture value of millets based doughnut and pizza base mix is given in table-

TABLE-5

CRITERIA	CONTROL (%)	SAMPLE (%)
MOISTURE	7.6%	4.6%

The ash content of the control and sample (7.6% & 4.6%). The experiment millet based doughnut and pizza base mix (variation II) has got the lesser score of ash value when compare with control. Low moisture content is required for shelf life of the food product, and low levels of moisture in food products will enhance the nutrients.

ESTIMATION OF PROXIMATE OF CONTROL AND MILLETS BASED DOUGHNUT AND PIZZA BASE MIX

The proximate analysis includes nutrients like energy, carbohydrate, protein, fat and fiber are analysed for control and sample by using standard procedures which is mentioned in appendix. The result of analysis is given in the table

TABLE-8

CRITERIA	SAMPLE
ENERGY (kcal)	337.1
CARBOHYDRATE (g)	70.16
PROTEIN (g)	10
FAT (g)	1.84
FIBRE (g)	10.7

From the above table, it was clear that the formulated millets based doughnut and pizza base mix contain high nutritional values like more amount of protein and fibre.

PACKAGING OF MILLETS BASED DOUGHNUT AND PIZZA BASE MIX

Packaging confirms the protection of the food product that can be supplied in the market for the reason of sale, trade, storage, usage, etc., Normally it refers to the process of designing, assessing and manufacturing the packages. The formulated millet mix has been packed in an air tight manner such a way that ensures the shelf life of the product.

FIGURE-1



COST ANALYSIS OF THE DEVELOPED MILLETS BASED DOUGH NUT AND PIZZA BASE MIX

The production cost of the 100g of ingredients in millets based doughnut and pizza base mix is displayed in the following table;

INGREDIENT	AMOUNT
WHEAT FLOUR	3.85
SORGHUM MILLET	0.85
LITTLE MILLET	1.49
BARNYARD MILLET	1.45
TOTAL	7.64

Raw Material count = Rs 7.64

Overhead charges = Rs 3.056

Total cost = 7.64 + 3.056 = 11

The cost of the millets based doughnut & pizza base mix is 11 rupees

The cost calculation of the product includes raw material cost, processing cost and other expenses. The total cost of the formulated millets based doughnut & pizza base mix is Rs 11.

SUMMARY AND CONCLUSION

Doughnut is one type of a pastry which is consumed by people living all over the world. Doughnut and pizza are liked by children, adult and elderly people. The millets based doughnut and pizza are healthy and they are rich in protein and dietary fiber.

Millets provide a distinctive advantage for health because it is rich in micronutrients, minerals, B vitamins and nutraceuticals.

The millets based doughnut and pizza are rich in protein, dietary fibre and calcium. The millets also contains remarkable amount of sulphur containing essential amino acids like methionine and Cysteine. The major objective of the study is to formulate and develop, millets based doughnut and pizza base mix. In this five variations sensory evaluation were evaluated and their nutritive value, cost and quality analysis of the formulated millets based doughnut and pizza base mix were calculated.

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