Development of Therapeutic Flour and Prepare Standardized Recipe

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Abstract: *Therapeutic flour is developed by the mixing of rice bran, chickpea peel and whole wheat flour in different ratio(s) and better results obtained in the ratio(s) of rice bran, chickpea peel and whole wheat flour in 10:10:80 in the development of therapeutic flour and prepare recipes by using therapeutic flour and test characteristics supported by the hedonic scale. One major products were developed using different composite flour i.e. therapeutic flour chilla, (rice bran+chickpea peel+ wheat flour) . Developed product was evaluated on various parameters: sensory evaluation & nutritional analysis. Sensory evaluation of prepared product was carried out using 9 point hedonic scale.*

Keywords: Therapeutic flour, rice bran, chickpea peel, whole wheat flour

1. Introduction

Survey of literature reveals that rice bran, for us various health benefits due to content of antioxidants vitamin A, vitamin E, B vitamins, and essential fatty acids. Rice bran's antioxidants work through different processes to result in positive effects on the biological system. **Rice bran** is a highly nutritious compound as it is rich source of oryzanols, tocopherols, tocotrienols, phytosterols, and dietary fibers. **Chickpea peel** is the high protein content, making it an ideal option for vegetarians who want to ensure they have proper nutrient intake full of protein, fiber and iron, and makes a healthy and colorful addition to any meal. Beneficial for **Diabetic Management,** Blood sugar management, & soon.

Whole wheat flour is rich in catalytic elements, minerals salts, Calcium, Magnesium, Potassium, Zinc, Iodine, Copper, Vitamin B and Vitamin E. it can help control blood sugar, lower,, obesity.LDL or "bad" cholesterol, and reduce colon cancer risk**.** In the era of increasing diseases among people, foods are required for better nutritional management. While considering the nutritional management staple foods play an important role in our day to day life. Now a days fortified flours and blended flours are available in the market. But demand of supply needed more search to fulfill the requirement of people the present study is a noble steps to meet out this problem and also provide better nutritional management or for curing health hazards.

2. Material & Method

The present study was conducted in laboratory of Food Science & Technology and RFRAC, Lucknow. The sample was consist of Rice bran, chickpea peel & wheat flour.

The sampling is given below,

Ingredient	Sample 1 (10%)	Sample 2 (15%)	Sample 3 (20%)	Sample (control)
T1	10gm	10gm	15gm	100gm
T2	10gm	20gm	20gm	-
T3	80gm	70gm	65gm	-

Where, T1= Rice Bran, T2=.Chickpea Peel, T3= Wheat Flour

Preparation of therapeutic flour blend with Rice bran, chickpea peel, wheat flour

Tools- Rice bran, chickpea peel, and whole wheat, Weighing machine, Meeling machine, Container , etc

Technique
The develop therapeutic flour was developed using different ratio, of Rice Bran, Chickpea Peel & Wheat Flour.Rice Bran, Chickpea Peel & Wheat were taken for nutritional enrichment of Therapeutic flour. Rice Bran were separated from the whole rice, washed thoroughly and drained. Wheat were washed and tops as well as bran were removed and drained. So immediately food processor. The preparation of three different variation of one flour product for experiment by Rice bran, chickpea peel and whole wheat flour combination**.**

Figure: Flow chart for the manufacturing of therapeutic flour.

Preparation of Experiment
This phase mainly deals with the preparation of three different variation of one flour product for experiment by Rice bran, chickpea peel and whole wheat flour combinations.

Tools- Rice bran, chickpea peel, and whole wheat, Weighing machine, Meeling machine, Container , etc.

Product Development

Treatment for the preparation of therapeutic flour chilla
T_1- Whole wheat flour + 5% Rice bran+ 5% chickpea peel
T_2- Whole wheat flour +5% Rice bran +10 chickpea peel
T_3- Whole wheat flour (Control)

Chilla making procedure-
Flow chart
The preparation of three different variation of one flour product for experiment by Rice bran, chickpea peel and whole wheat flour combination**.**

Figure: Flow chart of making chilla

3. Result

Sensory evaluation
Sensory evaluation of therapeutic flour was done by the 5 member panellist.

Ratio of ingredients for three samples are taken in different ways-

Table: Ratio of Ingredients

Treatments	Sample preparation	Ratio of Ingredients
T_1	Rice bran + chickpea peel + whole wheat flour	10:10:80
T_2	Rice bran + chickpea peel + whole wheat flour	5:10:85
T3	Rice bran + chickpea peel + whole wheat flour	20:30:50

Parameter 1- Flavour and Taste

Table- Individual markings for flavour and taste

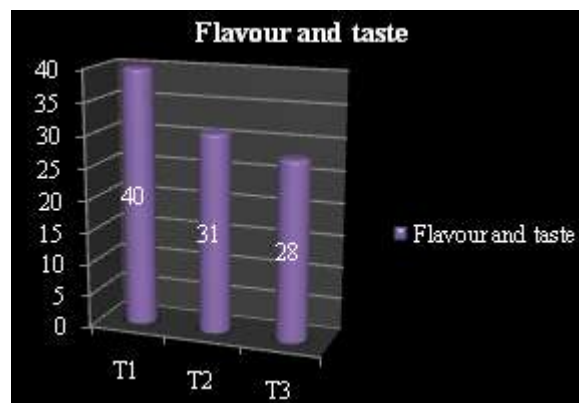| Members	T1	T2	T3
1	9	7	5
2	8	6	6
3	8	6	5
4	7	6	6
5	8	6	6
Total	40	31	28

Figure: Graphical Representation- Flavour and Taste

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

Parameter 2: Body and Texture

Table: Individual Markings- Body and Texture

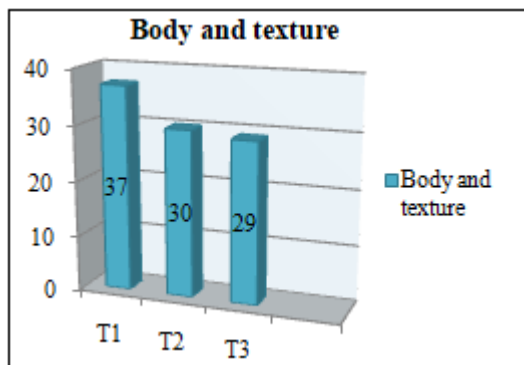| Members	T1	T2	T3
1	7	7	6
2	7	6	6
3	7	6	6
4	8	6	6
5	8	5	5
Total	37	30	29

Figure: Graphical Representation- Body and texture

From the above graph it shows that the sample T1 is most accepted among the panalist members and it get highest scoring, then after sample T2 and sample T3 respectively

Parameter 3: Colour and Appearance

Table: Individual markings- Colour and Appearance

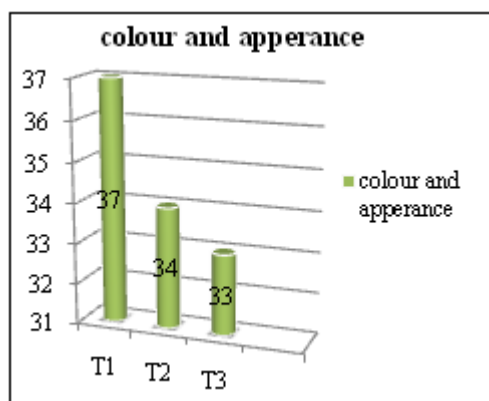| Members	T1	T2	T3
1	7	7	5
2	8	7	8
3	7	7	7
4	7	6	7
5	8	7	6
Total	37	34	33

Figure 28: Graphical Representation- Colour and apperance

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 highest scoring, then after sample T1 and T2 respectively

Parameter4- Overall Acceptability

Table: Individual Markings- Overall Acceptability

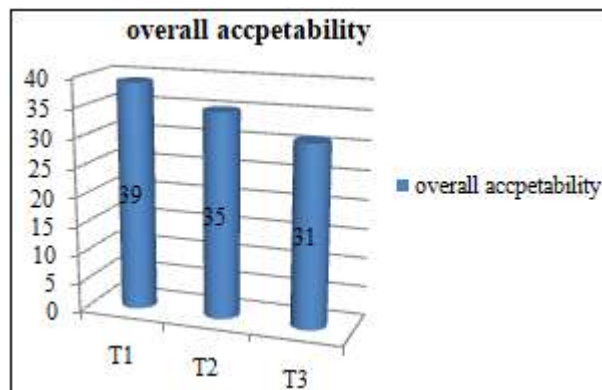| Members	T1	T2	T3
1	8	7	5
2	8	8	7
3	8	8	8
4	7	5	5
5	8	7	6
Total	39	35	31

Figure: 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 highest scoring, then after sample T2 and T3 respectively.

The overall quality of therapeutic flour with 10% Rice bran & 10% chickpea peel & 80% wheat flour   was the most acceptable in all the parameters of quality.

Parameter 5 -Overall Calculation
Overall calculation are done to know most acceptability of the product in all terms of quality by sensory evaluation scoring given by the panellist members, in this all scoring of texture, colour, flavour and taste are calculated in the table, by this we get do statistical analysis and obtained standard deviation, average and other calculations.

Table: Overall Calculation

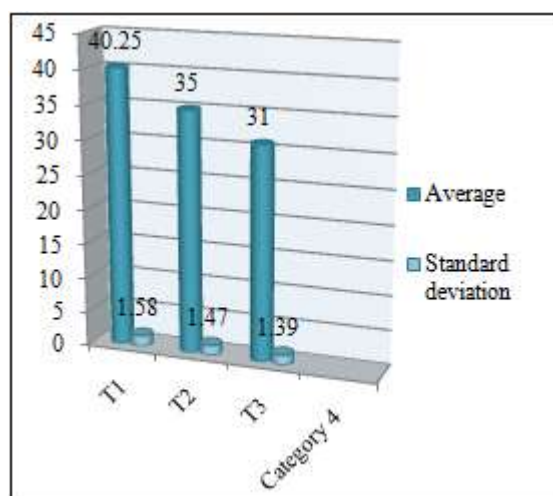| Parameters	T1	T2	T3
1	40	31	28
2	37	30	29
3	37	34	33
4	39	35	31
Total	153	130	121
Average	38.25	32.5	30.25
Standard Deviation	1.5	2.38	2.21

Figure: Graphical Representation- Overall calculation

In this table of overall calculation we got the average of T1, T2 and T3 as 1.5, 2..38 and 2..21 respectively.

Sample T1 with highest average and low standard deviation is most accepted statically, hence T1 is most accepted.

References

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