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**Aditi**  
Department of Clinical Nutrition  
and Dietetics, Periyar  
University, Salem, Tamil Nadu,  
India

**Arivuchudar R**  
Assistant Professor, Department  
of Clinical Nutrition and  
Dietetics, Periyar University,  
Salem, Tamil Nadu, India

## A study on the organoleptic evaluation of unprocessed, sprouted and roasted flour mix chapattis

**Aditi and Arivuchudar R**

### Abstract

The success of a food product formulated does not end with its preparation, rather the acceptability by the consumers determine it. This study contributes to enhance the effectiveness of a traditional food by incorporating value addition substances favoring the consumption of enriched diet on daily basis. The value addition was carried out by incorporating unprocessed, sprouted and roasted flour mix prepared from the millets (ragi, bajra, jowar) and the pulses (green gram, horse gram whole Bengal gram (black)) and curry leaves into the whole wheat flour and developing chapattis. To establish the level of acceptability of the processing a 5 point hedonic rating was done using trained panelist.

**Keywords:** Sensory evaluation, Processing, Value addition

### Introduction

Sensory evaluation has been defined as a scientific discipline used to evoke, measure, analyse and interpret those responses to products as perceived through the senses of sight, smell, touch, taste and hearing (Sidel & Stone, 1993). The integrated approach of all these factors lead to the assessment of a product's acceptability. Sensory analysis proceeds with the use of sensory perception of humans rather than believing in the instruments. The sense of smell or taste cannot be predicted by a machine and hence it can be strongly believed that there is no substitute for humans in carrying out the evaluation of product acceptability. Sensory evaluation also helps to rectify the errors if any from the judgment or remarks by the panelist. Sensory analysis is applicable to appraise a series of prevailing food products, analyze the food products for improvements, measure consumer preferences, supports new food product development, aids in cost reduction, helps in quality control and check the product specificity. The value addition to chapatti makes it easily acceptable by people as it had been evaluated sensorily for many decades every day by everyone in their own kitchen. Hence, the sensory evaluation will be easier on a known product, acceptance will be better, thereby the value addition will prove success.

### Objectives

1. To develop the flour mix incorporated value added chapatti.
2. To assess the organoleptic evaluation of value added chapatti.

### Methodology

Development of Value Added Chapatti Using Prepared Flour Mix

### Correspondence

**Aditi**  
Department of Clinical Nutrition  
and Dietetics, Periyar  
University, Salem, Tamil Nadu,  
India

**Table 1:** Formula for Preparation of Value Added Chapatti

Ingredients	Quantity		
	Unprocessed Chapatti – Sample I (from unprocessed millets and pulses flour)	Sprouted Chapatti – Sample II (from sprouted millets and pulses flour)	Roasted Chapatti – Sample III (from roasted millets and pulses flour)
Ragi flour	5g	5g	5g
Bajra flour	5g	5g	5g
Jowar flour	5g	5g	5g
Green gram flour	5g	5g	5g
Black channa flour	5g	5g	5g
Horse gram flour	5g	5g	5g
Curry leaves powder	5g	5g	5g
Whole Wheat flour	65g	65g	65g



1. In a mixing bowl, add the powdered millets, pulses and curry leaves powder along with whole wheat flour (proportion as mentioned in the Table 1, for each variation of Chapattis)



2. Mix it well



3. Add required salt to it



4. Add water little by little



5. Knead it into a dough, rest for 20-30 minutes



6. Pinch a small portion of the dough, make a ball out of it, and press it gently

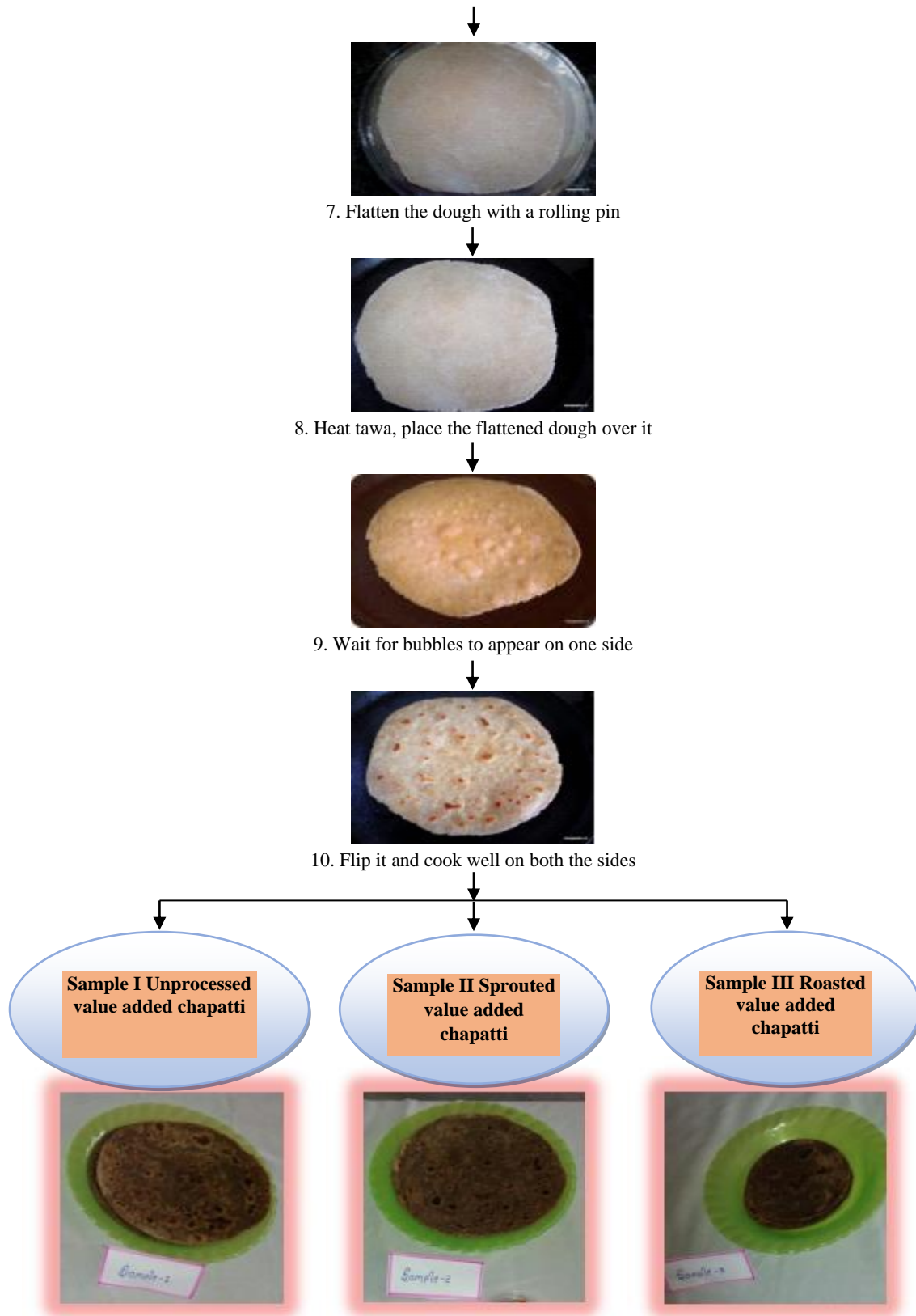


Fig 1: Method of Prepare

## 2. Acceptability of the Product by Organoleptic Evaluation

The Value added chapattis were subjected to organoleptic evaluation to assess the maximum acceptability of the products. The quality attributes in term of colour, appearance, flavor, texture, taste and overall acceptability were evaluated

by judges using score card with 5 point hedonic rating scale. They were asked to taste each sample and score from 1. Dislike Very Much to 5. Like Very Much indicating their choice of sample, with respect to the quality attributes mentioned above. The results were analysed based on their scores.

**Table 2:** mean of organoleptic attributes of unprocessed value added chapatti (sample i)

S. No.	Criteria	Mean ± SD	“t” value	“P” Value
1.	Appearance	4.60 ± 0.502	0.890	0.385 <sup>NS</sup>
2.	Taste	4.65 ± 0.489	0.274	0.787 <sup>NS</sup>
3.	Texture	4.70 ± 0.470	0.951	0.353 <sup>NS</sup>
4.	Flavour	4.65 ± 0.489	0.274	0.787 <sup>NS</sup>
5.	Colour	4.50 ± 0.512	0.435	0.000*

NS-Not significant at 5% level \* -significant at 5%

In sample I, the high mean value was obtained for texture as sensory attributes. 4.70 and least mean value for colour 4.50 compared to other

**Table 3:** Mean of Organoleptic Attributes of Sprouted Value Added Chapatti (Sample Ii)

S. No.	Criteria	Mean ± SD	“t” value	“P” value
1.	Appearance	4.90 ± 0.447	8.000	.000*
2.	Taste	4.95 ± 0.223	3.000	0.007*
3.	Texture	4.95 ± 0.223	3.000	0.007*
4.	Flavour	4.85 ± 0.670	9.000	0.000*
5.	Colour	4.25 ± 0.63	0.35	0.007*

\*=significant at 5% level

In this, the high mean value was obtained for texture (4.95) (4.85). Colour has attained the least score. and taste (4.95) followed by appearance (4.90) and flavour

**Table 4:** Mean of Organoleptic Attributes of Roasted Value Added Chapatti (Sample Iii)

S. No.	Criteria	Mean ± SD	“t” value	“P” Value
1.	Appearance	4.65 ± 0.489	0.183	0.857 <sup>NS</sup>
2.	Taste	4.75 ± 0.444	0.503	0.621 <sup>NS</sup>
3.	Texture	4.75 ± 0.444	0.101	0.921 <sup>NS</sup>
4.	Flavour	4.80 ± 0.410	1.090	0.289 <sup>NS</sup>
5.	Colour	3.50 ± 0.606	1.47	0.157 <sup>NS</sup>

NS-Not significant at 5% level

In this variation, the high mean value was obtained for flavor as 4.80 and least value for colour 3.50.

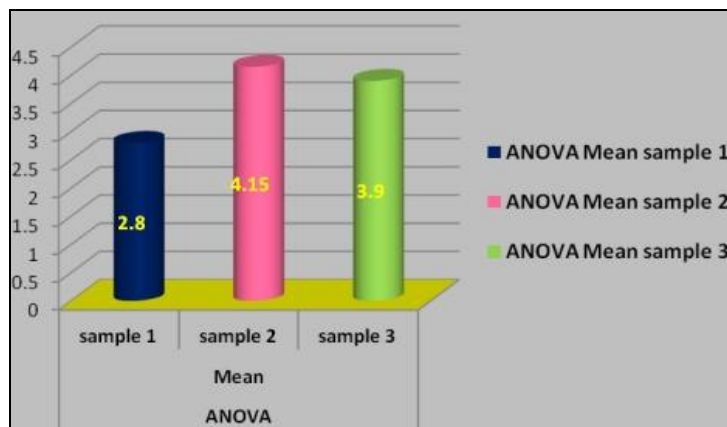
**Table 5:** Anova for Overall Acceptability of Value Added Chapattis

Variations	Mean	Sd	Sum of squares	Mean of squares	F value	P value
			20.633 (between group)	10.317 (between group)		
Sample i	2.800	0.833	35.550 (within groups)	0.624 (within groups)	16.541	0.000*
Sample ii	4.150	0.812				
Sample iii	3.900	0.718				

\*= significant at 5% level

From the above table it can be concluded that the mean of samples are significantly different from groups. Also the p value is 0.000 which is lower than 0.05 thus it can be said that

there was a significant difference in sensory characteristics of three samples.



**Fig 2:** Overall Acceptability of Value Added Chapattis

The table shows that the mean value was high in sample II (sprouted value added chapatti) than the other two samples.

Hence it is proved that the overall acceptability was high for the sprouted value added chapatti.

### Conclusion

The unprocessed value added chapatti had least flavour, texture, taste and appearance compared to Sample II and III. The colour of Sample I was acceptable compared to Sample II and III as the roasting and sprouting techniques along with the curry leaves had led to dark colouration. Whereas, the processing techniques has increased the flavour, taste and texture. The sensory evaluation has concluded that the sprouted value added chapatti had high palatability and has gained the maximum overall acceptability compared to other two samples.

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