



## **Development and quality assessment of nutritious sprouts dhokla premix**

**Tulasi V. Kanase, Sayali S. Chavan, Pradnya C. Kamble, Samruddhi T. Lohar, Pratiksha R. Salunkhe and Priyanka. R. Patil\***

Dept. of Food Processing and Packaging, Yashwantrao Chavan Institute of Science, Satara and Maharashtra 415019.

\*Corresponding author E-mail: [alkapriyanka14@gmail.com](mailto:alkapriyanka14@gmail.com)

### **ABSTRACT**

*Dhokla is easy to cook and very popular as a snack. The present study focused on germination of green gram, chickpea, cowpea and mothbeans and its potential to be exploited for value addition. The primary goal of the study was to create an instant dhokla using germinations of green gramme, chickpea, cowpea, and moth beans at various concentrations, and to evaluate it for sensory and proximate analysis. Different sprout flours are added to the instant dhokla mixture, significantly increasing the nutritional contents. Proximate analysis of best formulation was carried out and results obtained were energy (397.72 Kcal), Carbohydrates (75.58g), Protein (14.22g), Fat (4.28%), Moisture content (4.98%), ash content (0.94%). Organoleptic analysis including sensory attributes like colour, Texture, taste and appearance was carried out.*

**Keywords:** Premix, Dhokla, Sprouts flours, sensory evaluation, proximate analysis.

Received 20.11.2022

Revised 30.11.2022

Accepted 25.12.2022

### **INTRODUCTION**

The goal of product development is to satisfy consumer demand for year-round access to a variety of high-quality, innovative, and diverse food products without sacrificing nutritional value. After seed germination, a plant's early stages of development are known as sprouts [3]. The sprouts are excellent providers of protein, vitamins, and minerals, and they also include key nutrients that support good health, such as glucosinolates, phenolic acids, and Brassica plants' selenium-containing constituents or isonitrile in the soyabean. At the start of the growing period, sprouts are consumed. Their level of nutritious content stays quite high. In addition to the nutrients, phytochemicals, vitamins, and minerals in sprouts. The importance of enzymes and amino acids is greatest because these are the helpful with regard to human health [5].

Dhokla can be produced using a number of components, including semolina, oat flour, gram flour, and rice flour. The present formulation of sprouted dhokla premix, which is not only more nutrient-dense but also higher in protein. Sprouts of green gram, chickpeas, cowpeas, and moth beans used for the dhokla premix formulation. It is a good source of many minerals, including potassium, magnesium, phosphorus, and vitamin B. More protein is provided by these sprouts. Additionally, sprouts may have a lot of health benefits, such as better blood sugar regulation, a lower risk of heart disease, and easier digestion [2, 5].

The addition of sprouts to your diet may also have positive effects on the condition of your heart and other organs [6]. By blending the flour from sprouted green gram, chickpeas, cowpeas, and moth beans, sprout dhokla mix was created. Sprouts are a good source of iron, calcium, vitamin C, and protein. This premix is straightforward, handy, simple to use, and quick to produce.

### **MATERIALS AND METHODS**

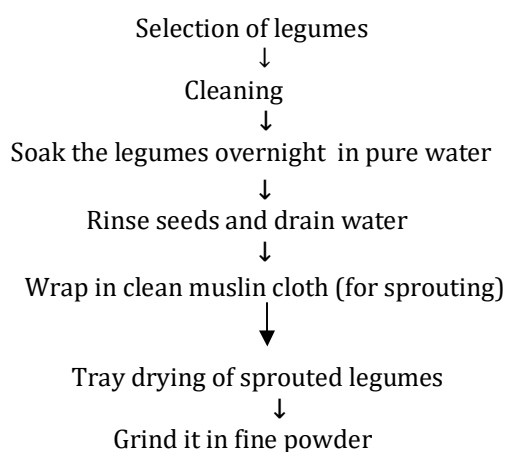
#### **Raw Materials**

The raw material requires for experiment work was legumes (green gram, chickpea, cowpea, moth bean), Turmeric, Baking soda, Baking powder, Citric acid, Salt, sugar, Ginger, Garlic and Chilli powder (dry). They all were purchased from the local market.

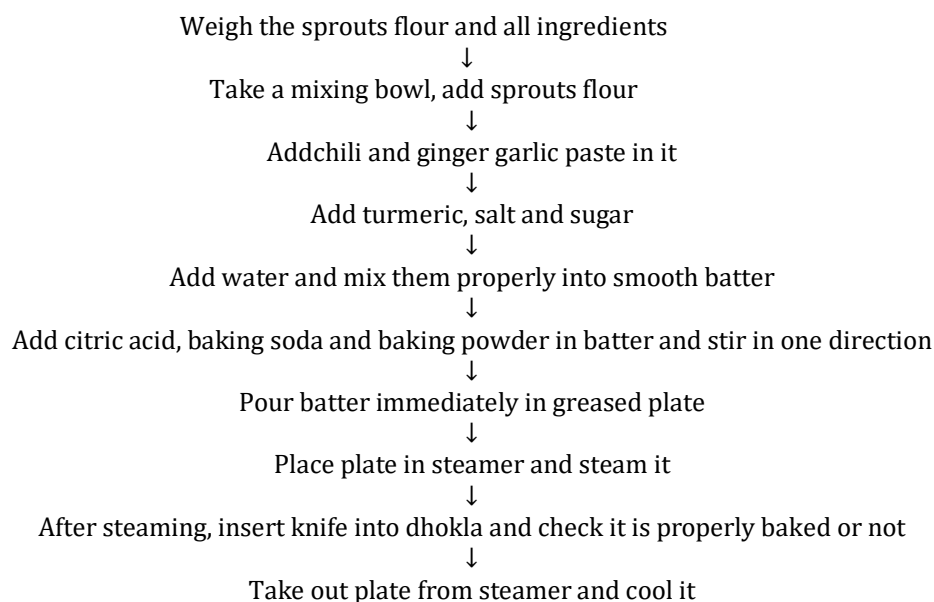
#### **Formulation of sprout dhokla premix**

The sprouts dhokla premix was prepared with varying different proportion of green gram and chickpea sprouts flour. The proportion of cowpea and moth bean kept constant each and every sample.

### Preparation of sprouts dhokla premix:



### Process of sprouts dhokla preparation-



**Fig 1-Dhokla from formulation D1**



**Fig 2-Dhokla from formulation D1**



**Fig 3-Dhokla from formulation D3**



**Fig 4-Dhokla from formulation D4**



**Fig 5-Dhokla from formulation D5**

#### **Sensory Evaluation:**

A 9-point hedonic rating scale was used for sensory evaluation of nutritional rich sprouts dhokla premix. It was evaluated for different attributes based on a 9-point hedonic scale was used for colour, flavour, texture, taste, mouth feel and overall acceptability. The product were evaluated by semi-trained panel members [1].

#### **Proximate Analysis:**

Proximate analysis were performed for total energy, carbohydrate, protein, fat, moisture and ash as indicated by their separate standard strategies as described in AOAC, 2000 [7]

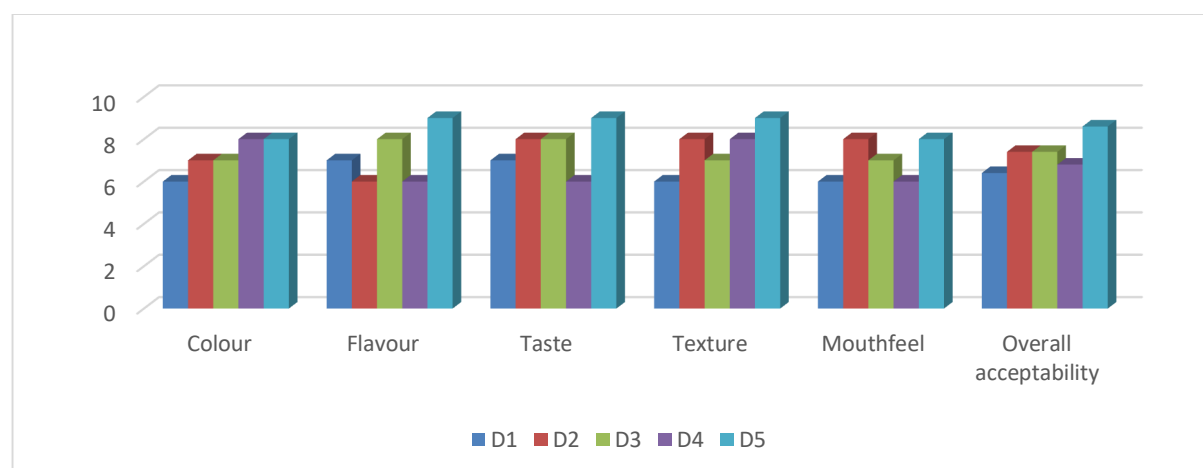
### **RESULT AND DISCUSSION**

#### **Sensory Evaluation**

Sensory analysis was carried out using 9-point hedonic scale. Sensory evaluation of sprout dhokla premix with different samples was done on the basis of organoleptic test by a faculty member and student. Samples were given with code numbers (D1, D2, D3, D4, D5) to avoid bias opinion. Based on sensory evaluation sample D5 was the best and after that a proximate analysis of the sample D5 was carried out.

**Table 1: Sensory evaluation of Sprouts dhokla premix**

Sample	Colour	Flavour	Taste	Texture	Mouth feel	Overall acceptability
D1	6	7	7	6	6	6.4
D2	7	6	8	8	8	7.4
D3	7	8	8	7	7	7.4
D4	8	6	6	8	6	6.8
D5	8	9	9	9	8	8.6



**Fig. 6. Sensory evaluation of sprouts dhokla premix**

#### **Proximate Analysis**

The proximate properties of sprouts dhokla premix such as total energy, carbohydrate, protein, fat, moisture and ash were investigated and the results are shown in table No. 3

**Table 2: Proximate analysis of sprout dhokla premix**

Sr.No	Test Done	Result
1	Total Energy	397.72 Kcal
2	Carbohydrates	75.58 g
3	Protein	14.22 g
4	Total fat	4.28 5 %
5	Moisture	4.98 %
6	Ash	0.94 %

### CONCLUSION:

Compared to other flours, the sprouted dhokla premix made with green gram flour had a higher quantity in this study. The final product D5, which was accepted organoleptically, has a 14.22% protein content per 100 g of sprout premix, which is a good amount and helps the consumer meet their protein needs.

### REFERENCES

1. Bhawna Mehta and SudeshJood. (2018). Acceptability, Nutritional Assessment and Storage Stability of Oat Based Gluten Free Instant Dhokla.Chemical Science Review and Letters,**7(28)**: 1030-1039.
2. Shobha D. and Joshi Neema. (2016). Evaluation of Maize Dhokla for Physical, Sensory and Functional Parameters. International Journal of Agriculture Sciences,**8(36)**:1755-1758.
3. Paolo Benincasa, Beatrice Falcinelli, Stanley Lutts, Fabio Stagnari and Angelica Galieni. (2019).Sprouted Grains: A Comprehensive Review.Nutrients **11(421)**:1-29.
4. AsmaNafeesa, ShrutiKabra. (2019). Value addition of dhokla for diabetics with oats and jowar flour.International Journal of Scientific Development and Research,**4(4)**: 461-469.
5. M. M'arton, Zs. M'andoki,Zs. Csap'o-Kiss, J. Csapo,(2010).The role of sprouts in human nutrition. A review.Acta Univ. Sapientiae, Alimentaria,81-117
6. SwetaJaiswal and Ms. Jincy Abraham(2017). Development of protein rich Dhokla mix with a high satiety value for women on ritualistic fasts. International Journal of Home Science **3(2)**: 346-349
7. AOAC. Official methods of analysis, 17th edition. Association of Official Analytical Chemists, Washington DC 2000.

### CITATION OF THIS ARTICLE

T. V. Kanase, S. S. Chavan, P. C. Kamble, S. T. Lohar, P. R. Salunkhe and P. R. Patil: Development and quality assessment of nutritious sprouts dhokla premix. Bull. Env. Pharmacol. Life Sci., Spl Issue [1]: 2023:323-326.