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# Organoleptic Acceptability of Sorghum Recipes

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## ABSTRACT

Sorghum (*Sorghum bicolor*) is an important food crop and it is consumed by millions of people as a staple food source in arid and semi-arid areas of the developing world. India is the sixth largest producer of sorghum globally but per capita consumption of sorghum is declining in both rural and urban India. Therefore, the present study was conducted to know the sorghum consumption behaviour and organoleptic acceptability of prepared sorghum recipes by school children. The present study was carried out in Fatehpur district of Uttar Pradesh. A total of 120 primary school children were included using purposive random sampling General information and dietary habits of the subjects was collected using Food Frequency Questionnaire (FFQ) to assess the frequency and form of sorghum consumption by respondents. Four recipes *jowa rupma,jowar khichdi*, *jowar dalia* and *jowar papad* were prepared and sensory evaluation of products was done by nine-point hedonic scale. Results of the study revealed that 45 per cent of school children were consuming sorghum and its products more than once per week. It was also found that sorghum was commonly consumed in the form of flour (80%) for making *roti* and *puri.* Organoleptic evaluation revealed that *jowar papad* was liked moderately and overall acceptability was 7.42 and as acceptable as the cereal (rice *papad*). The study concludes that interventions are required to incorporate local grown millets in the diet to eliminate the malnutrition in population and there is need to make awareness regarding its nutritional benefits.

**Keywords :** Sorghum, Millets sensory evaluation, Consumption behaviour

## INTRODUCTION

Sorghum *Sorghum bicolor* (L.) Monech popularly called as *jowar* is considered as King of millets and is fifth in importance among world's cereal after wheat, rice maize and barley. It is an important food crop and is consumed by millions of people as a staple food source in arid and semi-arid areas of developing world. India is the sixth largest producer of sorghum globally but per capita consumption declined in both rural and urban India. Millets are traditional grains and they are recognized as Smart foods since they are both climate stress resistant and naturally rich in micronutrients. In other words millets are good for individuals, planet and farmer (www.smartfood.org). Lancet Commissions had recognised the need for identifying healthy and environmentally sustainable diets and enhance usage of underused plant species due to their climate resilience and dense nutritional content (Willett *et al.,* 2021). Among 14,000 edible plants only three crops namely rice, maize and wheat contribute 60 per cent of caloric intake.

Achieving the Sustainable Development Goals (SDGs)- 2 (zero hunger),3 (good health and well-being), 12 (sustainable consumption and production) and 13 (climate action) can be leveraged by promoting the production, processing and consumption of millets. To meet the ambitious aim of SDGs to eliminate all forms of malnutrition by 2030 it is required to replace the major portion of the diet currently occupied by rice, wheat and maize with highly nutritious grains. Considering the multiple benefits of millets, they are arguably the best fit to fill the gap in agricultural food system (Kumar *et al.,* 2018). Over the decades millets have become less and less common in India in terms of both production and

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consumption (Tsusaka and Otsuka, 2013). Great advantage of sorghum is that it can become dormant unnditions and can resume growth after relatively severe drought (Bogue and Sorenson, 2008). Three key actions have been suggested to enhance the consumption of millets; 1. Developing delicious products to satisfy the taste, 2. Providing Knowledge on nutritional and health facts on millets and 3. Improving accessibility of millets in markets (Kane –Potaka and Kumar, 2019).

Therefore, the present study was conducted to know the sorghum consumption behaviour and organoleptic acceptability of prepared sorghum recipes by school children.

## METHODOLOGY

The present study was carried out in Fatehpur district of Uttar Pradesh. A total of 120 primary school children were included using purposive random sampling General information and dietary habits of the subjects was collected using Food Frequency Questionnaire (FFQ) to assess the frequency and form of sorghum consumption by respondents. Four products *jowar upma,jowar khichdi*, *jowar dalia* and *jowar papad* were prepared and sensory evaluation of products was done by nine-point hedonic scale.

## RESULTS AND DISCUSSION

Results of the study revealed that maximum children 48 (40 per cent) school children were 10-12 years old (Table 1). After survey it was found that 85.8 per cent children were vegetarian (not vegan) whereas only 14 per cent were non vegetarian dietary habits. It was found that more than 50 per cent were consuming sorghum in their diets followed by pearl millet (*bajra*) (Table 2). Table 3 clearly indicates that 80 per cent of children were consuming sorghum in the form of flour only. It was found that in 100 per cent households sorghum flour was being used in the form of *roti* whereas 49.2 per cent were also preparing *puri* from sorghum flour (Table 4). It was found that organoleptic acceptability was highest (liked moderately) for sorghum *papad.* Taste was observed to be a major reason why the respondents did/did not eat more millets indicating that health awareness alone would not significantly boost millet consumption. This indicates the need for tasty products and simple recipes made from millets. To meet the need for variety and taste of children, it is important to use sorghum in other forms of food in a culturally acceptable way. It was reported in a study by Singh and Raghuvanshi (2012) that if millets were not eaten from childhood there was no incentive or trigger for consuming them hence it is important to raise the awareness and inculcate good practices from childhood

**Table 1 : General Information of the Subjects**

| | Frequency | Per cent |
|---|---|---|
| **Age** | | |
| 6-8 years | 37 | 30.8 |
| 8-10 | 35 | 29.2 |
| 10-12 | 48 | 40.0 |
| **Religion** | | |
| Hindu | 69 | 57.5 |
| Muslim | 51 | 42.5 |

**Table 2 : Which millet is commonly used at your home?**

| Millet | Frequency | Per cent |
|---|---|---|
| Sorghum | 81 | 67.5 |
| Pearl millet | 51 | 42.5 |
| Ragi | 05 | 4.2 |
| Sanwa | 02 | 1.7 |

**Table 3 : Distribution of subjects on the basis of form of Sorghum used in the diet**

| Form of sorghum | Frequency | Per cent |
|---|---|---|
| Flour | 65 | 80.2 |
| Popped/ puffed | 16 | 19.7 |

**Table 4 : Distribution of subjects on the basis of sorghum flour preparation being consumed**

| Flour preparation | Frequency | Per cent |
|---|---|---|
| Roti (Chapati) | 65 | 100 |
| Puri | 32 | 49.2 |
| Pua | 26 | 40 |

**Table 5 : Organoleptic Acceptability of Sorghum Products by School Children**

| Product | Appearance | Colour | Texture | Flavour | Taste | Overall acceptability |
|---|---|---|---|---|---|---|
| Upma | 6.4 | 6.0 | 6.4 | 6.6 | 6.7 | 6.7 |
| Khichdi | 6.5 | 6.1 | 6.3 | 6.4 | 6.2 | 6.2 |
| Dalia | 6.8 | 5.7 | 6.2 | 6.6 | 6.3 | 6.4 |
| Papad | 7.2 | 7.0 | 7.4 | 7.0 | 7.4 | 7.4 |

in order to develop a healthy population.

**Conclusion :**

The study concludes that children prefer ready to eat foods so it is recommended that more ready to eat millet products should be formulated so that more amounts of millets could be included in the diet of children.

## REFERENCES

Available online (www.smartfood.org )

Bogue, J. and Sorenson, D. (2008). The marketing of gluten free cereal products. Gluten free cereal products and beverages, Elsevier Inc. New York, pp. 393e412.

Kane –Potaka J. and Kumar, P. (2019). Smart Food, Food that is good for you, the planet and the farmer.' in State of India's Livelihoods Report 2019, 71-82

Kumar, A., Tomer, V., Kaur, A., Kumar, V. and Gupta, K. (2018). Millets: A solution to agrarian and nutritional challenges. *Agric. Food. Secur,* **7** : 1-15.

Singh, P. and Raghuvanshi, R.S. (2012). Finger millet for food and nutritional security. *Afr. J. Food Sci.,* **6** : 77-84

Tsusaka, T.W. and Otsuka, K. ( 2013). The changing effects of agro climate on cereal crop yields during the green revolution in India, 1972 to 2002. *J.Sustain. Dev.,* **6** :11-36.

Willett, W., Rockstrom, J., Loken, B., Springmann, M., Lang, T. and Vermeulen, S. (2021). Food in the anthropocene: the EAT- lancet Commission on healthy diets from sustainable food systems. *Lancet Commiss*, **393** : 447-492.

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