

MILLET : AN ANALYSIS FROM ALTERNATIVE FOOD PERSPECTIVE

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ABSTRACT

This paper titled “Millet: An analysis from alternative food perspective” dealt with the nutritional content of the millet, an analysis of Odisha millet mission and awareness and use of millet by housewives. A total number of 80 respondents were interviewed for data collection. The study was confident to find out awareness about the use of millet and to find out the knowledge of housewives regarding the benefits of millet. A questionnaire cum interview method was used for the data collection in urban areas of Bhubaneswar during year 2022. Housewives from middle-class families were interacted with for data collection. The study revealed that around 62% of families were using the millet but were not aware of the benefits. Only 43% of housewives were aware of the use of millet. In conclusion, from an alternative food perspective, millet offers a range of benefits, including nutrition, sustainability, biodiversity support, food sovereignty, and cultural preservation. There are opportunities to promote millet as a viable and desirable alternative to conventional grains, contributing to a more diverse, resilient, and sustainable food system. The study can be taken of commercial grain to explore the millet quality and its production process. The research in millet will provide a new area in cultivating staple food. It will also provide a great solution to combat the malnutrition problem all over the world.

(Key words: Millet, housewives, millet consumption, and nutrient)

INTRODUCTION

Millet is one of the cereal grains belonging to the grass family. It's widely consumed in developing countries and India. Millets are used in Maharashtra, Karnataka, Andhra Pradesh, and Madhya Pradesh. Millet is a rich source of nutrition. The food products and beverages made out of them have many health benefits. Millets are small-grained, annual, warm-weather cereals belonging to the grass family. They are rain-fed, hardy grains that have low requirements for water and fertility when compared to other popular cereals. They are highly tolerant to drought and other extreme weather conditions. Millets are ultra-rich cereals comprising sorghum, pearl millet, finger millet (Major millets), foxtail, little, kodo, proso, and barnyard millet (minor millets). These are one of the oldest foods known to humanity. These are one of the several species of coarse cereal grasses cultivated for their small edible seeds. Pseudo millets are so called because they are not part of the Poaceae botanical family, to which 'true' grains belong, however, they are nutritionally similar and used in similar ways to 'true' grains. Millets are highly nutritious, non-glutinous, and non-acid-forming foods. Millets have many nutritional and health-promoting properties, especially the high fiber content.

Millets hydrate our colon to keep us from being constipated. Niacin in millet can help lower cholesterol.

Millets contain major and minor nutrients in good amounts along with dietary fiber (Nayak and Das, 2021; Anonymous, 2019., Siri-Tarino, 2010).

They are rich in nutrition and dietary fiber. They serve as a good source of protein, micronutrients, and phytochemicals. The essential amino acid profile of the millet protein is better than various cereals such as maize. Millets contain fewer cross-linked prolamins, which may be an additional factor contributing to the higher digestibility of the millet protein (Kare *et al.*, 2017). Millets are more nutritious than fine cereals. Small millets are a good source of phosphorus and iron. Millets contribute to antioxidant activity with phytates, polyphenols, tannins, anthocyanins, phytosterols, and pinacosanols present in them having an important role in aging and metabolic diseases. All millets possess high antioxidant activity. The study should be conducted to know about the common people's preference for rice versus millet (Borkotoki *et al.*, 2021). The millet mission scheme was undertaken to spread awareness of the use of millet as a staple food in place of rice but the question is can these schemes bring change in food habits? So agricultural researchers, academicians, and stakeholders should rethink this millet mission and millet as a substitute for rice (Gupta, 2014).

Initiative on millet mission at Odisha

The Odisha government has recently launched a new

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initiative called the “Millet Mission” to promote the cultivation, processing, and consumption of millets in the state. The initiative was launched on World Food Day, 16th October 2021, by the Chief Minister of Odisha, Naveen Patnaik. The Millet Mission aims to increase the area under millet cultivation in Odisha and promote the production of millets as a climate-resilient and sustainable crop. It also aims to create a market for millets by promoting their use in mid-day meals, government welfare schemes, and in the food industry. Under the Millet Mission, the government plans to provide support to farmers for the cultivation of millets, including the distribution of high-quality seeds, training in sustainable farming practices, and the provision

of modern farming equipment. The government also plans to set up millet processing units and provide support to entrepreneurs for the establishment of millet-based enterprises. The Millet Mission is expected to benefit farmers in the state by providing them with an alternative crop that requires less water and is more resilient to climate change. It will also promote the consumption of millet as a healthy and nutritious food option, which can help in addressing issues related to malnutrition and food insecurity. Overall, the Millet Mission is a significant step towards promoting sustainable agriculture and improving the nutritional status of the people in Odisha (Anonymous, 2021).

Table 1. Initiative on millet mission at Odisha

Initiative	Millet Mission
Aim	Promote cultivation, processing, and consumption of millets in Odisha
Launch Date	16th October 2021
Launching Authority	Chief Minister of Odisha, Naveen Patnaik
Objectives	Increase area under millet cultivation, create a market for millets, promote millet-based enterprises
Benefits	Climate-resilient and sustainable crop, alternative crop for farmers, healthy and nutritious food option
Support Provided	High-quality seeds, training in sustainable farming practices, modern farming equipment, establishment of millet processing units, support to entrepreneurs
Expected Outcomes	Improved nutritional status of people in Odisha, sustainable agriculture, reduced water usage, climate change resilience

(Source : <https://milletsodisha.com> > about-program)

Table 2. Millet production at different places of Odisha

District	Major millets produced
Kalahandi	Finger millet, foxtail millet, pearl millet
Bolangir	Finger millet, foxtail millet, pearl millet
Nuapada	Kodo millet, finger millet, pearl millet
Koraput	Finger millet, pearl millet
Malkangiri	Finger millet, pearl millet
Rayagada	Finger millet

It’s important to note that millets may also be grown in other districts of Odisha and that the specific millets produced in each district may vary depending

on various factors such as soil type, climate, and farming practices.

Table 3. Summarizing the health benefits of millets for different health conditions

Health condition	Benefits of Millets
Diabetes	Regulates blood sugar levels, improves insulin sensitivity, and reduces the risk of type 2 diabetes.
Heart Disease	Lowers cholesterol levels, regulates blood pressure, and reduces the risk of heart disease.
Digestive Disorders	Promotes regular bowel movements, soothes the digestive system, and reduces inflammation in the gut.
Anemia	Rich in iron, which is essential for the production of red blood cells and can help prevent anemia. Also contains vitamin C, which can improve iron absorption.
Gluten Intolerance	Naturally gluten-free, making them a great alternative to wheat and other gluten-containing grains for people with gluten intolerance or celiac disease.

Considering the above facts the present investigation was undertaken to study regarding of awareness about the use of millet and to find out the knowledge of housewives regarding the benefits of millet.

MATERIALS AND METHODS

The present study was conducted among housewives of middle-class families in the urban area of

Bhubaneswar, Odisha, aged between 25-45 years. Eighty (80) respondents were selected randomly for the present study in 2022 and the data were be collected through standardized questionnaires and analysis techniques. The data collection were been consolidated, tabulated, and analyzed. Statistical tools were used like percentage methods and graphs to interpret the findings. The data are presented in tabular form.

Style of questionnaire	No. of Question	Information collected on	Statistical tools used	No. of samples	Answering point
Self develop questionnaire	20	Awareness about millet, type of millet available in the market, Names of grains, Using the grain for cooking, using the grain besides Rice and wheat, know about millet, are using the millet, type of millet available in the market, sources through which you care to millet, different dishes with the use of millet, aware about the benefits of millet, important factors considered for eating millet, millet can be used as a substitute to rice, reasons for cooking millet regularly at home, aware about nutritional values of millet,	Tabulation, Percentage, Graph (Bar, Linear, Pie).	80 numbers of sample has been selected and interacted for data collection	Strongly Disagree Disagree Neutral Agree Strongly Agree

RESULTS AND DISCUSSION

The study shows that around 43.75% of households were aware about the grain and most of the housewives were not aware about the grain i.e 56.25% (Table 4). The data shows that around 63% of housewives were using millet in cooking where as 37% of housewives were not using millet in cooking but according to scientists millets are widely recognized as having low glycaemic index (GI) helping to manage diabetes. They have also opined that

the different types of millet and different forms of processing / cooking collated all evidence. The meta analysis of the study found the statistical result that job's tears, fonio, foxtail, barnyard and teff where the millets with low glycaemic index which are more effective in reducing dietary glycaemic index. The scientist also found that all millets had significantly lower glycaemic index than white rice, refined wheat, standard glucose except little millet (Seetha *et al.*, 2021). Figure 3 shows that 37.5 % housewives know about millet and 62.5 % housewife were not known about

millet (Table 5). The data revealed that different important factors are to be considered for eating millet. The respondents said it is healthy to eat (27.5%), tasty (22.5%), and light to digest (7.5%). A majority of respondents around (40%) said that it is liked by a family member, an almost very negligible percentage of respondents were not all aware of the preparation, price and can be served in any other dishes in (Table 6), but according to millets are the vital nutrients

Table 4. Aware about the grain

Sl.No.	Characteristics	frequency	Percentage
1	Yes	35	43.75
2	No	45	56.25

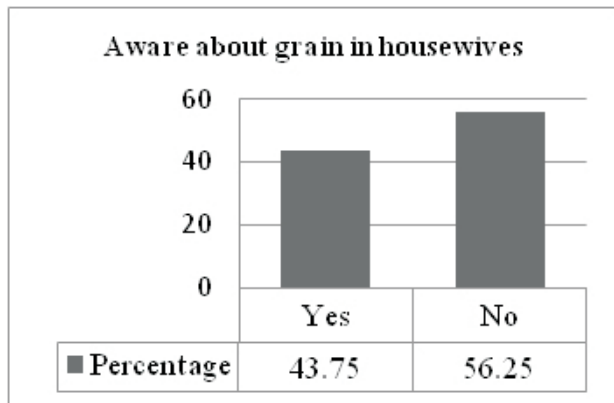


Figure 2. Using the grain for cooking

and the protein contents of millet grains are consider to be equal or superior in comparison to wheat ,rice, maize, sorgum grain (Kumar *et al.*, 2018). The data revealed the fact that the housewives were aware about the millet was 37.5 % from family member, 30 % from friend, 22.5 % from read in newspaper, 10 % from saw the TV, 12.50% heard on radio, 4.17% from doctor and 4.17% from shopkeeper (Table 7).

Table 5. Know about millet

Sl. No.	Know about millet	Respondent	Percentage
1	Yes	30	37.5
2	No	50	62.5

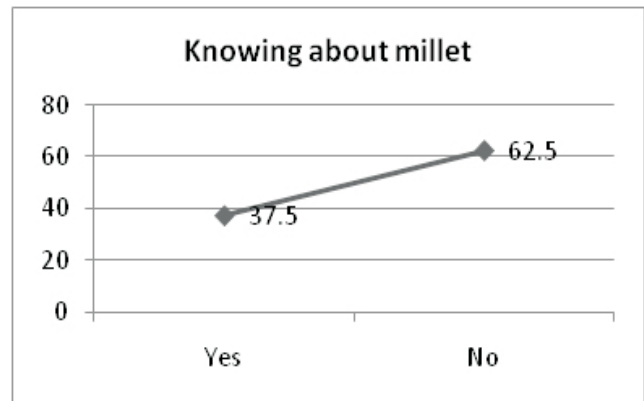


Figure 3. Know about millet

Table 6. Important factors considered for eating millet

Sl. No.	Important factors considered for eating millet	Respondent	Percentage
1	Health to eat	22	27.5
2	Tasty	18	22.5
3	Light to digest	6	7.5
4	Family member like it	32	40.0
5	Habituated to eating since childhood	2	2.5
6	Easy to prepare	0	0.00
7	Resonably priced	0	0.00
8	for the season	0	0.00
9	Can be served with any type of dishes	0	0.00

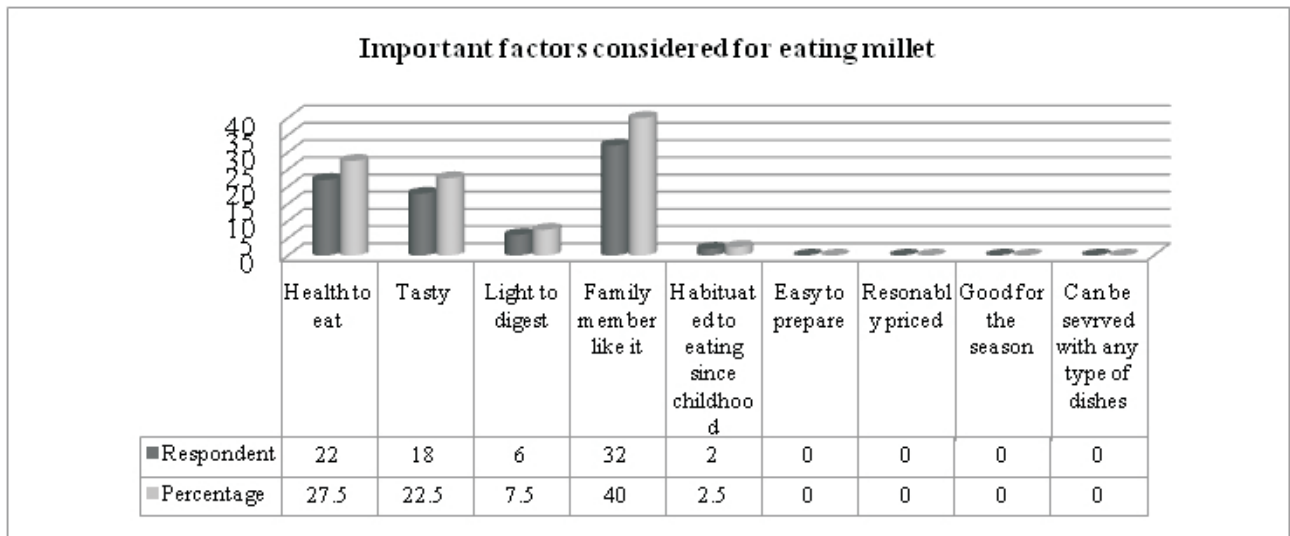


Figure 4. Important factors considered for eating millet

Table 7. Source of awareness about millet

Sl. No.	Source of awareness about millet	Respondents	Percentage (%)
1	Family member	30	37.5
2	Friend/ Neighbour	24	30
3	Reading Newspaper	18	22.5
4	Saw the TV	8	10
5	Heard it on Radio	10	12.5
6	Shop/Shopkeeper	3	4.17
7.	Doctor	3	4.17

The conclusion of an analysis of millet from an alternative food perspective would depend on the specific arguments and evidence presented throughout the analysis. However, based on general knowledge about millet and alternative food movements, the following conclusions can be drawn:

Millet is a versatile and extremely nutritious grain that provides several health benefits. Millet is a sustainable grain. It is abundant in vitamins, minerals, fiber, protein, and other important nutrients. Additionally, because it can thrive in a variety of climates with little water and fertilizer input, millet is sometimes seen as a sustainable crop.

From the standpoint of alternative foods, encouraging millet consumption can help create a more wholesome and sustainable food system. Millet cultivation fosters biodiversity by encouraging the establishment of varied plant species and fostering the creation of habitats for various organisms. The diversified genetic makeup of millet adds to its resilience, in contrast to monoculture crops, which frequently depend on synthetic inputs and are susceptible to pests and diseases. Due to its hardiness, millet is an important crop in the face of climatic change and erratic weather. Millet promotes food sovereignty and cultural preservation.

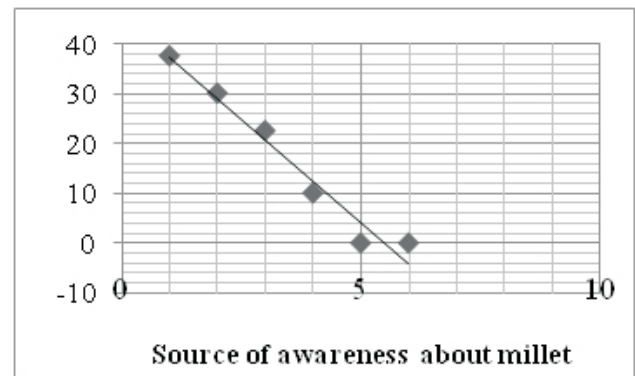


Figure 5. Source of awareness about millet

Many alternative food groups place a high priority on food sovereignty, which is the ability of people to manage their food systems on an individual and collective level. Additionally, millet has cultural value in many parts of the world, thus encouraging its intake can aid in the preservation of traditional eating habits and the culinary past.

Challenges and opportunities for millet adoption: Despite its numerous benefits, there are challenges to the widespread adoption of millet as a mainstream food crop. These challenges include limited consumer awareness, lack of processing infrastructure and limited availability in mainstream markets. However, alternative food movements, along with government policies and initiatives, can play a crucial role in overcoming these barriers and creating opportunities for millet to gain popularity and acceptance.

In conclusion, from an alternative food perspective, millet offers a range of benefits, including nutrition, sustainability, biodiversity support, food sovereignty, and cultural preservation. There are opportunities to promote millet as a viable and desirable alternative to conventional grains, contributing to a more diverse, resilient, and sustainable food system.

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