

RESEARCH NOTE

Prospects of Millets and Millet based Products as Nutri-health Food: Stakeholders' Analysis

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ABSTRACT

Millets which are also known as 'coarse cereals' have been an important part of traditional diet of millions of people in India. However, over time there has been a steep decline in area of millet cultivation. But due to various nutritional and health benefits millets are considered to have great opportunity in future thus the prospects of millets as nutri-health food was studied in this research study. A number of statements were prepared and the respondents which included farmers and extension personnel were asked to rank. Afterwards the overall rank of the statements was made by using Garrett's ranking technique. The results showed that farmers cultivating millets ranked climate resilient nature of millets as first and foremost prospect as it can withstand harsh climates of the respective climatic conditions and still can give handsome amount of yield where other crops cannot be grown. While extension personnel ranked nutritious nature of millet-based food as foremost prospect while considering the importance of millets to combat malnutrition in India.

Keywords: coarse cereals; Prospect; Garrett's ranking; Climate resilient;

Millets which are also known as 'coarse cereals' require less inputs, are more resistant to biotic and abiotic stress and take important role the cropping pattern of dryland agriculture. Millets are mostly grown as dual purpose crops to meet both food and fodder requirements. For centuries millets have been an important part of traditional diet of millions of people in India. However, from last few decades there has been a sharp decrease in area of cultivation of millets due to decline in demand as a result of changing food habit (Reddy *et al.*, 2013), availability of cereals *i.e.*, rice and wheat through PDS (Public Distribution System) at cheaper price and millets losing area to commercial crops due to improved access to inputs required by the commercial crops. But millets are having various health benefits like easy to digest, fibre rich, lower the risk of diabetes and cholesterol and are rich in micronutrients including iron, magnesium, phosphorous and potassium (Michaelraj and Shanmugam, 2013). It signifies that if included in the diet millets have potential to help reduce malnutrition and various diseases. Thus, an attempt was

made to understand the prospects of millets by the stakeholders.

METHODOLOGY

For the present study Rajasthan and Karnataka was selected purposively as these two states rank first in both area of cultivation and production of pearl millet and finger millet in India. From each state, one district was selected (Jodhpur in Rajasthan and Chitradurga in Karnataka) purposively based on the area of production as well as administrative convenience; from each district one block and from each block two villages were selected randomly. From each village, thirty farmers were selected randomly; so, the total sample size was one hundred and twenty. A total of 27 extension personnel from Research Institute and KVK were also interviewed to collect data.

Prospects imply possible opportunities in the future. Information relating to prospects of millets was collected from published literature and by consulting with experts to the related field and was enlisted in a pretested

interview schedule. The statements were then presented to both farmers and scientists and they were asked to rank the statements in the order of importance. The collected responses were analysed and overall rank in order of importance was made by using Garrett's Ranking Technique. The respondents choice order was converted into ranks by following this method and the formula used for the purpose has been given below.

$$\% \text{ position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

R_{ij} = rank given for i^{th} factor by j^{th} individual

N_j = number of factors ranked by j^{th} individual

The per cent position of each rank was converted into scores by using the conversion table given by Garrett (*Garrett and Woodworth, 1969*). Afterwards, individual respondents scores were summed up for each factor and was divided by the total number of respondents. The resulting means scores were ranked from lower to higher and thus, prospects were ranked.

RESULTS AND DISCUSSION

The ranking obtained for prospects of millets in India with their corresponding Garrett's mean score is presented in the Table 1 and Table 2 for farmers and extension personnel respectively. The relative ranking of statements concerning prospects of millets by farmers and extension personnel showed distinct variation. Farmers cultivating millets ranked climate resilient nature of millets as first and foremost prospect as it can withstand harsh climates of the respective climatic conditions and still can give handsome amount of yield where other crops cannot be grown. While extension personnel ranked nutritious nature of millet-based food as foremost prospect while considering the importance of millets to combat malnutrition in India. Farmers and extension personnel both opined that millets require less or no input and their ability to resist biotic stress are its important prospects. However, millets possible rise in future demand and high export potential were ranked least by both the group of respondents.

Farmers cultivating millets ranked climate resilient nature of millets as a first and foremost prospect as they felt that millets unique capability to withstand harsh climatic condition is going to be its main strength in future, especially at a time when climate change is happening. The second and third most important prospect as

perceived by the farmers are resistance to biotic stress and require less input, as many farmers expressed that the main reason for taking up millet cultivation is its less cost of cultivation and sustainable nature. However, ranking the statements "Possible rise in future demand" and "High export potential" as 7 and 8 respectively indicates farmer's lack of awareness of millets increasing demand and prospect in these aspects. Millets are generally sold at less price than wheat and rice, however, value added products made from millets are sold at much higher price. So, emphasis could be given on value addition of millets which will help the farmers fetch better price.

Table 1. Prospects of millets as nutri-health food as ranked by farmers (N=120)

Prospects	Garrett's mean score	Rank
Nutritious food	55.49	IV
Climate resilient crop	67.1	I
Requires less input	58.8	III
High export potential	33.41	VIII
Sustainable nature of crop	48.29	V
Health benefits	48.22	VI
Possible rise in future demand	46.51	VII
Resistant to biotic stress	61.23	II
For food diversification	33.08	IX

Table 2. Prospects of millets as nutri-health food as ranked by extension personnel (N=27)

Prospects	Garrett's mean score	Rank
Nutritious food	68.66	I
Climate resilient crop	63.4	II
Requires less input	54.37	III
High export potential	39.48	VII
Sustainable nature of crop	49.96	V
Health benefits	52.77	IV
Possible rise in future demand	37.11	VI
Resistant to biotic stress	41.85	IX
For food diversification	41.51	VIII

While scientists ranked nutritious nature of millet-based food as foremost prospect because they considered the importance of millets to combat malnutrition in India which signifies their awareness about its nutritional and health benefits. Moreover, their ranking of statements like "nutritious food", "health benefits", "possible rise in future demand" and "high export potential" as 1, 4, 6 and 7 respectively shows their anticipation of increase in future demand of millets due to its nutritional and health benefits.

CONCLUSION

The ranking obtained for prospects of millets in India with their respective Garrett's mean score showed distinct variation. Millet cultivators ranked climate resilient nature of millets as first and foremost prospect as it can be a viable source of food and income at a time when we are witnessing climate change. On the other hand, scientists ranked nutritious nature of millet-based food as foremost prospect as they considered

the importance of millets to combat malnutrition in India and also value addition can help fetch income to manifold. Farmers and scientists both opined that millets require less or no input and their ability to resist biotic stress are its important prospects. However, millets possible rise in future and high export potential were ranked least by both the group of respondents which depicts lack of awareness about millets growing demand in domestic and export markets.

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