P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating: 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 7; SP-Issue 11; November 2024; Page No. 41-45

Received: 15-09-2024
Accepted: 20-10-2024

Indexed Journal
Peer Reviewed Journal

Perception and constraints faced by farmers in cultivation of millets in Alluri Sita Ramaraju district of Andhra Pradesh

[1]Kishor KN, [1]Rajakumar N, [1]Babu P, [1]Sowjanya A, [1]Sathi Babu N, [1]Sankararao K, [2]Jagannadharao P, [3]Mukunda Rao B, [4]Vijayabhinandana B, [5]Prasad JV and [6]Meera SN

[1]Krishi Vigyan Kendra, Kondempudi, ANGRAU, Andhra Pradesh, India

[2]Associate Director of Research, RARS, Anakapalle, ANGRAU, Andhra Pradesh, India

[3]Deputy Director of Extension, ANGRAU, Andhra Pradesh, India

[4]Former Director of Extension, ANGRAU, Andhra Pradesh, India

[5]Principal Scientist, ICAR-ATARI, Andhra Pradesh, India

[6]Director, ATARI, Zone – X, Andhra Pradesh, India

DOI: https://doi.org/10.33545/26180723.2024.v7.i11Sa.1320

Corresponding Author: Kishor KN

Abstract

Millets also referred as super-grain, superfood and wonder-grain is one of the oldest foods known to humans, and probably the first grain used for domestic purposes. Millet is an important Staple cereal crop for millions of smallholder dryland farmers, Nutri-cereals or Dryland cereals as it offers high nutritional benefits and Smart Food as it is good for consumers, the planet and the farmers. Since Independence, India has made impressive progress in terms of growth, education and achieving Universal health care has been a key goal since the Indian Constitution was drafted. But considering, India's growing malnutrition problem, both under-nutrition (vitamin, mineral, and protein deficiencies) and over-nutrition (obesity, metabolic syndrome, and lifestyle diseases), there is a growing awareness of the need to move to healthier, more accessible, and inexpensive diets that include millets. In addition to being naturally gluten-free and nutrient-dense, millets are also a rich source of protein, essential fatty acids, dietary fiber, and vitamin. Millets are known as "yesterday's coarse grains and today's nutri-cereals. The present study reveals perception of farmers and constraints faced by them in millet cultivation in Alluri Sita Ramaraju district. The study was conducted with the randomly selected 60 farmers from Alluri Sita Ramaraju district. The study revealed that more than half (55.00%) of the respondents have medium level of perception, followed by low level of perception (26.67%) and high level of perception (18.33%). It also revealed the technical, labour, economic and marketing constraints of the farmers concerned to millet cultivation.

Keywords: Malnutrition, millets cultivation, perception and constraints

Introduction

Millets also referred as super-grain, superfood and wonder-grain is one of the oldest foods known to humans, and probably the first grain used for domestic purposes. Millets widely sown as grain crops among was one of major the ancient foods consumed by humans (Abbasi *et al*., 2018) [1]. Millet is an important Staple cereal crop for tribals of Alluri Sita Ramaraju district of Andhra Pradesh. Millets have a relatively short growing cycle compared to traditional crops like rice and wheat. This short duration enables farmers to adapt their cropping patterns to changing weather conditions and optimise land use. Millets can be a valuable option for quick and stable yields under adverse conditions, making them a reliable crop in regions prone to drought (Sultana *et al*., 2021) [11]. These climate-resilient and nutritionally rich crops offer immense benefits to both farmers and consumers. Since Independence, India has made impressive progress in terms of growth, education and achieving Universal health care has been a key goal since the Indian Constitution was drafted. But considering, India's growing malnutrition problem, both under-nutrition (vitamin, mineral, and protein deficiencies) and over-nutrition (obesity, metabolic syndrome, and lifestyle diseases), there is a growing awareness of the need to move to healthier, more accessible, and inexpensive diets that include millets. Millets are known as "yesterday's coarse grains and today's nutri-cereals. Millets widely sown as grain crops among was one of major the ancient foods consumed by humans (Abbasi *et al*., 2018) [1]. In the quest for sustainable agriculture and food security, millet cultivation has emerged as a promising solution. Millets are nutrient-dense grains that are high in protein, fibre, vitamins, and minerals, making them a beneficial supplement to a healthy diet, boosting overall health and well-being (Ambati and Sucharitha, 2019) [2]. Furthermore, millets are high in essential nutrients like iron, calcium, zinc, magnesium, phosphorus, and potassium (Ayusha, 2023) [3]. Millets exhibit remarkable adaptability to diverse agro-climatic

conditions, making them well suited for cultivation in a wide range of environments. They have proven to be more resilient to the impacts of climate change compared to traditional crops due to their unique physiological and morphological characteristics. Millets are renowned for their exceptional drought resistance. Their deep root systems enable them to access water from deeper soil layers, allowing them to withstand prolonged periods of water scarcity. They have a natural ability to withstand high temperatures, which is becoming increasingly crucial in the face of rising global temperatures. (Bandyopadhyay *et al*., 2017) [4].

In spite of its potential, millet cultivation has witnessed a decline in recent decades in various regions around the world (Gemenet *et al*., 2016) [6]. This decline can be attributed to a significant lack of awareness among farmers regarding the benefits and importance of millet cultivation, resulting in a prevailing knowledge and information gap (Meena *et al*., 2021) [10]. To reverse this trend and harness the potential of millets, intervention programmes have been designed to empower farmers with knowledge about the nutritional, economic, and environmental benefits of millets. For millet cultivation to thrive, farmers need to be equipped with the latest techniques, best practices, and relevant information. Unfortunately, many farmers remain unaware of the nutritional benefits of millet, their resilience to climate change, and the potential market opportunities they offer. This lack of awareness restricts the widespread adoption of millet cultivation, limiting its impact on food security and sustainable agriculture. (Kurmi *et al*., 2022) [9].

Objective

Enhancing awareness among farmers about the benefits and best practices of millet cultivation is possible when the farmers perception was studied. So, the present was designed with the objectives to study the perception of farmers and understand the reasons for their hesitation in cultivating millet and observe the suggestions provided by them in millet cultivation.

Materials and Methods

The study was conducted in Alluri Sita Ramaraju district of Andhra Pradesh with ex-post facto research design. It is systemic empirical enquiry in which the scientist does not have direct control over the independent variables because their manifestations have already occurred or they are inherently not manipulated (Kerlinger, 1969) [8]. A simple random sampling technique was used for this study. Alluri Sita Ramaraju district consists of 22 mandals out of which 6 mandals (Paderu, Hukumpeta, Munchingput, Pedabayalu, Dumbriguda and Araku) falls under Krishi Vigyan Kendra, Kondempudi jurisdictional area.

All the 6 mandals which were having intensive millets cultivation were selected purposely for the study and from each mandal one village was were purposively selected for the study. From each village 10 respondents were randomly selected. Thus, making a sample of 60 respondents for the study. Perceived advantage of millets cultivation was operationally defined as "the ability of the individuals to perceive advantages of millets cultivation considering various components namely, economically viable, ecologically sustainable, technically feasible, cost-effective, compatible to the existing farming, socially justifiable (equitable) and culturally acceptable. The perceived advantage of assessment index developed for paddy farmers by Islam et. al., 2014 [7], was used to measure the perception of farmers about the advantage of millets cultivation with necessary modifications in the present study. The perceived advantage assessment index consists of seven components as mentioned above. It was calculated by assigning a score of 5 for strongly agree, a score of 4 for agree, a score of 3 for undecided, a score of 2 for disagree and a score of 1 for strongly disagree. The component index score was arrived at by dividing the actual score obtained by an individual on the component by total maximum score for an individual on the component. It was calculated by adopting the following mathematical formula.

$$\text{Perceived advantage index} = \frac{\text{Total score of all the respondents for } i^{th} \text{ variable}}{\text{Maximum on the continuum} * \text{Total number of respondents}}$$

A schedule was developed in accordance with the objectives of the extension study and it was pre-tested. The data of this study were collected with the help of structured schedule. The collected data were classified, tabulated, analysed and interpreted in order to make the findings meaningful. The statistical measures such as percentage, mean, standard deviation and ranking methods were used in the study.

Results and Discussion

A perusal of table 1 reveals that millets were perceived as culturally acceptable with first rank, followed by Economically viable (II nd rank), Socially equitable (III rd rank), Compatible with past experience (IV th rank), Technically feasible (Vth rank), Ecologically sustainable (VI th rank) and Cost-effective (VII th rank).

A perusal of table 2 revealed that more than half of the respondents (55.00%) had medium level of perception, followed by high perception (18.33%) and low level of perception (26.67%). Thus, it shows that even though the tribals traditional staple food was millets, they didn't know benefits of millets cultivation although they were millets growers.

Constraints perceived by farmers

Despite of having medium level of perception farmers were facing some constraints. Farmers were asked to mention the major constraints faced by them in various spheres of millet cultivation. The percentage were worked out for all the constraints and accordingly ranks were given to them and presented in table 3 and fig 2. It was found that more than three fifth (61.66%) of the respondents perceived that Middlemen intervention during marketing was major constraint, followed by Lack of processing unit facilities (51.66%), Non availability of quality seed (48.33%), Labour intensive (28.33%), Lack of adequate trainings (35.00%), Low yields (21.66%) and Lack of proper marketing facilities (26.66%).

Suggestions from the farmers

For ascertaining the suggestions to overcome the constraints faced by farmers in millet cultivation, the suggestions were invited openly from them. The frequency was calculated for each suggestion and converted into percentage and ranks

were assigned accordingly. The suggestions along with their percentages are presented in Table 4 and Fig. 3.

The most important suggestions offered by millet growers to overcome constraints in millet cultivation were: Providing marketing facilities was major suggestion opined by more than two third of the growers (68.33%), followed by providing processing facilities (63.33%), Supply of quality seed (60.00%), Providing appropriate training programme (56.66%) and Government support for millet cultivation (45.00%).

Table 1: Distribution of millet growers according to their perception. (N=60)

S. No.	Level of perception	Frequency	Percentage
1	Low perception (<22.92)	16	26.67
2	Medium perception (22.93 to 32.55)	33	55.00
3	High perception (> 32.56)	11	18.33
Total		60	100.00

Table 2: Distribution of respondents according to perceived advantage in millet cultivation (N=60)

Sl. No	Particular	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	MWS	Rank
1	Economically viable	27	16	9	8	27	242	II
2	Culturally acceptable	24	19	13	4	24	243	I
3	Compatible with past experience	22	18	15	5	22	237	IV
4	Socially equitable	21	19	17	3	21	238	III
5	Cost-effective	19	19	12	10	19	227	VII
6	Technically feasible	19	21	13	7	19	232	V
7	Ecologically sustainable	17	23	9	11	17	226	VI

Table 3: Distribution of respondents according to perceived constraints (N=60)

S. No	Constraints	Frequency	Percentage	Rank
1	Middlemen intervention during marketing	37	61.66	`I
2	Lack of processing unit facilities.	31	51.66	II
3	Lack of adequate trainings	21	35.00	V
4	Low yields	13	21.66	VI
5	Labour intensive	23	38.33	IV
6	Non availability of quality seed	29	48.33	III
7	Lack of proper marketing facilities	16	26.66	VII

Table 4: Distribution of respondents according to perceived constraints (N=60)

S. No	Suggestions	Frequency	Percentage	Rank
1	Supply of quality seed	36	60.00	III
2	Providing appropriate training programme	34	56.66	IV
3	Providing marketing facilities	41	68.33	I
4	Government support for millet cultivation	27	45.00	V
5	Providing processing facilities	38	63.33	II

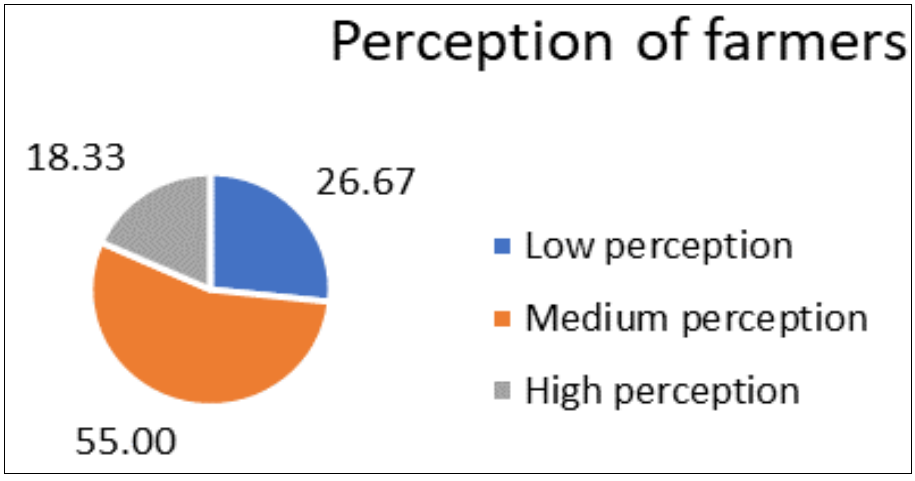

Fig 1: Distribution of respondents according to perception

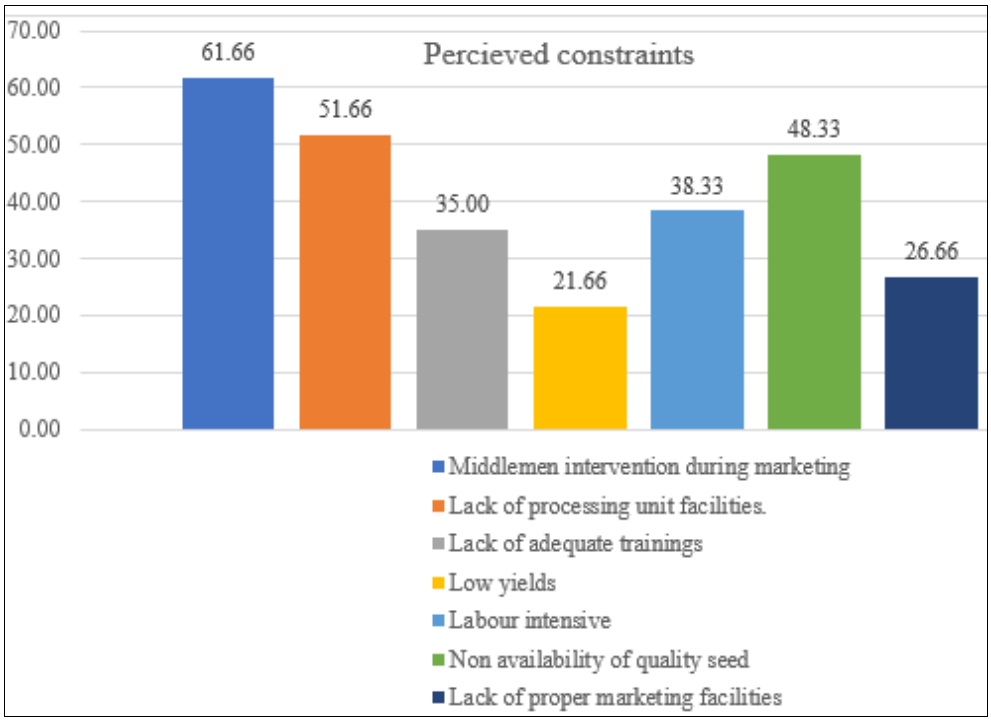

Fig 2: Distribution of respondents according to their perceived constraints

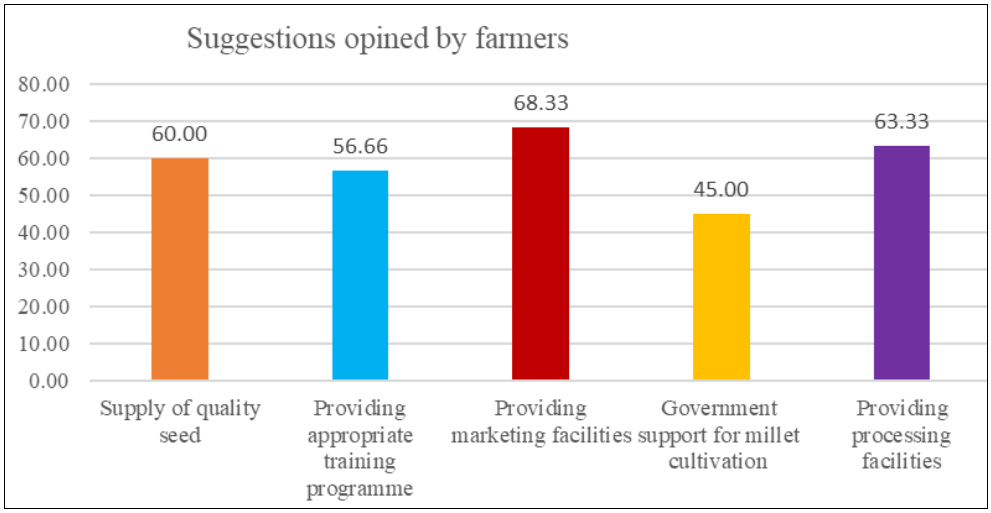

Fig 3: Distribution of respondents according to their Suggestions

Conclusion

An overview of the findings revealed that most of the millet growers were almost medium perception in millet cultivation. Hence the extension functionaries need to bestow attention on millets growers through various training programmes and awareness campaigns to increase knowledge levels of millet growers. All the important constraints were not directly related to millet cultivation. But these constraints lead to reduction in millet cultivation in upcoming years. By addressing the challenges posed by the farmers policymakers and agricultural leaders can create better ways to improve food security and develop a stronger and more adaptable farming environment in the tribal area. This research contributes to a broader understanding of factors shaping farmers' choices in crop cultivation, offering valuable guidance for sustainable and future oriented agricultural practices.

References

1. Abbasi YF, See OG, Ping NY, Balasubramanian GP, Hoon YC, Paruchuri S. Diabetes knowledge, attitude, and practice among type 2 diabetes mellitus patients in Kuala Muda district, Malaysia – a cross-sectional study. Diabetes Metab Syndr Clin Res Rev. 2018;12(3):1057-1063. doi:10.1016/j.dsx.2018.06.025.
2. Ambati K, Sucharitha KV. Millets review on nutritional profiles and health benefits. Int J Recent Sci Res. 2019;10(7):33943-33948. doi:10.24327/IJRSR.
3. Ayusha M. Millets for sustainable agriculture. Farm Chronicle – An Agric Newslett. 2023;2(1):10-15.
4. Bandyopadhyay T, Muthamilarasan M, Prasad M. Millets for next generation climate-smart agriculture. Front Plant Sci. 2017;8(1):1266-1228. doi:10.3389/fpls.2017.01266.
5. Gayathri P, Manimozhi K. Bridging the knowledge gap: Enhancing awareness among farmers about millet

cultivation. Curr Agric Res. 2024;12(1):286-293.
6. Gemenet DC, Hash CT, Sy O, Sanogo MD, Zangre RG, Leiser WL, Haussmann BIG. Pearl millet inbred and testcross performance under low soils nitrogen conditions in Mali. Crop Sci. 2016;56(2):655-666. doi:10.2135/cropsci2015.06.0371.
7. Islam MA, Quli SMS, Rai R, Angrej A. Exploration of variables redacting livelihood assets status of tribal communities subsisting in forests of Jharkhand, India. J Hum Ecol. 2014;47(3):241-242.
8. Kerlinger FN. Foundations of behavioural research. New Delhi: Surjeet Publications; 1969. p. 198-224.
9. Kurmi A, Kaushik S, Pandey SK, Nagre S, Shweta S, Thomas M. Traditional knowledge-based agricultural practices in tribal dominated district Anuppur, Madhya Pradesh. Plant Sci Today. 2022;9(3):52-62. doi:10.14719/pst.1882.
10. Meena RP, Joshi D, Bisht JK, Kant L. Global scenario of millets cultivation. In: Millets and millet technology. 2nd ed. Singapore: Springer; 2021. p. 33-50. doi:10.1007/978-981-16-0676-2_2.
11. Sultana S, Ismail MR, Hamid AA, Rahman MM. A comprehensive review on the nutritional composition and health benefits of millets and their heat stress tolerance mechanism. Foods. 2021;10(3):528. doi:10.3390/foods10030528.