Biological Forum – An International Journal **14(3): 1512-1517(2022)**

ISSN No. (Print): 0975-1130
ISSN No. (Online): 2249-3239

Knowledge of Farm Families on Millets in Selected Districts of Telangana State

A. Lalitha[1*], R. Neela Rani[2], R. Geetha Reddy[3], T. Kamalaja[4] and A. Meena[5]

[1] Ph.D. Scholar, Department of Extension Education and Communication Management, College of Community Science, PJTSAU, Hyderabad (Telangana), India.
[2]Principal Scientist (Extn.) & Unit Coordinator, All India Coordinated Research, Project (AICRP), PJTSAU, PG&RC, Rajendranagar, Hyderabad (Telangana), India.
[3]Professor & University Head, Department of Extension Education and Communication Management, College of Community Science, PJTSAU, Hyderabad (Telangana), India.
[4]Senior Scientist (FN), All India Coordinated Research Project, PJTSAU, PG&RC, Rajendranagar, Hyderabad (Telangana), India.
[5]Assistant Professor, Department of Statistics and Mathematics, College of Agriculture, PJTSAU, Hyderabad (Telangana), India.

(Corresponding author: A. Lalitha)*
(Received 14 July 2022, Accepted 27 August, 2022)
(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: Millets are acceptable varieties to achieve food and nutritional security. Millets produced and consumed traditionally in India shown a decline in area and production except for pearl millet. These crops are getting extensive attention because of their health benefits and environment-friendly nature. The present study was surveyed on the availability and knowledge levels of farm families on millet utilization through media intervention, out of the total respondents, the majority (48.33%) of the respondents had two types of millets, *i.e.*, finger millet and sorghum from Mahbubnagar and sorghum and pearl millet from Nalgonda district. More than half (83.00%) of the respondents were using store house to store their crop yield, before intervention knowledge on millet utilization in over all respondents belonged to low knowledge (83.00%) and after media intervention (88.67%) had high knowledge, the data indicated that in both districts the t-calculated value had positive knowledge levels among farm families after media intervention.

Keywords: Millet, knowledge, nutritional security, food, pearl millet, media, intervention.

INTRODUCTION

In India, millets have been consumed from time age-old, with symbolic importance, as they are sacred to the farmers. Moreover, millets have been widely accepted due to their sufficient qualities. After the emergence of the Green Revolution, the highly productive varieties of rice and wheat were widely promoted, which gradually hindered the expansion of millets production. Millets are resilient crops with tolerance against extreme climatic stress including drought and flood and can be considered ideal crops of the 21st Century where we face depleting natural resources and an era of climate change. Millets are also beneficial in terms of nutritional sufficiency since they contain various vitamins and minerals and are rich in proteins and fibres. The production of millets has been gaining increased importance in nations that are populous, malnourished, and facing significant climatic uncertainties (Source: knowledge paper on millets, the future super food of India 2022). Millets are gluten free, hence people suffering from celiac disease or gluten sensitivity can incorporate millets into their diet. They have a low glycaemic index (GI), and their intake reduces the risk of type 2 diabetics (diabetes millets). In India, a large number of underprivileged people suffer from under nutrition, particularly micronutrient deficiencies (Hidden hunger), but on the other hand, there is a growing incidence of health problems like obesity, diabetes, and cardiovascular diseases etc. In this context, millets hold great potential to address these issues (Das, 2019).

Among the various media, which contributed significantly for rapid spread of information on agriculture, education, health and entertainment programmes are print and electronic media. Spreading information through various media interventions (print and electronic media) with its vastness and where the members are illiterates and living in rural areas and inaccessible areas, is very important because they are not quick in spreading information but also very efficient. Media interventions are important due to its unique chrematistics like wide coverage, credibility with source, message is easily understandable, easily convince farm families and get them ready to use. Hence the present study was studied on the availability and knowledge levels of farm families on millet utilisation through media intervention

Kusuma *et al.* (2011) study focused on production and value addition in foxtail millet in Bellary district of

Karnataka, revealed that farmers have grown variety of crops in both the seasons. Foxtail millet (18.61%), hybrid jowar (9.96%), bajra (10.82%) in kharif season. In rabi season jowar (19.91%) was cultivated. The details of foxtail millet marketing 43.33 per cent of the farmers sold their produce immediate after harvest and about 56.67 per cent of the respondents sold their produce after 3 months of harvesting. Majority of the farmers sold their produce to different agents commission agents (53.33%) followed by village merchants (36.67%) and wholesalers (10%).with regard to mode of transportation the highest number of farmers used autorickshaw (72.22%) followed by tractors (21.11%) and bus (6.67%).

Malik (2014) investigated a study on the feasibility of value-added products of pearl millet as an enterprise for rural women. The difference between pre and post exposure of knowledge was statistically significant at a 005% level of significance. Women respondents succeeded in acquiring knowledge after exposure to training on value-added products of pearl millet. It was significant at a 5% level of significance. It was observed that changes in attitude after exposing them to training in value-added pearl millet products.

Mobolade *et al*. (2019) in their study traditional methods of food grains preservation and storage in Nigeria and India observed that for their own personal use, farmers store food grains in traditional storage containers. These storage facilities are very cheap, good for the environment, and keep the goods they store fresh for a long time with a slight adjustment, these traditional storage methods might be used in modern storage spaces to protect food products from pest harm. Despite being quite effective, chemical pest treatment for stored products sometimes leaves behind hazardous residues.

Patil and Sankangoudar (2019) knowledge of minor millets among growers and nongrowers of minor millets. The result revealed that, knowledge about minor millets among the respondents analysed. Three fourth (75.00%) of the growers had medium knowledge and only one-fourth (25.00%) of the growers had high knowledge. However, there was none in the low knowledge category. A similar trend was seen in the non-growers in the same villages. In non-growing areas, about 48 percent of the non-growers had medium knowledge and only 11.67 percent of the non-growers had high knowledge, while 44.00 percent of the non-growers had low knowledge. About the government related program to millets very few of the respondents were aware of such programs.

Selvi (2019) conducted a study on the standardisation, evaluation, and impact of functional products from Kodo millet (*Paspalum scrobiculatum*) and barnyard millet (*Echinochloa frumentacae)* revealed that before nutrition education, 53 per cent of the rural women obtained a very low score of 0-25 followed by 33 per cent of the rural women having a score of 26-50, only 10.00 per cent and 7.00 per cent of the women had scores of 51-75 and 76-100 respectively. After nutrition education 72.00 per cent of the women scored maximum scores 76-100, 23.00 per cent of the women had knowledge scores ranging from 51-75. Around three and two per cent of the women had obtained scores from 26-50 and 0-25 respectively. These results indicated that nutrition education had brought about considerable change in the nutrition knowledge of the rural women.

Bundala *et al.* (2020) investigated dietary consumption knowledge and practise gaps in rural farming households; a call for nutrition education training in Tanzania. Results indicated that only 14% of the population had received nutrition education prior to the survey. The mean knowledge score was 6.9 (2.6) out of 20, with only 17.00% of the study population having Knowledge scores above the mean. The average proportion of those who had correct responses above the mean was 27.00% for knowledge and 22.00% for practise. Low nutrition education coverage and low male participation in nutrition education activities were frequently cited as barriers to household adoption of desirable dietary practices.

MATERIALS AND METHODS

The study was conducted in Mahbubnagar and Nalgonda districts, from each selected districts six mandals were selected by simple random sampling method. From each mandals, randomly two villages were chosen, a total of twelve villages were selected. From the selected 12 villages, randomly 25 respondents from each village were selected, thus comprising a total sample of 300 for the study. The data was collected by using personal interview method with the help of a structured interview schedule, combine with direct observation. Statistical procedures were used to analyse and interpret the data.

RESULTS AND DISCUSSION

The findings of the present study were tabulated, discussed, and presented below in details regarding the availability and knowledge of millets among farm families in selected districts from Telangana state.

Availability of millets. According to Table 1, the majority of respondents (48.00%) in the Mahbubnagar district reported that there were two types of millets (finger millet and sorghum) available, followed by four types (22.67%) (finger millet, sorghum, pearl millet, and foxtail millet), three types (22.00%) (finger millet, sorghum, and foxtail millet), and only one type (7.33%) of millets (finger millet) available. While, the majority of the respondents (48.00%) in Nalgonda district reported that there were two types of millets (sorghum and pearl) available followed by three types (28.00%) (sorghum, pearl, and foxtail millet) only one type sorghum millets (14.00%) available and four types (10.00%) of millets (finger millet, sorghum, pearl millet and foxtail millet).

Whereas, out of the total respondents, the majority of respondents (48.33%) in the Mahbubnagar district reported that there were two types (finger millet and sorghum) available and sorghum and pearl millet from Nalgonda district, followed by three types (25.00%) of millets, *i.e.*, finger millet sorghum, and foxtail millet in Mahbubnagar and sorghum, pearl millet and foxtail millets in Nalgonda. In respective districts, four types

of millets (16.33%) are available (finger millet, sorghum, pearl millet and foxtail millet) and only one type (10.67%) of finger millets available in Mahbubnagar and in Nalgonda sorghum millets. The results were in agreement with the studies of Sirisha *et al*. (2015); Kusuma (2011). The probable reason might be that in Mahbubnagar district, the major millets available are finger millet and sorghum since their ancestor's time. In the Nalgonda district, the major millets available are sorghum and pearl millet since the investment is low and the yield is high.

Table 1: Distribution of respondents according to their availability of millets.

Sr. No.	Availability of millets	Mahbubnagar n1=150	Nalgonda n2=150	Total n=300
1.	**Use of locally available millets**	150 (100%)	150 (100%)	300 (100%)
2.	**Type of millets available**			
a)	One (finger millet)	11 (7.33%)	0 (0.00)	32 (10.67%)
b)	One (sorghum)	0 (0.00)	21 (14.00%)	
c)	Two (finger millet and sorghum)	72 (48.00)	0 (0.00)	144 (48.00%)
d)	Two (sorghum and pearl)	0 (0.00)	72 (48.00%)	
e)	Three (sorghum, pearl, and foxtail millet)	33 (22.00%)	42 (28.00%)	75 (25.00%)
f)	Four (finger millet, sorghum, pearl millet, and foxtail millet)	34 (22.67%)	15 (10.00%)	49 (16.33%)

Storage of millets. After the completion of harvest, the whole grain millets are stored in gunny bags until they are sold and consumed. Storage facilities are available for millets at household level and mills in selected districts of Mahbubnagar and Nalgonda.

As shown in table 2 respondents stored their crop yields in different places until they are sold. In Mahbubnagar district and Nalgonda district, the majority (66.00% & 100%) of the respondents were using storage houses to store their crop yield and mills (34.00%). While, out of the total respondents, the majority (83.00%) of the respondents were using storehouses to store their crop yield and mills (17.00%).

In Mahbubnagar district, the majority of respondents (66.67%) are preserving millets for as long as the end of the following crop, followed by six months (18.00%) and one year (15.33%). This might be because they only grow millet crops twice a year, in the months of kharif and rabi. In the interim, they use the millets. The millets are treated in a number of ways before being stored for later use. While in Nalgonda district, half of the respondents (50.00%) are preserving millets for up to a year, followed by up to the end of the following crop (50.00%) and for six months (12.00%). However, out of total respondents, the majority (58.33%) of the respondents are storing millets up to the completion of the next crop, followed by one year (26.67%) and six months (15.00%).

Before storing, the millets are processed in various methods. In the Mahbubnagar district, the majority (70.00%) of the respondents were using the cleaning and drying method, followed by cleaning (19.33%), and drying (10.67%). While, in Nalgonda district, indicates that a majority (56.67%) of the respondents were using the cleaning method for millets, followed by cleaning and drying (30.00%), and drying (13.33%). Whereas, out of total respondents, the majority (50.00%) of the respondents were using the cleaning and drying method, followed by cleaning (38.00%), and drying (12.00%). The above results concluded that they are still using the traditional method of cleaning and drying due to a lack of knowledge of modern methods and infrastructure.

Similar study was conducted by Iliger (2012) the results revealed that all men and women farmers adopted winnowing by manual labour with natural wind, method of cleaning of grains of sieve by manual labour, drying grains ,gunny bags to store grains. Two to three days of sieve was practiced mainly to reduce moisture level, prevent insects attack and increase storage period similarly pre storage like drying was also followed. More than half (93.33%) of men and women farmers (91.67%) adopted staking gunny bags horizontally away from walls followed by use of wooden planks (90.00 and 98.33%). Use of neem to control the pest in stored grains (90.00 and 85%). respectively.

With regard to storage purposes of millet, in Mahbubnagar and Nalgonda districts, the majority (60.67% & 63.33%) of the respondents were storing millets for family consumption and sale, followed by family consumption (39.33% & 32.00%). Whereas out of total respondents, the majority (63.33%) of the respondents were storing millets for family consumption and sale, followed by family consumption (35.67%). Respondents who got a higher yield are selling the millets as well as utilising them for home purposes, whereas who got a lower yield are using them only for family consumption.

A similar study was conducted by Ramachandra (2018) observed that majority (63.33%) of the respondents cultivate finger millet for consumption as well as sale.

In storage quantity, In Mahbubnagar, the majority (62.00%) of respondents were storing 50-100 kg of millets, followed by 100-150 kg (16.67%), 150-200 kg (15.33%), and only 6% of millets storing 50 kg. In Nalgonda district, the majority (67.33%) of the respondents were storing 100-150 kg millets, followed by 50-100 kg (16.67%), 150-200 kg (10.00%) and only

6 per cent of millets storing 50 kg. While out of total respondents, majority (42.00%) of the respondents were storing 100-150 kg of millets, followed by 50-100 kg (39.33%), 150-200 kg (12.67%), and only 6% of millets stored 50 kg.

Table 2: Distribution of respondents according to their storage of millets.

Sr. No.	Storage of millets	Mahbubnagar n1=150	Nalgonda n2=150	Total n=300
1.	**Type of storage**			
a)	Store house	99 (66.00%)	150 (100%)	249 (83.00%)
b)	Any other(mills)	51 (34.00%)	0 (0.00%)	51 (17.00%)
2.	**Storage time**			
a)	Up to completion of next crop	100 (66.67%)	57 (38.00%)	157 (52.33%)
b)	6 months	27 (18.00%)	18 (12.00%)	45 (15.00%)
c)	1 year	23 (15.33%)	75 (50.00%)	98 (32.67%)
3.	**Processing methods after harvesting**			
a)	Cleaning	29 (19.33%)	85 (56.67%)	114 (38.00%)
b)	Drying	16 (10.67%)	20 (13.33%)	36 (12.00%)
c)	Cleaning and drying	105 (70.00%)	45 (30.00%)	150 (50.00%)
4.	**Storage purpose**			
a)	Family consumption	59 (39.33%)	48 (32.00%)	107 (35.67%)
b)	Family consumption and sale	91 (60.67%)	102 (68.00%)	193 (63.33%)
5.	**Quantity stored for utilization**			
a)	50kg	9 (6.00%)	9 (6.00%)	18 (6.00%)
b)	50-100kg	93 (62.00%)	25 (16.67%)	118 (39.33%)
c)	100-150kg	25 (16.67%)	101 (67.33%)	126 (42.00%)
d)	150-200kg	23 (15.33%)	15 (10.00%)	38 (12.67%)

Knowledge of Farm Families towards Millets. Respondents were asked to indicate their knowledge of millet use in the form of a three-point continuum I don't know, somewhat know and I know with score 1, 2, 3 were given, the respondent's knowledge points were calculated by summing up all the respondent's points obtained from the respondent at all scores. The minimum and maximum scores obtained were 12 and 30, respectively, and respondents were divided into three categories: low, medium, and high. To determine the increase in knowledge, the respondents' knowledge levels were surveyed before and after the test, and the results are presented in table 3. Table 3 shows that in the Mahbubnagar district, more than half (73.33%) of the respondents had low level of knowledge, followed by medium (20.67%) and high (6.00%). This might be due to the lack of knowledge and awareness regarding the use of millet, so there is a need to provide intervention on millet utilization. In Nalgonda district, the majority of respondents (88.00%) had low level of knowledge, followed by medium (7.33%) and high (4.67%). They only consume sorghum and pearl millet because millet production is low. Therefore, we need to educate them on how to use the different types of millet in the market and encourage them to begin producing them as a local source. However, out of the total respondents, the majority (80.67%) of the respondents had low level of knowledge, followed by medium (14.00%) and high (5.33%). Similar study reported by Selvi (2019).

Table 3: Knowledge of farm families towards millets before media intervention.

Sr. No.	Category	Mahbubnagar (n1=150)		Nalgonda (n2=150)		Total (n=300)	
		Before intervention		Before intervention		Before intervention	
		F	%	F	%	F	%
1.	Low (10-16)	110	73.33	132	88.00	242	80.67
2.	Medium (17-23)	31	20.67	11	7.33	42	14.00
3.	High (24-30)	9	6.00	7	4.67	16	5.33

It could also be observed from table 4 that, in Mahabubnagar district, the majority of the respondents, (90.00%) had high level of knowledge followed by medium (8.00%) and low (2.00%). However, in Nalgonda district, the majority (76.00%) of the respondents had high level of knowledge followed by medium (16.00%) and low (8.00%) whereas, out of the total respondents, majority (83.00%) of the respondents had high level of knowledge followed by medium (12.00%) and low (5.00%) levels. Similar study reported by Selvi (2019).

After intervention and communication, respondents easily understood the importance of utilizing millets, changes have been brought in their knowledge. The media intervention effectively worked on the respondents to consume millets on a regular basis along with other cereals like rice and wheat.

Table 4: Knowledge of farm families towards millets after media intervention.

Sr. No.	Category	Mahbubnagar (n1=150)		Nalgonda (n2=150)		Total (n=300)	
		After intervention		After intervention		After intervention	
		F	%	F	%	F	%
1.	Low (10-16)	3	2.00	12	8.00	15	5.00
2.	Medium (17-23)	12	8.00	24	16.00	36	12.00
3.	High (24-30)	135	90.00	114	76.00	249	83.00

Significance in knowledge on millet utilization among farm families after the media intervention. The 't' test was applied to test the significance difference between before and after knowledge intervention.

It is clear from table 5 that the computed "t" value was found to be a significant difference in knowledge regarding millet utilization after media intervention, as the t-value was found at a 1% level of probability. Thus, the null hypothesis was rejected and the empirical hypothesis was accepted. This may be due to media intervention on millet utilization, which increased knowledge of respondents on the concept and importance of millets and different methods of preparation and utilization of millets. Thus, there was a significant difference in knowledge after giving the intervention. The similar study conducted by Selvi (2019) and Malik 2014.

Table 5: Significance in knowledge on millet utilization among farm families after the media intervention.

	Knowledge	Mean	Difference	SD	t-value	Prob<t
Mahbubnagar	Pre test	13.41	14.61	4.50	39.05**	0.0001
	Post test	28.02				
Nalgonda	Pre test	14.06	13.30	5.84	27.85**	0.0001
	Post test	27.36				
Total	Pre test	13.76	14.20	4.78	51.47**	0.0001
	Post test	27.96				
	Post test	27.36				

** = Significant at 0.01 level of probability

CONCLUSION

Millets, also known as "coarse grains", are highly valued for both food and fibres purposes and are grown in the harshest climatic conditions such as scanty rainfall or infertile soil. They are resistant to both biotic and abiotic stress and can give a handsome amount of yield despite unfavourable climatic conditions. Millets are the super foods of the present and future .Today media interventions are mainly attracting attention, stimulating the interest and desire among farm families for further inquiries and information, improving knowledge, attitude, and utilisation of millets. Due to enhanced usage of technology and changes in the behaviour of society, further, the findings inferred that the video exposed on millet utilization acted as an intervening variable in changing and increasing the cognitive domain of respondents. The video exposed was satisfied with the overall visual quality and overall sound quality, the classification of content into different parts, the appropriate sequencing of the programme and the clarity of the picture. It is concluded that the video method of presentation is an audio-visual medium which involves a greater number of senses than the subjects, thereby reducing the monotony and thereby increasing the understanding of the difficult steps in an easier manner.

FUTURE SCOPE

Media as a communication tool should be effectively used by the policy maker, extension personnel's for disseminating the importance of millet consumption and production.

Acknowledgement. I would like to express my heartfelt gratitude to my chairperson and the members of my advisory committee for providing me with excellent guidance throughout my studies.

Conflict of Interest. None.

REFERENCES

Bundala, N., Kinabo, J., Jumbe, T., Bonatti, M., Rybak, C., and Sieber, S. (2020). Gaps in knowledge and practice on dietary consumption among rural farming households; a call for nutrition education training in Tanzania. *International journal of food and nutritional sciences*, *71*: 341–351.

Das, B. (2019). Status, procepects and challenges of millets as nutri-health food for enhance nutritional security in

India: stakeholders' analysis. 2019. *M.Sc. Thesis*. Indian Agricultural Research Institute, New Delhi. India, 1-124.

Iliger, P. Y. (2012). Production and post-harvest management practices of minor millets by farmers of Haveri district of Karnataka. *M.Sc. Thesis*. University of agricultural sciences, Dharwad, 1-100.

Knowledge paper on millets, the future super food of India (2022). The Associated Chambers of Commerce and Industry of India, 4th Floor, YMCA Cultural Centre and Library Building, 01, Jai Singh Road, New Delhi-110001, Web: Www.Assocham.Org

Kusuma, D. K. (2011). Production and value addition in foxtail millet in Bellary district – an economic analysis. *M.Sc. Thesis*. University of agricultural sciences, Dharwad, 1-71.

Mobolade, A. M., Bunindro, N., Sahoo, D. and Rajashekar, Y. (2019). Traditional methods of food grains preservation and storage in Nigeria and India. *Journal of Animal of Agricultural Sciences, 64*: 196-205.

Malik, P. (2014). Feasibility of value-added products of pearl millet as an enterprise for rural women. M. Sc. Thesis. Chaudhary Charan Singh Haryana agricultural University, 1-94.

Patil, M. and Sankangoudar, S. (2019). Consumption pattern of minor millets among growers and non-growers of minor millets. *Journal of Pharmacognosy and Phytochemistry, 8*(3): 3726-3729.

Ramachandra, S. M. (2018). Extent of adoption of recommended cultivation practices of finger millet in Kolhapur district. *M. Sc. Thesis*. Mahatma Phule Krishi Vidyapeeth Rahuri, Maharashtra, India. 1-99.

Selvi, L. S. (2019). Standardization, evaluation and impact of functional products from kodo millet (*Paspalum scrobiculatum*) and barnyard millet (Echinochloa Frumentacae). *Ph.D. Thesis* Tamil Nadu Agricultural University, 1-210

Sirisha, B., Rao, B. D. and Radhika, P. (2015). Assessment of millets utilization and marketing in Medak district of Telangana state. *Research journal of agricultural sciences, 6*: 1613-1615.

How to cite this article: A. Lalitha, R. Neela Rani, R. Geetha Reddy, T. Kamalaja and A. Meena (2022). Knowledge of farm Families on Millets in Selected Districts of Telangana State. *Biological Forum – An International Journal, 14*(3): 1512-1517.