Research Article

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Study on Knowledge about Millets farming practices in Prayagraj and Bhadohi district of Uttar Pradesh

[1]Pradum Maurya, [2]Alimul Islam, [3]Ashutosh Mishra

[1]M.Sc. (Ag.) Ag. Ext., Institute of Agriculture and Natural Sciences, Deen Dayal Upadhyay Gorakhpur University, Gorakhpur, U.P.,
[2]Subject Matter Specialist, Agricultural Extension, K.V.K., Kishanganj, (Bihar Agricultural University, Sabour, Bhagalpur, Bihar, India),
[3]Ph.D. Scholar, Department of Agricultural Extension Education, College of Agriculture, A.N.D.U.A.T. Kumarganj, Ayodhya, U.P.

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ABSTRACT

Millets are acceptable varieties to achieve food and nutritional security. Millets are produced and consumed traditionally in India shown a decline in area and production except for Millets. In present scenario of millets cultivation in India become very small scale and our purpose of this study are to knowledge the farmers about Millets values and farming practices. Study was conducted in Prayagraj and Bhadohi districts of Uttar Pradesh. Three blocks were selected randomly i.e. Uruwa, Mandaand and Deegh based on higher number of Millets growers and from each block, four villages were selected randomly, thus total 120 respondents selected randomly from selected villages. The data was collected through pre structured interview schedule personally. The data were analyzed using appropriate statistical tools. Findings reveals that majority of the farmers have low knowledge about Millet's farming practices land preparation, seed rate, sowing time, recommended dose of FYM, best time for thinning, intercropping, harvesting, moisture content for storage while less knowledge about improved varieties, showing methods. Whereas old age farmers have good knowledge about millets farming practices, but young farmers have less knowledge about Millet's cultivation as well as millets cultivation areas have been decreases. Conclusion of this study farmers have not much knowledge about many Millets practices, he was known an average knowledge about millets farming practices.

Introduction

Indian millets are a group of nutritionally rich, drought tolerant and mostly grown in the arid and semi-arid region of India. These millets are also known as "coarse cereals" or "cereals of the poor" (APEDA 2023). Current area and production scenario of millets are 12.45 million hectares, yielding 15.53 million tons at 1247 kg/ha (ASSOCHAM, 2022). Sorghum (*Sorghum bicolor*) after rice, wheat, maize and barley, it is the world's fifth most important cereal crop in terms of production and acreage. It is a drought-tolerant crop that can be grown in a variety of environments, including semi-arid areas. Each flower cluster contains between 800 and 3000 kernels (Sathish, 2018). Pear millets (*Pennisetum glaucum L.*) is a drought-resistant crop grown in semi-arid regions of Africa, Asia, and the Americas (Sathish, 2018). The crop is well adapted to adverse environmental conditions with rainfall less than (250 mm) and temperature of 30^0C and above (National Research Council, 1996). They are also gluten- free and have a low glycemic index marking them ideal for people with celiac disease or diabetes (Seet harama *et al.*, 2005). They provide protein, fatty acids, minerals, vitamins,

Corresponding author: mauryapradum221401@gmai.com (Pradum Maurya)

dietary fiber and polyphenols (Amadou *et al.,* 2013). Millets are C_4 plants with superior photosynthetic efficiency, short duration, higher dry matter production capacity and a high degree of tolerance to heat and drought (Yadav *et al.,* 2013). Millets have greater potential to atmospheric CO_2 in the accumulation of biomass per unit of water used and thus are recognized as crops with law carbon and water-footprints. The short life cycle of millets (10-12 weeks) as compared to other major crops (20-24 weeks) also helps in stress mitigation (NAAS, 2022). Millets as climate resilient crop photo-insensitive "do not require a specific photoperiod for flowering" and resilient to climate change. Millets can grow on poor soil with little or no external inputs. Millets are less water consuming and can grow under drought conditions and non-irrigated conditions even in very low rainfall regimes (Upadhyay, 2022).

Research Methodology

Study was conducted in Prayagaraj and Bhadohi district which is eastern part of Uttar Pradesh. The districts have been selected purposively as Prayagaraj and Bhadohi for large number of farmers involved in major millets (Sorghum and Pearl millet) cultivation. The investigation was done in three blocks Manda and Uruwa in Prayagraj and Deegh in Bhadohi Districts. Each block were four villages randomly total 12 villages were selected randomly. 10 respondents were selected from each village; thus, a total number of 120 respondents were selected randomly for the study. The data were analyzed to appropriate statistical tools.

Results and discussion

This chapter deals with the presentation of analysis and interpretation of data with view to drawing meaningful conclusions using appropriate statistical tests. The results of the various aspects under study are discussed considering the findings of the past studies and rationales are provided wherever needed. In general, this chapter presents the findings of the study under the followings section.

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads:

1. Socio-economic characteristics of Millet's growers:

Table 1.1. Socio-economic characteristics of Millet's growers

Parameter	Classification	Frequency (f)	Percentage (%)
Age	Young (up to 30 years)	28	23.33
	Middle (31 to 57 year)	70	58.34
	Old (above 58 year)	22	18.33
Education	Illiterate	02	01.67
	Primary	15	12.50
	High school and Intermediate	52	43.33
	Graduate and above	51	42.50
Occupation	Agriculture	58	48.33
	Agriculture + Labor	37	30.84
	Agriculture + Business	25	20.83
Annual Income	Low (up to 1 lakh)	30	25.00
	Medium (1.01 to 2 lakh)	81	67.50
	High (above 2.01 lakh)	09	07.50
Caste	General	32	26.67
	OBC	62	51.67
	SC	26	21.66
Farming experience	Low (up to 16 year)	18	15.00
	Medium (17 to 37 year)	82	68.34
	High (above 38 year)	20	16.66
Farming size	Small (up to 8 member)	27	22.50
	Medium (9 to 14 member)	74	61.67
	High (above 15 member)	19	15.83

Land holding	Marginal farmer (less than 1 ha.)	16	13.33
	Small farmer (1 to 2 ha.)	95	79.16
	Large farmer (more than 2 ha.)	09	07.50
Mass media exposer	Low (up to 10)	24	20.00
	Medium (11 to 12)	47	39.17
	High (above 13)	49	40.83
Extension contacts	Low (up to 3)	23	19.17
	Medium (4 to 7)	70	58.33
	High (above 8)	27	22.50

Table 1.1 reveal that majority of millets growers 58.34 per cent belonged to middle age group, while 43.33 per cent of them high school and intermediate of education, while 48.33 per cent of the farmer were included in agriculture, where 67.5 per cent were belonged to medium annual income (1.01 to 2 lakh), while 51.67 per cent farmer belonged OBC category, while farmer 68.34 per cent had a medium level of farming experience, while 61.67 per cent farmer belonged to medium size of family and 79.16 per cent were had small land holding of farmer. It was found that 40.83 per cent of farmers had high mass media exposers and most of the farmers 58.33 per cent had medium level extension contact. Similar findings were also reported by Dhruw *et al*., (2012) and Ramachandra, (2018).

2. The Knowledge of the respondents about improved millets farming practices:

It refers to the respondents' knowledge of the recommended cultivation practices of millets crop, which plays a key role in maximizing profit by adopting new improved technology. The information pertaining to the knowledge of millets growers was collected, tabulated, analyzed and classified into three categories based on mean and S.D. and presented in Table-2.

Table-2.1 Knowledge level of respondents recommended Millet's farming practices

Sr. No.	Recommended improved cultivation practices	Knowing	Not knowing
		f (%)	f (%)
1.	Land preparation-	120	00
	Harrow, Rotavator	(100)	
2.	Improved varieties-	24	96
	Sorgham-CSH11, CSV1, CSV11 Bajra - Pusa444, HHB197Super Boss, Bio 448, MP 7872, JBJ 3, PC 383	(20%)	(80%)
3.	Seed rate-	120	00
	Jower- 8-10kg/ha	(100)	
	Bajra- 3-5kg/ha		
4.	Sowing time-	110	10
	Jun-July	(91.67)	(08.33)
5.	Sowing method:	115	05
	Broadcasting	(95.84)	(04.16)
	Planting	37	83
		(30.83)	(69.17)
6.	Spacing-	29	91
	45×12cm	(24.16)	(75.84)

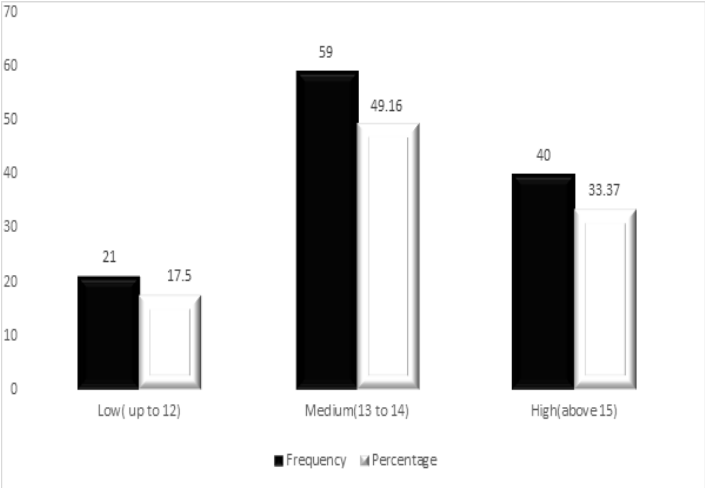
7.	Dose of NPK-	99	21
	N-80, P-40, K-40	(82.5)	(17.5)
8.	Best time for FYM application-	120	00
	Pre-ploughing	(100)	
9.	Recommended dose of FYM-	120	00
	10 -15 T/ha	(100)	
10.	Best time for thinning-	109	11
	After sowing- 10-15Days	(90.84)	(09.16
11.	Disease and Insect:	77	43
	Disease-Downy mildew, Rust, Smut, Ergot, Blast	(64.16)	(35.84)
	Insect- Termites, Grasshoppers and White Grub The grey weevil and the ear head bug		
12.	Intercropping:	107	13
	Millets+ Pulses / Pigeon pea / Groundnut / Castor	(89.16)	(10.84)
13.	Harvesting:	120	00
	Harvesting by cutting the ear heads by sickle after maturity.	(100)	
14.	Moisture content for storage:	120	00
	14% - 13.5%	(100)	
15.	Market prices:	68	52
	Bajara-Rs66	(56.66)	(43.34)
	Jower –Rs35		
16.	Integrated plant protection measures:	99	21
	Weedicides (Atrazine)	(82.5)	(17.50)

Above table shows that majority of farmers had knowledge related to millets farming practices, land preparation (100%), seed rate (100%), best time for FYM application pre ploughing (100%), recommended dose of FYM (100%), harvesting (100%), moisture content for storage (100%) and moderate level of farmers had knowledge about sowing method by broadcasting and planting (38.83%), sowing time (91.67%), best time for thinning (90.84%), Inter cropping (89.16%), dose of NPK (82.5%), integrated plant protection measure (82.5%), disease and Insect (64.16%), market prices (56.66%) and improved varieties (20%).

Table 2.2 Knowledge level of respondents for recommended millets farming practices

Sr. No.	Category	Respondent (n = 120)	
		Frequency	Percentage
1.	Low (up to 12)	21	17.50
2.	Medium (13 to 14)	59	49.16
3.	High (above 15)	40	33.37
	Total	**120**	**100.00**

According to table-2.2 most respondents (49.16%) had a medium level of knowledge about recommended millet farming practices, while the remaining (17.50%) and (33.37%) had a low and high level of knowledge about millets grower recommended farming practices. It can be concluded that majority of millets growers possessed a medium level of knowledge. They could be because majority of millets growers had a medium level of education (high school and intermediate), medium mass media contact, medium extension contacts, medium social participation, and medium millet cultivation experience. Deshmukh *et al.,* (2014) reported similar findings when researching farmers' knowledge of improved cultivation practices in the Kharif jowar Nanded district. Patil *et al.,* (2019) conducted research on minor millet knowledge among growers and non-growers in the Dharwad district of Karnataka. In comparison to Prayagraj, Bhadohi had the highest level of farmer knowledge of millet cultivation.



Conclusion

In recent years, millets farming area has reduced, because millets mostly grow in dry land farming areas, but we noticed that when the farmers there got better irrigation facilities, they started switching to other crops. Medium level of knowledge about millets farming practices found. This study found that majority of farmers have knowledge about Millet's farming practices land preparation, seed rate, sowing time, recommended dose of FYM, best time for thinning, intercropping, harvesting, moisture content for storage while less knowledge about improved varieties, showing methods. We need to step forward to millets production areas increases as well as giving knowledge about millets farming practices to young farmers and motivate them, providing trainings for modern era farming practices related to Millets production.

References:

APEDA (2023). Indian millets. https://apeda.gov.in/apedawebsite/SubHead_Products/Indian_Millets.htm

ASSOCHAM (2022). Millets: The future super food for India.

Amadou, I., Gounga, M. and Le, G.-W. (2013). Millets: nutritional composition, some health benefits and processing - a review. Emirates Journal of Food and Agriculture, 25(7), 501-508.

Deshmukh, R. H., Kadam, R. P. and Bhandari, S. D. (2014). Knowledge level of the farmers regarding improved cultivation practices of Kharif jowar. *Advance Research Journal of Social Science*, *5*(2), 219-223.

NAAS, (2022). Promoting Millet Production, Value Addition and Consumption, New Delhi. National Academy of Agricultural Sciences, 24, 114.

National Research Council (1996). Lost crops of Africa, Grains, vol I. National Academies Press, Washington, DC, https://doi.org/10.17226/2305.

Patil, M. and Sankangoudar, S. (2019). Knowledge of minor millets among growers and non-growers of minor millets. *The Pharma Innovation Journal*, 8(5),187-190.

Sathish, G. (2018). The story of millets. Karnataka State Department of Agriculture, Bengaluru, India with ICAR-Indian Institute of Millets Research, Hyderabad, India.

Seetharama, N., Rao, B. Dayakar. and Karthikeyan, K. (2005). Impacting yield stability and reducing the variability through development of suitable genotype is the most prioritized goal of crop improvement research. The Hindu survey of Indian agriculture.

Upadhyay, vinoda (2022). Creating awareness about millets. https://www.slideshare.net/vinodupadhyay14661/creating-awareness-about-milletspptx.

Dhruw K.S., Sengar R.S., YadawKedarNath and Suryawanshi R. (2012). Analysis of socio-economic profile of maize growers in Kanker district of Chhattisgarh. *Journal of Plant Development Sciences*, 4(2), 137-142.

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.