



Socio-Economic Characteristics of Pearl Millet Variety AHB-1200 Adopters and Non-Adopters in Chhatrapati Sambhaji Nagar District of Marathwada Region

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(Received 27 November 2023; Accepted 05 January 2024)

(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: Present study was designed to study Socio economic characteristics of selected Pearl millet growers in Chhatrapati Sambhaji Nagar district of Maharashtra. The most important factor which decides the awareness and adoption level of any new varieties, methods or technology in agriculture sector is socio-economic conditions of farmers. Using multistage sampling technique two tehsil viz., Paithan and Vaijapur. from Chhatrapati Sambhaji Nagar were selected for study. Total 120 respondents were selected for study i.e. 60 adopter and 60 non-adopters. Paper is focused to assessment the socio-economic characteristics of AHB-1200 adopters and non-adopters like age, gender, education, farm size, annual income, occupation, land holding, family size, farming experience, etc. Study conclude that average age of adopter and non-adopter was 43 and 48. Most of the respondents in study area were male. Average annual income of adopter and non-adopter was 202483.0 and 188800.0. Majority of respondents completed Secondary education. The average size of land holding of AHB-1200 adopter and non-adopter was 2.42 ha and 2.15 ha, respectively. Majority of respondents belongs to nuclear family i.e. 83.33 per cent in adopter and 61.67 per cent in non-adopter whereas just 16.67 per cent adopters and 38.33 per cent non-adopters in the study region are members of the joint family. The study findings demonstrated that adopters of AHB-1200 had higher average level of social participation 0.91 compared to 0.33 for non-adopters.

Keywords: Pearl millet, occupation, family income, farm size, education.

INTRODUCTION

Millets are one of the traditional grains that have been used for food, animal feed and fodder. They are also popularly known as “Nutri-Cereals” because of their abundant nutritional content. They are the species of small-seeded grasses in the family Poaceae. The word millet comes from the French word “Mille” which means “thousand”, meaning that a handful of millet can hold up to a thousand grains (Dayakar Rao *et al.*, 2022). They can be grown in arid and semi-arid tropics in the world. Most of the millets are endemic to India.

Pearl millet (*Pennisetum glaucum*), also known as Bajra, is a cereal crop grown in tropical semi-arid regions of the world primarily in Africa and Asia. It is well adapted to production systems characterized by low rainfall (200-600 mm), low soil fertility and high temperature, and thus can be grown in areas where other cereal crops, such as Wheat or Maize, would not survive. It has various names such as Pearl millet, cattail or spiked millet in English. It is known as ‘kumbu’ in Tamilnadu, ‘Dukhen’ in Arabic and ‘Mahangu’ in Africa (Gupta *et al.*, 2022).

Pearl millet is the sixth most important cereal crop after Rice, Maize, Barley, and Sorghum in the world. According to FAOSTAT (2021), the global millet production in 2019-20 was 84.17 million metric tonnes from an area of 70.75 million hectares, of which 20.50 per cent is produced in India. In 2022, the global area under millets stood at 71.70 million Hectares, with negligible change compared to 71.88 million Hectares area under millets in the year 2012. The global production of millets stood at 90.65 million metric tonnes in 2022, growing at a decadal (2012-2022) CAGR of 0.3 per cent from 88.31 million metric tonnes in 2012. India was the highest millets producing country in the year 2022 with 17.60 million metric tonnes production, contributing to 19 per cent of the global production. India is the largest producer of millets in the world. The total area under Pearl millet cultivation 7.55 million hectares. The production of Pearl millet is 9.22 million tones which stands the fourth after rice, wheat, maize and barley and productivity of 1374 kg/ha. Maharashtra state is the third largest in area and second in respect of production under Pearl millet. The area under Pearl

millet cultivation in Maharashtra is 666.72 thousand ha, production 618.58 thousand tonnes and productivity 927.80 kg/ ha in the year of 2021-22. In productivity Maharashtra stands seventh rank and shares 15.3 per cent of growing in India. In Chhatrapati Sambhaji Nagar District, the area under Pearl millet crop is 1145.13 (hundred) hectares, with production of 758.22 (hundred) tonnes and productivity of 662.12kg per hectare in 2021-2022.

National Agricultural Research Project under Vasant Rao Naik Marathwada Agricultural University, Parbhani, All India Coordinated Millet Improvement Project, Jodhpur and ICRISAT, Hyderabad, developed biorich hybrid varieties AHB-1200 FE of high iron and zinc millet at national level. It has significant characteristics of higher iron (88 mg/kg) and zinc (39 mg/kg) than regular Pearl millet. AHB-1200 variety is resistant to Gosavi and Kharpa disease.

METHODOLOGY

The sample comprised 120 respondents from six different villages of the Chhatrapati Sambhaji Nagar district of Maharashtra state. Data were collected through a personal interview schedule for research. Descriptive graph statistics of all the respondents were compared through appropriate software. Frequency, percentage, means, ranks order were the main statistical tools that were used in this study. A list of independent variables for the present study was selected. These independent variables were more relevant and significant based on everyday experiences and as per the objective included in the present study was selected. These independent variables were more relevant and significant based on everyday experiences and as per the objective included in the present study. These were: Gender, age, farming experience, education, family size, and, occupation, family type, farm size, family income, and social participation of the respondent.

RESULTS AND DISCUSSION

An objective is undertaken for study to know the socio-economic profile of AHB-1200 adopters and non-adopters an insight in the Table 1 showed that the majority of adopters and non-adopter belongs to middle age group i.e., 43 to 48. The average age of the AHB-1200 adopters and non-adopters was 43.5 and 48.63. Mostly regarded as active productive age, meaning that the population is active. This middle-aged group people also having a great sense of responsibility, enough energy and hardworking than older and too young aged AHB-1200 growers and non-growers in study area. This result is also matched with Gamanagatti and Dodamani (2016). The proportion of male to female farmers are 95 per cent to 5 per cent and 93.33 per cent to 6.67 per cent of Pearl millet adopters and non-adopters, respectively. Most of the respondents in study area were male. Finding was similar with Okeke-

Agulu and Onogwu (2014) showed that 90 per cent respondents were male. According to the study findings, the majority of AHB-1200 adopters 83.33 per cent and non-adopters 61.67 per cent belong to the nucleus family. The result also revealed that AHB-1200 adopters had higher levels of social participation, with an average of 0.91 compared to 0.33 for non-adopters.

Education is important factor for adoption of new technologies and varieties. The sample respondent's educational status was assessed, with zero points awarded for illiteracy and one point awarded for each succeeding standard of education reached. Education level of adopters and non-adopters farmers presented in Table 1, AHB-1200 adopters (10 per cent) and non-adopters (20 per cent) in the research area were illiterate. 13.33 per cent of adopter and 28.33 per cent of non-adopter has primary education, 21.66 percent of AHB-1200 adopter and 23.33 per cent non-adopter has secondary education, 25 per cent of AHB-1200 adopters and 11.67 per cent of non-adopters has higher secondary education and 18.33 per cent of grower and 10 per cent of non-adopter was graduated level educated and the result is consistent with findings of Perke *et al.* (2018). It is observed from the Table 1 that the farming experience AHB-1200 Pearl millet variety adopter and non-adopter was 22 to 19 years which indicated that the AHB-1200 Variety adopters were well experienced in the farming activities. The occupation shows area of interest of person in the field. Accordingly, he worked hard to make that business successful. It is seen from Table 1 that, out of 60 AHB-1200, 93.33 per cent adopter and 85 per cent non-adopters had agriculture as major occupation. While 5 per cent AHB-1200 adopter and 6.67 per cent non-adopters were engaged in business as major activity. Whereas, 1.67 per cent AHB-1200 adopters and 8.33 per cent non-adopters were employed in service sector.

It is observed from Table 1 that the average family size of AHB-1200 adopter was 5.61 and has 33.83 per cent male, 29.38 per cent of female and 36.80 per cent of children. The average family size of non-adopter was 6.73 and 35.15 per cent male, 33.17 per cent female and 31.68 per cent children. It indicated that were 6 members in the family of AHB-1200 Adopter and 7 members in non-adopter family, each.

Farm size depicted in Table 1, that among the farmers in the study area, 3.33 per cent of adopters and 8.33 per cent non-adopters, had less than 1 hectares. Overall, 38.33 per cent of the AHB-1200 adopters and 53.33 per cent of non-adopters, between 1 and 2 hectares and 56.67 per cent adopters and 38.33 per cent non-adopters having between 2 and 4 hectares, 1.67 per cent of adopters were land between 4 and 10 hectares. The results showed that majority of the famers had limited sizes of land for farm production. Annual family income of AHB-1200 adopters and non-adopters are 202483.0 and 188800.0, respectively.

Table 1: Socio economic characteristics of AHB-1200 Adopters and non-adopters.

Sr. No.	Particulars	Adopter		Non-adopter	
		Frequency	Percentage	Frequency	Percentage
1.	Gender				
a)	Male	57	95	56	93.33
b)	Female	3	5	4	6.67
	Total	60	100	60	100
2.	Average age	43.5	-	48.63	-
3.	Farming Experience	22	-	19	-
4.	Education				
a)	Illiterate	6	10	12	20
b)	Primary	8	13.33	17	28.33
c)	Secondary	13	21.67	14	23.33
d)	Higher Secondary	15	25	7	11.67
e)	Graduation	11	18.33	6	10
f)	Above Graduate	7	11.67	4	6.67
	Total	60	100	60	100
5.	Occupation				
a)	Agriculture	56	93.33	51	85
b)	Service	1	1.67	5	8.33
c)	Business	3	5	4	6.67
	Total	60	100	60	100
6.	Family size				
a)	Adult Male	114	33.83	142	35.15
b)	Adult Female	99	29.38	134	33.17
c)	Children	124	36.80	128	31.68
	Total	337	100	404	100
7.	Family Type				
a)	Joint	10	16.67	23	38.33
b)	Nucleus	50	83.33	37	61.67
	Total	60	100	60	100
8.	Farm size				
a)	Marginal	2	3.33	5	8.33
b)	Small	23	38.33	32	53.33
c)	Semi-medium	34	56.67	23	38.33
d)	Medium	1	1.67	0	0
e)	Large	0	0	0	0
	Total	60	100	60	100
9.	Family Income	202483.0	-	188800.0	-
10.	Social Participation	0.91	-	0.33	-

Land use pattern of adopter and non-adopter farmers

Sr. No.	Particulars	Adopters		Non-Adopters	
		Area (ha)	Percent	Area (ha)	Percent
1.	i) Irrigated	0.03	1.24	0.15	6.97
	ii) Rainfed	2.38	98.75	2	93.02
	Subtotal	2.41	-	2.15	-
2.	Uncultivated	0.01	0.41	0.00	0.00
	Grand Total	2.42	100	2.15	100

The average size of land holding of AHB-1200 adopter and non-adopter was 2.42 ha and 2.15 ha, respectively, which revealed that the AHB-1200 adopters and non-adopters were small and semi-medium farmers. In the case of the AHB-1200 adopter, 2.42 ha of land which includes 1.24 per cent was irrigated, 98.75 percent was rainfed, and the remaining 0.41 percent was uncultivated. In the case of non-adopters, 6.97 per cent of their 2.15 ha of land was irrigated, 93.02 per cent was rain fed, and no land was uncultivated

CONCLUSIONS

Profile of adopters and non-adopters was more or less similar in respect of age, it was clear from the result that most of the respondents were middle aged and it also concluded that majority of respondents were male. While the other profile of adopter and non-adopter varied in respect of land holding, annual income, social participation. Majority of adopters and non-adopters having nucleus families, regarding to family income it was reported that high in adopter and low in non-adopter.

Adopters have high level of social participation than non-adopters. Agriculture was reported as major occupation of study area followed by business and service. Large no of semi medium farmers reported in study area followed by small, marginal, medium. Average of family size of adopter and non-adopter was more similar. Farming experience of adopter farmers was more than non-adopter farmers. Land use pattern high in adopter i.e., 2.42 and low in non-adopter. It can be suggested from study that need to adopt recommended improved variety in order to improve livelihood and family income.

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