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A study on profile characteristics of mustard growers and adoption gap in mustard cultivation

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Abstract

The findings of the study revealed that more than half of the respondents (57.50%) belonged to the middle age group, that is, 36 to 50 years. Nearly half of the respondents (48.33%) had education up to the secondary level. About 40.83 per cent of the respondents fell under the small landholding category, while 45.83 per cent earned between ₹3,00,001 and ₹4,00,000 annually. Majority of the respondents (71.67%) had a medium area under mustard cultivation. Further, 44.17 per cent had a medium extent of irrigation sources, 67.50 per cent had medium experience in mustard cultivation, 60.00 per cent had medium sources of information, 60.00 per cent had medium social participation, 64.17 per cent had medium innovativeness, 70.84 per cent had medium risk orientation, and 77.50 per cent had medium market orientation. A large majority (88.34%) had a high level of knowledge regarding recommended mustard production practices. Majority of the respondents (89.17%) had a medium adoption gap in mustard cultivation.

Keywords: Mustard growers, adoption gap, mustard cultivation, knowledge

Introduction

Mustard (*Brassica juncea* L.) is an important oilseed crop belonging to the family Brassicaceae. It is widely cultivated in India and is valued for its edible oil, vegetables, fodder, condiments and medicinal uses. Mustard oil is commonly used as cooking oil, while the oil cake is utilized as manure and cattle feed. India is one of the major mustard-producing countries in the world. During 2023–2024, mustard was cultivated on a large area in the country and Rajasthan was reported as the leading mustard-producing state. Maharashtra is also an important mustard-growing state, and mustard cultivation is undertaken in several districts of Vidarbha. The productivity and adoption of recommended production practices are important determinants of mustard production. Although farmers may possess knowledge of improved production practices, the extent to which these practices are actually adopted may vary. Therefore, assessment of the profile characteristics of mustard growers and the adoption gap in recommended mustard cultivation practices is useful for identifying areas requiring greater extension support. Accordingly, the present study was undertaken among FLD mustard growers in Bhandara district of Maharashtra to document their socio-economic, communication and psychological characteristics and to assess the adoption gap in mustard cultivation.

Methodology

The present study was conducted in Bhandara district of Maharashtra State. Two tahsils were selected on the basis of the maximum number of mustard growers and the implementation of Front Line Demonstrations (FLDs) by the All India Coordinated Research Project (AICRP) on Mustard, College of Agriculture, Nagpur. From each selected tahsil, four villages were purposively selected on the basis of the maximum number of mustard growers. From each selected village, fifteen FLD mustard growers were selected. Thus, the total sample size was 120 FLD mustard growers. The socio-economic, communication and psychological characteristics of the mustard growers were studied to assess their profile. Primary data were collected through personal interviews using a structured interview schedule.

The collected data were tabulated and analyzed using frequency, percentage, mean, standard deviation and equal-interval methods. For the present analysis, the respondents were classified into low, medium and high categories for the respective profile variables using the classification procedure adopted in the study. The adoption gap index was classified as low (up to 33.33), medium (33.34 to 66.66) and high (above 66.66).

Results and Discussion

Table 1: The findings of the study are presented under the following headings

Profile characteristic	Category	Frequency	Per cent
Age	Young (Up to 35 years)	18	15.00
	Middle (36–50 years)	69	57.50
	Old (Above 50 years)	33	27.50
Education	Illiterate	00	00.00
	Primary	06	05.00
	Middle	15	12.50
	Secondary	58	48.33
	Higher secondary	22	18.34
	Graduate	19	15.83
Annual income	Up to ₹1,00,000	05	04.17
	₹1,00,001 to ₹2,00,000	07	05.83
	₹2,00,001 to ₹3,00,000	19	15.83
	₹3,00,001 to ₹4,00,000	55	45.83
	Above ₹4,00,000	34	28.34
Land holding	Marginal (Up to 1.00 ha)	15	12.50
	Small (1.01–2.00 ha)	49	40.83
	Semi-medium (2.01–4.00 ha)	42	35.00
	Medium (4.01–10.00 ha)	10	08.33
	Large (Above 10.00 ha)	04	03.34
Area under mustard cultivation	Low	16	13.33
	Medium	86	71.67
	High	18	15.00
Sources of irrigation	Low	40	33.33
	Medium	53	44.17
	High	27	22.50
Experience in mustard cultivation	Low	10	08.33
	Medium	81	67.50
	High	29	24.17
Sources of information	Low	28	23.33
	Medium	72	60.00
	High	20	16.67
Social participation	Low	26	21.66
	Medium	72	60.00
	High	22	18.34
Innovativeness	Low	24	20.00
	Medium	77	64.17
	High	19	15.83
Risk orientation	Low	19	15.83
	Medium	85	70.84
	High	16	13.33
Market orientation	Low	19	15.83
	Medium	93	77.50
	High	08	06.67
Knowledge	Low	00	00.00
	Medium	14	11.66
	High	106	88.34
Adoption gap	Low	09	07.50
	Medium	107	89.17
	High	04	03.33

Age: The data presented in Table 1 indicate that the majority of the mustard growers (57.50%) belonged to the middle age group (36–50 years), followed by 27.50 per cent who belonged to the old age group (above 50 years), while only 15.00 per cent were young farmers. This indicates that mustard cultivation was predominantly undertaken by farmers in the middle-age group. These findings were supported by Parmar (2021) [7].

Education: The findings revealed that nearly half of the mustard growers (48.33%) had completed secondary education, followed by higher secondary education (18.34%) and graduation (15.83%). About 12.50 per cent had middle-level education and 5.00 per cent had primary education. None of the mustard growers was illiterate, indicating a relatively satisfactory educational status among the mustard growers. These findings were supported by Akanksha Nigam *et al.* (2024) [1].

Annual income: The findings revealed that the majority of the mustard growers (45.83%) belonged to the annual income group of ₹3,00,001 to ₹4,00,000, followed by 28.34 per cent with an annual income above ₹4,00,000. About 15.83 per cent had an annual income of ₹2,00,001 to ₹3,00,000, while 5.83 per cent earned ₹1,00,001 to ₹2,00,000 annually. Only 4.17 per cent reported an annual income up to ₹1,00,000. These findings were supported by Divya Ambarkar (2025) [3].

Land holding: The findings revealed that the majority of mustard growers (40.83%) possessed small land holdings (1.01–2.00 ha), followed by 35.00 per cent having semi-medium holdings (2.01–4.00 ha). Marginal farmers constituted 12.50 per cent, while 8.33 per cent and 3.34 per cent belonged to the medium and large landholding categories, respectively. Thus, mustard cultivation was predominantly practiced by farmers having small to semi-medium land holdings. These findings were supported by Roshani Rajpoot (2023) [9].

Area under mustard cultivation: The findings revealed that a large majority of the mustard growers (71.67%) had a medium area under mustard cultivation, whereas 15.00 per cent had a high and 13.33 per cent had a low area under mustard cultivation. This shows that most mustard growers allocated a moderate area of their land to mustard cultivation. These findings were supported by Janhavi Bisen (2025) [4].

Sources of irrigation: The findings revealed that nearly half (44.17%) of the mustard growers belonged to the medium category, followed by 33.33 per cent in the low category and 22.50 per cent in the high category. Hence, nearly half of the mustard growers had a medium level of access to irrigation sources for mustard cultivation. These findings were supported by Dolma *et al.* (2024) [2].

Experience in mustard cultivation: The findings revealed that the majority of the mustard growers (67.50%) had medium experience, followed by 24.17 per cent with high experience and 8.33 per cent with low experience. This indicates that most mustard growers had a moderate level of experience in mustard cultivation. These findings were supported by Rakesh (2016) [8].

Sources of information: A majority of the mustard growers (60.00%) belonged to the medium category, while 23.33 per cent and 16.67 per cent belonged to the low and high categories, respectively. Thus, most mustard growers had a medium level of access to agricultural information sources. These findings were supported by Parmar (2021)^[7].

Social participation: The findings revealed that the majority (60.00%) of the mustard growers had medium social participation, followed by 21.66 per cent with low and 18.34 per cent with high social participation. This indicates that the majority of mustard growers participated in social organizations and activities to a moderate extent. These findings were supported by Tiwari (2021)^[10].

Innovativeness: The findings revealed that the majority (64.17%) of the mustard growers belonged to the medium category, followed by 20.00 per cent in the low category and 15.83 per cent in the high category. Therefore, the majority of mustard growers showed a moderate tendency to adopt or try new ideas and technologies in farming. These findings were supported by Kumar *et al.* (2024).

Risk orientation: The findings revealed that the majority (70.84%) of the mustard growers belonged to the medium category, whereas 15.83 per cent and 13.33 per cent belonged to the low and high categories, respectively. This indicates that most mustard growers possessed a moderate level of willingness to take risks associated with agricultural production. These findings were supported by Parmar (2021) and Tiwari (2021)^[7, 10].

Market orientation: A large majority of the mustard growers (77.50%) belonged to the medium category, followed by 15.83 per cent in the low category and only 6.67 per cent in the high category. This suggests that although most mustard growers had a moderate orientation towards market-related activities, only a small proportion showed a high level of market orientation. These findings were supported by Divya Ambarkar (2025)^[3].

Knowledge: Knowledge about recommended mustard production practices revealed that a large majority (88.34%) of the mustard growers had a high level of knowledge, while 11.66 per cent had a medium level of knowledge. None of the mustard growers belonged to the low knowledge category. This clearly indicates that the mustard growers possessed a high level of knowledge regarding recommended mustard production practices. These findings were supported by Yadav and Mishra (2018)^[11].

Table 2; Distribution of mustard growers according to adoption gap index in mustard cultivation

Sl. No.	Adoption gap index	Frequency	Percentage
1	Low (Up to 33.33)	09	07.50
2	Medium (33.34 to 66.66)	107	89.17
3	High (Above 66.66)	04	03.33
	Total	120	100.00

Adoption gap: The results presented in Table 2 indicate that a large majority (89.17%) of the mustard growers belonged to the medium adoption gap index category, followed by 7.50 per cent who fell into the low adoption gap index category, while only 3.33 per cent belonged to the high adoption gap index category. These findings were

supported by Laxmi Bunkar (2015) and Divya Ambarkar (2025)^[3, 6].

Conclusion

Overall, the findings revealed that the typical mustard grower in the study area was middle-aged, educated up to the secondary level, and possessed a small to semi-medium land holding. Most growers cultivated mustard over a medium area and had medium levels of irrigation sources and experience in mustard cultivation. Similarly, medium levels of sources of information, social participation, innovativeness, risk orientation and market orientation were observed among the majority of the growers. Notably, a large majority of the mustard growers (88.34%) had a high level of knowledge regarding recommended mustard production practices. Despite this high level of knowledge, 89.17 per cent of the growers had a medium adoption gap. This indicates a need to strengthen extension efforts that facilitate the translation of knowledge into actual adoption of recommended mustard production practices.

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