FACTORS AFFECTING THE ADOPTION OF IMPROVED AGRICULTURAL PRACTICES OF MUSTARD CULTIVATION

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India is a major producer of oilseeds crops like groundnut, rapeseed & mustard, caster, sesamum, linseed, safflower, sunflower & soybean. India occupies the first position, both with regards to average and production of mustard in the world. The main states producing the mustard crop are U.P., Rajasthan, Haryana, M.P., Punjab, Bihar and West Bengal.

In spite of the pre-eminent position it enjoys, India is facing acute shortage of vegetable oils. The rising internal demand due to increase in population, rapid-industrialization, non-availability of new land under oilseed and the low level of productivity, are the some of the factors indicate that there is a vast scope for increasing the productivity of mustard crop by adopting improved mustard production technology. The important elements of improved management for higher yield are improved varieties, timely sowing, seed treatment, balanced fertilizers used, optimum plant population, efficient water management, weed control and timely plant protection measures. We must increase the per unit area productivity since the scope of increasing cultivated area is extremely limited. The situation therefore warrants exploration of already existing potential by making the farmers to adopt the recommended mustard production technology in the country. Keeping this in mind the present investigation entitled "Factors affecting the adoption of improved agricultural practices of mustard cultivation" has been undertaken in the following objectives–

1. To find out the extent of adoption of improved agricultural practices of mustard cultivation.
2. To find out the relationship between socio-personal, techno- economic, communication factors and adoption of improved agricultural practices of mustard cultivation.

METHODOLOGY

The study was conducted in Jalore district of Rajasthan. The cultivation of improved mustard is applicable to Bhinmal tehsil and the locale was convenient to the researcher. Out of the 22 gram panchayats 5 Gram Panchayat namely Poonasa, Fagotra, Sevari, Thobau and Nimbawas were selected randomly. Two villages from each Gram Panchayat were selected. 10 farmers from each village were selected, Thus total 100 farmers who grow the mustard were selected which formed the sample of this study.

In the light of the objectives of the present study, an interview schedule was prepared, in consultation with experts in the field of Extension and Agronomy of Agriculture College, Jobner. This interview schedule was pre-tested in non sample area to remove ambiguities and redundancies.

For the study total eleven independent variables were selected to see their effect on the adoption of improved agricultural practices of mustard cultivation. The selected eleven independent variables includes age, caste, occupation, education, social participation, size of holding, farm power, farm implements, irrigation potentiality, credit behaviour and sources of information utilized.

RESULTS & DISCUSSION

1. Extent of adoption of improved agricultural practices of mustard cultivation–The extent of adoption is the degree to which a person actually

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adopts a practice. For each practice, the extent of adoption was calculated separately. The adoption of each practice was expressed in terms of percentage, ranging from 0 to 100 in respect of different improved practices of mustard cultivation.

Table-1 Extent of adoption of improved practices of mustard cultivation

S. No.	Improved practices	Extent of adoption in %age			
		0-25	26-50	51-75	76-100
1.	Improved variety seed	–	–	30	70
2.	Seed rate	–	–	14	86
3.	Seed treatment	90	10	–	–
4.	N–Fertilizer application	–	26	60	14
5.	P–Fertilizer application	12	64	24	–
6.	K–Fertilizer application	82	18	–	–
7.	Herbicide use	78	22	–	–
8.	Pesticide application	–	36	64	–

The findings of the study revealed that most of the farmers were using recommended improved seed and seed rate because of more yield. Most of the farmers did not treat seed with chemical due to the lack of knowledge about the seed treatment. The finding regarding adoption of fertilizers revealed that only 14% of the farmers were applying recommended doze of nitrogenous fertilizer. Phosphatic fertilizer were also applied 50% less than recommended and 82% farmers were not using the potassic fertilizer. This may be due to the fact that the farmers under study were lacking proper knowledge regarding the fertilizer application as well as the cost of the fertilizer. The findings of this study are in the line with the findings of the Jay Ram & Reddy (1972). The findings regarding the adoption of weed control measures revealed that majority of the farmers using hand weeding and they were not using recommended herbicide. The plant protection measures against sawfly and aphid are very important, 64% of the farmers adopted the plant protection measures due to the severe problem of the infestation & protect the crops. The findings are in the line with the findings of Sharma & Nair (1974).

2. Relationship of selected independent variables with extent of adoption about improved agricultural practices of mustard cultivation–The adoption of improved practices is not entirely dependent upon the inbuilt qualities of the technology itself but also on certain other factors which directly or indirectly influence the adoption behaviour of an individual. Thus, some relevant factors were selected for this study and their possible associations with the adoption of improved practices of mustard cultivation were put to empirical test. The finding pertaining to the relationship between socio-personal, techno-economic, communication variables and adoption behaviour of farmers about improved agricultural practices of mustard cultivation was presented in a logical sequence. The data were subject to correlation and regression analysis. The result have been presented in table 2. & 3. respectively.

Table 2. Relationship of independent variables with the adoption of improved agricultural practices of mustard cultivation

S. No.	Independent Variables	Zero order correlation 'r' value
1.	Age	-0.3688**
2.	Caste	0.1573
3.	Occupation	0.2257
4.	Education	0.6173**
5.	Social participation	0.1417
6.	Size of holding	0.3944**
7.	Farm Power	0.5252**
8.	Farm implements	0.5732**
9.	Irrigation potentiality	0.6652**
10.	Credit behaviour	0.3883**
11.	Source of information utilized	0.8051

** Significant at 0.01 level of probability.

Table 3. Multiple regression analysis of independent variables with extent of adoption of improved agricultural practices of mustard cultivation.

S. No.	Independent variables	b-value	s-error	t- value
1.	Age	0.1265	0.1452	0.8713
2.	Caste	-1.7447	1.2929	-1.3493
3.	Occupation	-0.9268	1.2964	-0.7149
4.	Education	0.1593	0.9358	0.1703
5.	Social participation	0.5815	0.9123	0.6374
6.	Size of holding	9.4367	3.8244	2.4656*
7.	Farm Power	2.6515	1.4166	1.8717
8.	Farm implements	-0.0282	0.1049	-0.0387
9.	Irrigation potentiality	0.1030	1.9745	0.9817
10.	Credit behaviour	2.0995	0.1387	1.0633
11.	Source of information utilized	0.6715	0.8586	5.2163**

Determination co-efficient (R^2) = 0.7915
Intercept constant (a) = 29.8269
F – calculated = 13.1179** with 11.38 d.fs.
● Significant at 0.05 level of probability.
** Significant at 0.01 level of probability.

A critical examination of data presented in table-2 reveals that education, size of holding, farm power, farm implement, irrigation potentiality, credit behaviour and sources of information utilized were positively and significantly related with adoption behaviour of farmers about improved mustard cultivation at one percent level of probability. Age was negatively and significantly related with the adoption behaviour of farmers. It means, these eight variables significantly exert their influence on the adoption behaviour of farmers. The finding is in the line in with that of Somasundram & Singh (1978).

Table 3. shows that all the independent variables taken together explained the variation in the adoption behaviour of farmers to the extent of 79.15 percent. The respective 'F' value significant at 1 percent level at 11.38 degree of freedom was 13.1179. Thus the results emplied that all the eleven independent variables world account for a significant amount of variation on the adoption behaviour of farmers. The 't' test of significance indicates that regression co-efficient (b-value) were found significant only for size of holding and sources of information utilized. The table also depicts that regression co-efficient were not significant for age, caste, occupation, education, social participation, farm power, farm implement, irrigation potentiality and credit behaviour.

CONCLUSION

For the adoption of improved agricultural practices, farmers should be exposed to improved method of mustard cultivation either through training or method demonstration. Extension agencies must make concentrated efforts in popularizing the technical know-how among the farmers. Extension personnel must keep a close & frequent contact with the farmer and get them trained in the improved technology. Then they adopting improved technology in mustard crop the productivity can be improving.

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