

CONSTRAINTS FACED BY RAPESEED AND MUSTARD GROWERS IN ADOPTION OF CHEMICAL FERTILIZERS

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ABSTRACT

The present study was conducted in Mewat area, with the purposely selection of Bharatpur district of Rajasthan. Results of the study indicated that extent of adoption of fertilizer technology is very much dependent on the age, education, income, occupation, farm power and social participation of the respondents. The study highlights that there are number of constraints which affect the process of adoption reversely, specially the extent of adoption of chemical fertilizers. Prominent constraints responsible for low adoption of chemical fertilizers were 'Lack of soil testing facility', 'Non-availability of improved agricultural implements', 'Less number of demonstrations', 'Small size of land holding', 'Recommended doses is not profitable' and 'Problematic soils'.

INTRODUCTION

Mustard is an important oil seed crop of Rajasthan. It occupies about 14.03 lakh hectares area with the production of 13.03 lakh tonnes. It shared 53.02 per cent of total area of oil seed crops of the state. The average productivity of mustard in the state is 929 Kg. per hectare, which is low as compared to other mustard growing states. The low productivity of mustard in the state is low due to many reasons. The major cause of low crop yield is inadequate supply of plant nutrients through manures and fertilizers. It is fact that purchase and use of fertilizers play an important role in crop production.

Farmers are not using required amount of chemical fertilizers in rapeseed and mustard crop because bottlenecks in use of chemical fertilizers. The purchasing and utilization behaviour of small farmers may also vary from individual to individual depending on their choice for particular brand of fertilizer and their social, psychological and economic characteristics.

Keeping this in view, the present investigation is made to know and understand the constraints as perceived by the small farmers of Bharatpur district with following objectives:

- (1) To study the socio-economic features of small

farmers in relation to the extent of adoption of chemical fertilizers in rapeseed and mustard .

- (2) To identify the major constraints responsible for low adoption of chemical fertilizers in rapeseed and mustard.

RESEARCH METHODOLOGY

Bharatpur district of Rajasthan was purposively selected for the study, out of 9 Panchayat samities only 3 Panchayat samities were selected purposively and 9 villages (3 from each panchyat samiti) were selected randomly. The 12 respondents (small farmers) were selected randomly from each of the selected villages. Thus in all 108 respondents were selected in the sample. The personal interview technique was used for data collection and rank order correlation was employed to finalize rank. The data were analyzed into average statistical measurement as X^2 test and coefficient correlation are used to find out the relationship between socio-economic background of the respondents and extent of adoption of fertilizer technology in rapeseed and mustard cultivation.

RESULTS AND DISCUSSION

Table 1 clearly shows that there was positive and significant relationship between age of the

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respondents and the extent of adoption of nitrogenous and phosphatic fertilizers. However, in case of soil amendments, non-significantly relationship was recorded with the age. The caste

of the respondents was significantly associated with the extent of adoption of nitrogenous fertilizers, phosphatic fertilizers and soil amendments.

Table 1. Showing the relationship between socio-economic characteristics of respondents and extent of adoption of fertilizer technology in rapeseed and mustard

S. No.	Socio-economic characteristics	Correlation association	Fertilizer technology		
			N	P ₂ O ₅	Soil amendments (Gypsum, sulphur)
1.	Age	r	3.50*	3.01*	2.50 NS
2.	Education	X ²	37.80*	58.8*	22.21*
3.	Caste	X ²	16.90*	20.01*	4.85 NS
4.	Family type	X ²	32.25*	15.6*	16.77*
5.	Family size	X ²	3.24* NS	4.84 NS	1.63 NS
6.	Occupation	X ²	23.24*	30.59*	14.9 NS
7.	Housing pattern	X ²	30.38*	49.92*	47.5*
8.	Size of holding	r	4.93*	21.03*	2.96 NS
9.	Income	r	7.62*	10.48*	4.61*
10.	Farm power	X ²	15.14*	14.16*	8.76*
11.	Social participation	X ²	37.1*	48.79*	47.5*

NS = Non-significant; * = Significant; X² = 0.05% level of significant; r = 0.1% level of significant

The level of education, income and farm power of the respondents were significantly related with the extent of adoption of nitrogenous fertilizers, phosphatic fertilizers and soil amendments. The family size has not been found significantly related with the extent of adoption of all components of chemical fertilizers whereas, family type, occupation and size of land holding were significantly associated with the extent of adoption of nitrogenous and phosphatic fertilizers. But above three variables were not significantly correlated with the extent of adoption of soil amendments i.e. gypsum and sulphur.

Social participation and housing pattern were found to be positive and significantly related with the extent of adoption of nitrogenous fertilizers, phosphatic fertilizers and soil amendments respectively.

The important constraints being expressed by the respondents are presented in Table 2 with regards to adoption of chemical fertilizers in rapeseed and mustard .

It is depicting from the Table 2 that small farmers explained the problem of 'lack of soil testing facility' as most important constraint and ranked

first (83.33 %). The other aspect like 'Non-availability of improved agricultural implements' (63.88 %), 'less number of demonstrations' (55.55 %) and 'small size of land holding' (50.92 %) ranked second, third and fourth respectively. The another important constraints reported were, 'high cost of fertilizer', 'lack of knowledge about method and time of application', 'lack of awareness about balance use', 'lack of assured irrigation to apply fertilizer' and 'unavailability of credit facility' with 48.18, 46.29, 45.37, 43.51 and 37.96 per cent were ranked fifth, sixth, seventh, eighth and ninth respectively. Whereas, 'lack of guidance for the use of fertilizers', 'untimely availability of fertilizers', 'lack of finance', 'adulteration in chemical fertilizers', 'uneconomic to put fertilizers', 'fertilizers deteriorates quality of soil' were also expressed by the farmers with 32.40, 28.70, 27.77, 25.92, 25.0 and 16.66 per cent, respectively and ranked tenth to fifteenth respectively. While, 'organic manures is good enough' (14.81 %), 'fertilizer is leached down with irrigation water' (13.88%), 'it is risky to invest on fertilizer' (10.28 %), 'More labour required' (9.25 %), 'problematic soil' (8.33 %) and 'recommended doses is not profitable' (7.40 %) respectively were the least important constraints perceived by the farmers.

Table 2. Overall views of the constraints as perceived by the small farmers in adoption of chemical fertilizers in rapeseed and mustard

S. No.	Constraints	Frequency	Percentage	Rank
1.	Lack of guidance for the use of fertilizers	35	32.40	X
2.	It is risky to invest on fertilizers	11	10.18	XVIII
3.	Uneconomical to put fertilizers	27	25.00	XIV
4.	Lack of assured irrigation to apply fertilizers	47	43.51	VIII
5.	Lack of awareness about balance use of fertilizers	49	45.37	VII
6.	Untimely availability of fertilizers	31	28.70	XI
7.	High cost of fertilizers	52	48.18	V
8.	Organic manures is good enough	16	14.81	XVI
9.	More labour required	10	9.25	XIX
10.	Unavailability of credit facility	41	37.96	IX
11.	Lack of soil testing facility	90	83.33	I
12.	Lack of finance	30	27.77	XII
13.	Fertilizer deteriorates quality of soil	18	16.66	XV
14.	Adulteration in chemical fertilizers	28	25.92	XIII
15.	Fertilizer is leached down with irrigation water	15	13.88	XVII
16.	Less number of demonstration	60	55.55	III
17.	Problematic soil	09	8.33	XX
18.	Lack of knowledge about method and time of application	50	46.29	VI
19.	Recommended doses is not profitable	08	7.40	XXI
20.	Small size of land holding	55	50.92	IV
21.	Non-availability of improved agricultural implements	69	63.88	II

CONCLUSION

Thus, from the above discussion, it may be concluded that the extent of adoption of fertilizer technology is very much depend upon the age, education, income, occupation, farm power and social participation of the respondents. On the basis of these findings it can be further concluded that the 'lack of soil testing facility', 'non-availability of improved agricultural implements', 'lack of demonstration' and 'small size of land holding' were most important constraints perceived by the farmers while, recommended doses is not profitable 'problematic soils', 'more labour required' and 'it is risky to invest on fertilizers' were the least important constraints.

To remove all the constraints it could be suggested that the credit facilities should be provided to the farmers. So that they can purchase more and more fertilizers and improved implements

and use them. Fertilizers should be available at each village are on reasonable cost. Extension activities must be given greater emphasis on demonstration and field visit to train the farmers about the efficient and balance use of fertilizers.

REFERENCES

- Girase, K.A. and Kamble, L.P. 1991. Constraints in adoption of fertilizers and plant protection measures in dry land bajra cultivation. *Maha. Jr. of Extn. Edu.* 10(1): 41-44.
- Venkateswara Reddy, M. 1991. Constraints in oilseed cultivation (Cotton), *Maha. J. of Extn. Edu.*, 10(2):329-331.
- Singh, D., Singh, R.K. and Chaturvedi, J. 1998. Adoption of improved groundnut production technology in Rai Barley. *Agriculture Extension Review*, 10(1): 28-30.

