

CONSTRAINTS IN ADOPTION OF IMPROVED GRAM PRODUCTION TECHNOLOGY IN RAJASTHAN

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ABSTRACT

The farmers had maximum adoption about recommended seed rate and recommended spacing while they had maximum adoption gap in use of weedicide and irrigation management in gram production technology. Non-availability of the improved seeds & chemicals were the main constraints which causes the non-adoption of improved seeds & seed treatment by the farmers. High cost factor and lack of credit facility were the main constraints in adoption of fertilizer application, use of weedicide, plant protection measures and soil treatment. Further, it may be mentioned here that lack of knowledge, and technical guidance were the general constraints in adoption of all improved practices included in the study.

INTRODUCTION

In the process of agricultural development, the prime mover is considered to be new farming technology. The benefit of such a technology is actually derived only when it is efficiently utilized by the individual farmers in their local situations. New technologies are abundant in number but only a small percentage of them have been adopted by the farmers. As a matter of fact, farmers have certain limitations. These limitations hinder the adoption of innovations. In order to raise the adoption level of farmers, identification of important reasons for non-adoption is an essential requirement. Accordingly, an attempt was made to trace out the technology wise constraints in adoption of recommended gram production technology in the present investigation. The present study was carried out with following objectives.

1. To measure the extent of adoption & adoption gap of improved gram production by the farmers.

2. To find out the constraints being perceived/ faced by the farmers in adoption of improved gram production technology and also suggest the remedial measures to overcome these constraints

RESEARCH METHODOLOGY

The present study was conducted in 8 selected tehsils of all districts in agroclimatic zone IIIa of Rajasthan. In all, there are 34 tehsils in the zone IIIa. For the selection of tehsils, all the tehsils of each district were grouped distinctly and approximately 25% of tehsils from each district were selected through simple random sampling method. This facilitated proper representation of the district and present study has covered the entire zone. Thus, in all, 8 tehsils were selected from 34 tehsils. Two VLW circles from each selected tehsil, one village from each selected VLW circle and 15 farmers from each selected village were drawn. Thus the sample consisted of 240 respondents for the study. At each

Table 1: Distribution of respondents on the basis of their extent of adoption

Extent of adoption	No.of farmers	Percentage	Calculated Mean	S.D.
Low (up to 7)	042	17.50	11.32	04.06
Medium (8 to 15)	168	70.00		
High (above 15)	030	12.50		
Total	240	100.00		

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stage, random sampling method was used. Various suitable statistical tests were used in the data analysis.

RESULTS AND DISCUSSION

A. Extent of adoption of improved gram production technology by the farmers

To get an overview of adoption level, the respondents were classified under low, medium and high adoption groups on the basis of calculated mean and standard deviation of the obtained adoption scores of the respondents.

Study of Table 2 reveals that about 70 per cent of total respondents were found to be medium adopt-

ers, while 17.50 and 12.50 per cent of the farmers were low and high adopters, respectively of improved practices of gram cultivation.

B. Individual technology-wise extent of adoption and adoption gap of gram production technology

Table-3 reveals that respondents had maximum adoption regarding recommended seed rate and recommended spacing with MPS 62.00 and 59.50, respectively. While maximum adoption gap was observed in practice of use of weedicide, irrigation management, fertilizer application and soil treatment by the farmers having 90.50, 73.00, 72.50 and 71.00 mean per cent score respectively in the study area.

Table 2.: Extent of adoption and adoption gap of the farmers with regards to different gram cultivation practices n=240

S.No.	Improved practices	Extent of adoption (MPS)	Adoption gap(MPS)	Rank order
1.	Use of HYV seeds	31.00	69.00	V
2.	Soil treatment	29.00	71.00	IV
3.	Application of Rhizobium culture	37.50	62.50	VII
4.	Seed treatment	35.50	64.50	VI
5.	Recommended spacing	59.50	40.50	IX
6.	Recommended seed rate	62.00	38.00	X
7.	Fertilizer application	27.50	72.50	III
8.	Use of weedicide	09.50	90.50	I
9.	Irrigation management	27.00	73.00	II
10.	Plant protection measures	42.00	58.00	VIII

Farmers have partially adopted the practices like use of HYV seeds (69.00 MPS), seed treatment (64.50 MPS), application of rhizobium culture (62.50 MPS) and plant protection measures (58.00 MPS) about gram cultivation.

C. Technology wise constraints in adoption of recommended gram cultivation practices

The respondents were asked to report the constraints as they perceived in adopting various improved farm practices of gram crop. Their responses for each constraints, the frequencies were converted into percentage and ranked later on. Statistical data regarding the technological constraints as expressed by the respondents in adoption of innovations have been presented in Table 4.

The findings on the technology wise constraints along with discussion have been presented as follows:-

Use of improved seeds

Table 4. reveals that with regards to use of improved seeds 68.75 per cent farmers perceived that seed is not available in time. This constraint was given the highest rank. Similarly, in order of importance, the other constraints were – it does not give more fodder (40.42%), lack of knowledge about H.Y.V. seeds (37.90%), inadequate irrigation facilities (35.50%) and seed is costly (31.25%) with ranked II, III, IV and V respectively. Longer cultivation period and produce are not good for consumption were minor constraints as faced by less than 15 per cent of the respondents.

Table 4: Technology wise constraints as expressed by the farmers

S.No.	Constraints	Percentage	Rank order
1.	Use of improved seeds		
	i) Seed is costly	31.25	V
	ii) Seed is not available in time	68.75	I
	iii) Longer cultivation period	14.58	VI
	iv) Inadequate irrigation facilities	35.50	IV
	v) Lack of knowledge about H.Y.V. seeds	37.90	III
	vi) Produce are not good for consumption	10.42	VII
	vii) It does not give more fodder	40.42	II
2.	Soil treatment		
	i) Lack of knowledge	65.42	I
	ii) Chemicals are costly	32.50	II
	iii) Less profitable	17.08	II
3.	Seed treatment		
	i) Lack of knowledge	64.42	I
	ii) Less profitable	18.33	III
	iii) Non-availability of chemicals	40.42	II
4.	Use of culture		
	i) Lack of technical guidance	48.33	II
	ii) Lack of facility of cold storage for storing	35.50	IV
	iii) Time consuming and lengthy process	52.08	I
	iv) Ignorant about advantage of culture		
5.	Recommended seed rate		
	i) Lack of knowledge	20.83	III
	ii) Lack of confidence in recommended seed rate	37.08	II
	iii) Fear of less germination	51.25	I
6.	Time of sowing		
	i) Non-availability of seed in time	57.08	I
	ii) Delay sowing not reduced the yield	20.42	III
	iii) Uncertainty of rains/irrigation facility	36.66	II
7.	Fertilizer application		
	i) It is costly	69.16	I
	ii) Uncertainty of rains/irrigation facility	39.17	IV
	iii) FYM is good enough	52.92	II
	iv) Lack of credit facility	37.50	V
	v) High dose of fertilizer spoils the soil	44.58	III
	vi) Not available in time	24.17	VI
8.	Use of weedicide		
	i) Hand weeding is better	89.17	I
	ii) High cost involved	74.58	II
	iii) Risky method	56.66	VI
	iv) Complex method	57.92	V
	v) Lack of technical guidance	64.17	IV
	vi) Not convinced its superiority over hand weeding	68.75	III

9. Plant protection measures

i) cost of chemicals are high	63.75	I
ii) Lack of knowledge about chemicals and its doses	45.00	III
iii) Required chemicals not available in time	37.90	IV
iv) Low purity of chemicals	52.42	II
v) Hazardous to men and animals	22.92	V

Soil treatment

The most important constraint responsible for technological gap with regard to soil treatment as expressed by 65.42 per cent farmers was their lack of knowledge and ranked I. This was followed by chemicals are costly (32.50%) and less profitable of soil treatment (17.08%), secured II and III rank respectively.

Seed treatment

It is evident from Table-4 that “lack of knowledge about seed treatment” was considered as the most important constraint as expressed by 64.42 per cent farmers and ranked I. This was followed by non-availability of chemicals (40.42%) and less profitable (18.33%) and ranked II and III respectively. The probable reason again seems to be the lack of knowledge.

Use of culture

With regard to use of culture, the main constraint responsible for technological gap as expressed by 52.08 per cent farmers was, “it is time consuming and lengthy process” and ranked I position. This was followed by lack of technical guidance (48.33%), ignorant about advantage of culture (40%) and lack of facilities of cold storage for storing (35.50%) and secured II, III and IV rank respectively

Recommended seed rate

The reasons for non-adoption of recommended seed rate were studied and it was observed that about 51.25 per cent of the farmers expressed the fear of poor germination. This constraint was given the highest rank. This was followed by lack of confidence in recommended seed rate (37.08%) and lack of knowledge (20.83%) and given II and III rank respectively.

Time of sowing

With regards to time of sowing, about 57% farmers faced the problem of non-availability of seed in time and ranked I. This was followed by uncertainty of rains or irrigation facilities (36.66%) and delay sowing not reduced the yield (20.42%) and accorded rank

II and III respectively. This part again needs attention by seed supplying agencies that improved seeds must be within the easy-reach of the farmers and timely.

Fertilizer application

Table-4 further reveals that about 69.16 per cent farmers gave the reason for non-adoption of fertilizer application was that fertilizer is costly and ranked I. Similarly, in order of importance the other constraints were FYM is good enough (52.92%), high dose of fertilizer spoils the soil (44.58%), uncertainty of rains or irrigation facilities (39.17%), lack of credit facility (37.50%) and not available in time (24.17%).

Use of weedicide

The most important constraint responsible for technological gap with regards to chemical control of weeds as expressed by 89.17 per cent farmers was hand weeding is better and ranked I. This was followed by high cost involved (74.58%), not convinced its superiority over hand weeding (68.75%) and lack of technical guidance (64.17%) were ranked II, III and IV respectively. Other constraints like complex method and risky method accorded V and VI rank as expressed by 57.92 and 56.66 per cent farmers respectively.

Plant protection measures

It is evident from Table 4. that high cost of chemicals was the main constraint with regard to plant protection measures as expressed by 63.75 percent farmers and highest rank was given. This was closely followed by low purity of chemicals as expressed by 52.42 farmers and ranked II. Lack of knowledge about chemicals and its recommended doses obtained III rank (45.00%). Other constraints found were; required chemicals not available in time (37.90%) and hazardous to men and animals (22.92%), secured IV and V rank, respectively.

These findings are in line with the findings of Thakur et al (1996) and Sharanesh and Kunnal (1999) who reported that timely unavailability of improved

seeds was the important reason for low adoption of improved seed. The findings of Waghmare and Pandit (1982), Singh and Mathur (1984), & Thakur et al (1996) where they found that high cost of inputs and lack of knowledge were the major constraints in adoption of seed treatment, weedicide application, plant protection measures and fertilizer application. The findings of Singh and Lahariya (1992) reported that complexity of technology and cost involved were the main constraints in adoption of new technology.

CONCLUSION

The farmers had maximum adoption about recommended seed rate and recommended spacing while they had maximum adoption gap in use of weedicide and irrigation management in gram production technology. It could be concluded from the above mentioned results that non-availability of the improved seeds was the main reason which cause the non-adoption of improved seeds by the farmers. Non-availability of chemicals cause the non-adoption of seed treatment, high cost factor and lack of credit facility were the main constraints in adoption of fertilizer application, use of weedicide, plant protection measures and soil treatment. Further, it may be mentioned here that lack of knowledge, and technical guidance were the general constraints in adoption of all improved practices included in the study.

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