

KNOWLEDGE AND ADOPTION OF MOTHBEAN PRODUCTION TECHNOLOGY IN WESTERN ZONE OF RAJASTHAN

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ABSTRACT

Present study was conducted in western arid zone of Rajasthan with selection of Bikaner and Churu districts purposely. A sample of 316 farmer cultivating mothbean since last five years was drawn for the present investigation. The study highlights that the majority of farmers had medium level of knowledge regarding mothbean cultivation. Whereas, more than half of the mothbean growers had medium extent of adoption, followed by high and low level. Further the gap between level of knowledge and extent of adoption of mothbean technology by the farmers was indicated in result. The maximum gap was observed in irrigation management technology followed by plant protection measures, sowing time and seed rate, very little gap was observed in weed management practices. Personal, Socio-economic and psychological characteristics, viz age, education, size of land holding, social participation, farm assets, achievement motivation, risk orientation, training received, extension participation, progressiveness and source of information utilized of mothbean growers were found to be significantly associated with level of knowledge and extent of adoption. However, two variables (credit behaviour and economic motivation) were found non-significantly associated with the level of knowledge and extent of adoption of farmers regarding mothbean production technology.

INTRODUCTION

The mothbean is grown in 13-14 lakh hectare areas in India, out of which major area is shared by Rajasthan to the tune of 86 per cent (11.55 lakh hectare), followed by Maharashtra, 9.27 per cent (1.25 lakh ha), Gujarat 4 per cent (0.60 lakh ha). Mothbean is considered as principal crop in western arid region of Rajasthan. Production of this crop is realized about 29.30 lakh tones at country level, next is shared by Maharashtra 12.70 per cent (30 thousand tones), Gujarat 5.40 per cent (15 thousand tones). However, productivity of mothbean is lower (197.0 kg/ha) in Rajasthan than in Maharashtra (296.0 kg/ha) and Gujarat (264.1 kg/ha). The area production and productivity greatly dependent on rainfall pattern. Therefore, whenever timely rains were received the sowing was done by farmers in larger area and whenever rains delayed or very less rains received the area of mothbean crop was squeezed.

In Rajasthan, Churu, Bikaner, Nagaur and Barmer are the major mothbean growing districts.

Churu is most important district with respect to these parameters Churu districts having maximum area (3.2 lakh ha), production (2.6 lakh tones) and productivity to the tune of 600 kg/ha, whereas other districts have low productivity almost 300 kg/ha. The average productivity of the the zone is 496 kg/ha. Whereas, the yield potential of mothbean in the zone is about 1200 to 1400 kg/ha. This indicates that mothbean production technology has tremendous potential of higher yield. Hence, it is felt to study the factors affecting knowledge and adoption levels of the mothbean growers with the following objectives.

- (1) To study the level of knowledge and extent of adoption of mothbean production technology by the growers.
- (2) To find out gap between level of knowledge and extent of adoption of recommended production technologies of mothbean cultivation by the farmers.
- (3) To ascertain the association between personal, socio-economic and psychological characteristics with the level of knowledge and

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extent of recommended production technology adoption of mothbean by the growers.

RESEARCH METHODOLOGY

Rajasthan state comprises of ten agro-climatic zones and the Zone-Ic was selected purposely for the study. The zone IC comprised of three districts, out of these, two districts Bikaner and Churu were selected randomly. From the selected districts 50 per cent panchayat samities were selected randomly (total four panchayat samities were selected out of eight panchayat samities). Ten per cent gram panchayats were selected from selected panachayat samities and hence, 19 gram panchayats were selected randomly. One village was selected randomly from each gram panchayat. A list of all the farmers who were growing mothbean crop since last 5 years was prepared for each selected village. From the list prepared 40 per cent respondents were selected randomly, making a total sample of the 316 farmers for the study purpose.

The selected farmers were interviewed with the help of a structured schedule specially prepared for the purpose. The statistical tests like mean, standard deviation, correlation coefficient and multiple regression were used to analyse the data.

RESULTS AND DISCUSSION

(1) Level of Knowledge and extent of adoption

Data in Table-1 reveals that majority (62.03%) of farmers had medium level of knowledge. whereas more than half (57.92%) of the mothbean growers had medium extent of adoption of recommended production technology, followed by low and high categories.

Table 1. Distribution of mothbean growers according to their knowledge and adoption level

Categories	Knowledge		Adoption	
	n	%	n	%
High	62	19.62	59	18.67
Medium	196	62.03	183	57.92
Low	58	18.35	74	23.41
Mean score	33.62		37.41	
SD score	8.31		10.28	

(2) Gap between level of knowledge possessed and extent of adoption of recommended production technologies of mothbean cultivation by the farmers

The data presented in Table 2 show that the overall gap between level of knowledge and extent of adoption among the farmers with regards to all major improved practices was 15.53 MPS, which clearly indicates that still there had been considerable gap between the knowledge possessed by them and extent of adoption of recommended production technologies of mothbean cultivation.

Further analysis of data in Table 2 reveal that respondents had high (90.27 MPS) knowledge about irrigation management in mothbean cultivation whereas, their extent of adoption was low (54.27 MPS) and the gap between two was observed maximum i.e. (36.0MPS). This was followed by plant protection measures, sowing time, seed rate and spacing and method of sowing with of 31.60, 26.06, 24.58 and 16.71, MPS respectively

The data in Table 2 further shows that the respondents had low level of knowledge and extent of adoption about nutrient management with 38.96 and 24.26 MPS, respectively and gap between two was MPS 14.70. The level of knowledge about application of culture was MPS 15.57 whereas, their extent of adoption was also low i.e. 5.54 MPS and gap between two was MPS 10.03, followed by field preparation, crop rotation, seed treatment and harvesting and storage measures with mean per cent score gap 9.49, 7.86, 7.21 and 6.77, respectively.

On further perusal of the table it could be inferred that a decreasing trend in the gap between level knowledge and extent adoption existed in use of improved seed with mean per cent score gap 6.26.

The least gap (4.53 MPS) was observed between level knowledge and extent of adoption of weed management practice.

It may be concluded that gap between knowledge possessed and extent of adoption about irrigation management practice by the farmers was observed maximum. This might be due to the fact that most of the farmers might not be following the recommended irrigation schedule due to the failure of supply of electric power, uncertainty in supply

of canal water and unavailability of under ground water in the study area.

Table 2. Gap between level of knowledge possessed and extent of adoption of recommended production technologies of mothbean cultivation among the farmers

n=360

S. No.	Recommended technology	level of Knowledge (MPS)	Extent of adoption (MPS)	Gap	Rank
1.	Field preparation and soil testing	60.60	51.11	9.49	VIII
2.	Use of improved seed	68.61	62.35	6.26	XII
3.	Seed rate	79.96	55.38	24.58	IV
4.	Sowing time	86.06	60.00	26.06	III
5.	Spacing and method of sowing	30.70	13.99	16.71	V
6.	Seed treatment	18.10	10.89	7.21	X
7.	Application of culture	15.57	5.54	10.03	VII
8.	Nutrient management	38.96	24.26	14.70	VI
9.	Weed management	45.10	40.57	4.53	XIII
10.	Irrigation management	90.27	54.27	36.00	I
11.	Plant protection measures	59.05	27.45	31.60	II
12.	Harvesting and storage measures	65.86	59.09	6.77	XI
13.	Crop rotation	49.79	41.93	7.86	IX
	Total	54.51	39.98	15.53	

MPS = Mean per cent score

The findings are in accordance with the findings of Patel et al., (1994), Choudhary (1999), Meti et al. (1997), Patodia (2002) and Jaitawat (2006).

(3) Association between selected characteristics and the level of knowledge and extent of adoption by mothbean growers

Table 3: Association between selected characteristics and the knowledge and adoption level of mothbean growers

n= 316

S. No.	Variables	Level of Knowledge (r value)	Extent of Adoption (r value)
1.	Age	0.2160**	0.1632**
2.	Education	0.3434**	0.2347**
3.	Size of land holding	0.2751**	0.2304**
4.	Social participation	0.1427**	0.2217**
5.	Farm assets	0.3827**	0.3039**
6.	Credit behaviour	0.0201NS	0.0967NS
7.	Achievement motivation	0.1516**	0.1423**
8.	Risk orientation	0.1496**	0.1369**
9.	Training received	0.1618**	0.2226**
10.	Extension participation	0.2398**	0.2105**
11.	Economic motivation	0.0689NS	0.0219NS
12.	Progressiveness	0.1567**	0.1641*
13.	Source of information utilized	0.2340**	0.1485*
14.	Socio-economic status	0.4652**	0.3835**
15.	Level of knowledge	0.3812**	0.4477**

* - Significant at 5 per cent level of significance, ** - Significant at 1 per cent level of significance, NS - non-significant

The perusal of data in Table 3 indicate that out of 14 independent variables, 12 variables were found to have highly significant association with level of knowledge and extent of adoption by mothbean growers i.e. age, education, size of land holding, social participation, farm assets, achievement motivation, risk orientation, training received, extension participation, socio-economic status of mothbean growers. While, progressiveness and source of information utilized by mothbean growers were found significantly associated with extent of adoption at 5 per cent level of probability. However, the non-significant association was seen between credit behaviour and economic motivation and level of knowledge (0.020, 0.068) and adoption (0.096, 0.021), respectively. The results of the present study are in line with Jaitawat (2006).

CONCLUSION

From the above discussion it can be concluded that the knowledge and adoption level of mothbean growers were found significantly dependent. Further, the gap between level of knowledge and extent of adoption of mothbean production technology was measured maximum in irrigation management, followed by plant protection measures sowing time, seed rate and spacing and method of sowing. It was also observed that least gap existed in weed management. Further, it was noticed that personal, socio-economic and psychological characteristics age, education, size of land holding, social participation, farm assets, achievement motivation, risk orientation, training received, extension participation, progressiveness, source of information utilized and socio-economic status of mothbean growers were found to have highly

significant association with level of knowledge and extent of adoption of mothbean production technology. Whereas, two variables i.e. credit behaviour and economic motivation were found non-significantly associated with the knowledge and adoption behaviour of mothbean growers. The psychological characteristics were the important variables exerted influence on level of knowledge and extent of adoption of mothbean production technology by the growers.

REFERENCES

- Choudhary, M. 1999. A study on knowledge and adoption of improved cultivation practices of mothbean in Bikaner district of Rajasthan. M.Sc. (Ag.) Thesis Rajasthan Agricultural University, Bikaner, Campus-Jobner.
- Geenger, H.K. 2006. Knowledge and adoption of maize production technology by the tribal and non-tribal farmers in Jahazpur panchayat samiti of Bhilwara district (Raj.). M.Sc. (Ag.) Thesis Rajasthan Agricultural University, Campus-Jobner.
- Jaitawat, V.S. 2006. Knowledge and adoption of cumin cultivation technology among the farmers of Jodhpur region, Rajasthan. Ph.D. Thesis (Unpublished), Rajasthan Agricultural University, Bikaner, Campus-Jobner.
- Patel, M.M., Chaterjee, Amit and Sharma, H.O. 1994. Knowledge and adoption level of sugarcane growers. *Maha. Jour. of Extn. Edn.* Vol. III, 94 (131-134).
- Patodia, R.S. 2002. A critical study on adoption of improved technologies of important crops by the farmers in agro climatic zone III A of Rajasthan: Ph.D. Thesis, Rajasthan Agricultural University, Bikaner, Campus : Jobner.

