

## Extent of Knowledge and Adoption of Mustard Production Technology by the Farmers

D.P. Rai<sup>1</sup>, Santosh Kumar Singh<sup>2</sup> and Sachindra Kumar Pandey<sup>3</sup>

1. Head (Agril Ext.), 2. Lecturer, Agril. Eco., 3. Research Scholar Ag.(Ext.),  
Faculty of Agriculture, M.G.C.G.V.V., Chitrakoot, Satna (M.P.).

Corresponding author e-mail: drdprai@ gmail.com

### ABSTRACT

*The major rape seed-mustard growing states are Haryana, M.P., Rajasthan and U.P. representing 81 per cent of the national acreage and contributing 82.9 per cent to the total rape seed-Mustard production in spite of having a lot of technology, production of mustard is not up to the higher extent. Keeping this view, study was conducted in Jhansi District of (U.P.) in 2011. Being major mustard growing area, this study was conducted in five randomly selected villages of Moth blocks of the District. An exhaustive list of mustard growers from selected villages were prepared and total 120 respondents were selected with the random sampling method. Responses were recorded through pre-structured interview schedule. Correlation between adoption of mustard production technologies and personal socio-economic profiles of the growers were obtained. The attributes knowledge of production technology, annual income, level of education, socio-economic status, social participation, extension participation, size of land holding were positively and high significantly correlated with adoption; whereas, the characteristics age and type of family were observed negatively correlated with adoption of mustard production technology.*

**Key words:** Mustard production technology; Adoption; Knowledge;

**A**griculture is the backbone of the Indian economy. Presently 65 percent of Indian population is engaged in agriculture. This sector accounts for 28 percent of the national GDP. During the past four decades enormous progress has been achieved in agricultural production in the country. The rapeseed/Mustard seed produced in India is mainly for domestic consumption, and is mostly consumed in the northern, central and eastern parts of the country. A study by CUTS on the rapeseed/Mustard seed sector in Rajasthan found that 82 per cent of rural consumers use the oil as their staple edible oil, with monthly consumption varying between two and four kilograms per family in the state. The major rape seed-mustard growing states are Haryana, M.P., Rajasthan and U.P. representing 81 per cent of the national acreage and contributing 82.9 per cent to the total rape seed-mustard production. Rajasthan is the largest rape seed-mustard growing state and alone contributes 38.2 per cent to the production of the country from 39.3 per cent area. The other states with substantial acreage and production are Assam, Gujarat and West Bengal. In Sikkim, it is cultivated in an area of 6,000 ha, producing

4,000 tons with an average yield of 737 kg/ha. The oilseeds sector made significant progress both in area expansion and production during the Technology Mission with an increase of 41% in area; 113% in production and 65% (570 to 931 kg/ha) in productivity. The ICAR institutes and SAUS have and released about 91 varieties and hybrids under various oilseed crops since the inception of Technology Mission on Oilseeds in 1986 till 1995-96. The rapeseed/mustard seed produced in India is sold in the form of both oil and oil meal. On average, the country produces around five million tons of rapeseed/mustard seed annually. Around 80 per cent of this is marketed by the small-scale sector in loose form, with only 20 per cent sold by the organized sector. A major portion of seeds enters the regulated mandis (organized markets for selling agricultural products) and is purchased by oilseed crushers across the country. The various extension agencies are continuously making efforts to create awareness among farmers about such technologies, so that the growers may adopt the technologies and enhance crop production. But, it is observed from the yield data of past years that there is

still wide gap between existing production and the production potential recommended by the agricultural universities. In this context, the present investigation was under taken to study the adoption of mustard technology by the small farmers in Moth Block of Jhansi District of Uttar Pradesh” with following specific objectives

1. To study the socio-economic characteristics of small farmers.
2. To study the extent of Knowledge of mustard technology.
3. To study the association between extent of adoption of mustard technology and socio economic characteristics of small farmers.
4. To find out the constraints encountered by the farmers and suggest the remedial measures.

**METHODOLOGY**

This study was conducted in district Jhansi. Out of total eight blocks under district Jhansi, one block namely Moth blocks of district was selected purposively for the study since this block was identified as a potential block for the production of the mustard. A list of villages was prepared under the selected block (Moth) and five villages were selected randomly. A comprehensive list of mustard growers of selected villages was prepared. Out of each selected village twenty four farmers were selected for the study. Selection of respondents was done through random sampling method. In total 120 respondents were selected finally for this study.

**RESULTS AND DISCUSSION**

*Socio-economic status of mustard growers:* The data in Table 1 revealed that out of total growers, majority(55.00%) had ‘medium’ socio-economic status, whereas 25.84 per cent and 19.16 per cent had ‘low’ and ‘high’ socio-economic status respectively.

**Table1. Distribution of mustard growers according to their socio- economic status (N=120)**

Category	No.	%
Low (up to 24)	31	25.84
Medium (25-109)	66	55.00
High (above to 109)	23	19.16
Total	120	100.00

*Extent of knowledge of mustard growers:* The data in Table 2 reveals that the majority of the respondents (53.33 %) were observed in medium category of

knowledge followed by high (20%) and low (26.67%) levels of knowledge, respectively.

**Table 2. Distribution of mustard growers on the ground of their knowledge extent about mustard production technology. (N=120)**

Categories	Respondents	
	No.	%
Low (up to 41)	32	26.67
Medium (42-72)	64	53.33
High (above to 72)	24	20.00
Total	120	100.00

Mean knowledge score =56.16 (Minimum=28.50, Maximum=90.37),  
Standard deviation =15.64

The data depicted in Table 3 showed the correlation between adoption of mustard production technologies and personal socio-economic profile of the growers. The attributes knowledge of production technology, annual income, level of education, socio-economic status, social participation, extension participation, size of land holding were positively and high significantly correlated with adoption; whereas, the characteristics age and type of family were observed negatively correlated with adoption of mustard production technology. Similar finding was reported by *Rai and Singh, 2010*.

**Table 3. Correlation coefficient between adoption of mustard production technologies and personal socioeconomic profile of the growers**

Variable	Correlation coefficient(r)
Age	-0.1736NS
Level of education	0.3788**
Social participation	0.5278**
Type of family	-0.1157NS
Size of land holding	0.3764**
Annual income	0.6821**
Socio- economic status	0.5780**
Economic motivation	0.9789**
Risk preference	0.9724**
Extension participation	0.5248**
Knowledge of Mustard produ. tech.	0.5344**

NS - non significant

\*\*significant at 0.01 level of probability

The constraints analysis is reported based on the opinion survey of the farmers. Thus, the generalizations of the results are the feed back of the farmers engaged

**Table 4. Various constraints in adoption of improved mustard production practices**

Constraints	No.	%	Rank
<i>Situational Constraints</i>			
Non-availability of agricultural material in village.	106	88.33	I
Market is so far from the village.	65	54.16	III
Electricity and water problem.	85	70.83	II
Labors problem	58	48.33	IV
Lack of transport facility	55	45.83	V
<i>Technical constraints</i>			
Lack of information about improved varieties of mustard.	97	80.83	IV
Knowledge about source of seed treatment	65	54.16	V
Non-availability of facilities of soil testing	106	88.33	II
Lack of knowledge about insects and disease.	99	82.5	III
Lack of training of scientific mustard production technology.	112	93.33	I
Lack of knowledge about insecticide and their doses	55	45.83	VI
<i>Economics constraints</i>			
Lack of money to purchase useful agricultural material.	107	89.16	II
Lack of loan facilities.	105	87.5	III
High labour charges.	85	70.83	IV
High cost of seed, fertilizers, insecticides and implements.	109	90.83	I
<i>Extension constraints</i>			
RAEOs have not provided technical guidance.	116	96.66	I
Technical literature provided on time.	92	76.66	III
Technical information provided on local language.	85	70.83	IV
Irregular visit of RAEO's in village.	115	95.83	II
<i>Institutional constraints</i>			
There should be co-operative society in every village.	55	45.83	III
Lack of Co-operative societies timely support	65	54.16	I
Gram panchayat not provided technical information on time.	58	48.33	II

**Table 5. Suggestions to enhance the adoption of improved mustard production technology**

Remedial measures	N	%	Rank
Technical suggestions should be given in time	78	65	V
Inputs should be provided timely	65	54.17	VII
Proper value of return of Mustard should be assured	92	76.67	I
Demonstration should be conducted at their field	86	71.67	IV
Visits of RAEOs should be provided regularly	90	75	II
Special training on low cost input technology should be provided	47	39.17	X
Agriculture resources and equipments should be available at low cost	55	45.84	VIII
Proper credit facility should be provided	75	62.5	VI
Improved mustard technology should be available in rural area	49	40.84	IX
Electricity for irrigation should be provided in time	89	74.17	III
Technical knowledge of insecticide and fungicides should be provided	38	31.67	XII
Proper knowledge of rate of application and time should be provided	40	33.34	XI

in mustard farming in the region. Table 4 reveals that the major constraints as perceived by the respondents. The majority of farmers (88.33%) mentioned that non-

availability of agricultural material in village is the main situational constraints. In case of technical constraints 93.33 per cent farmers were facing problem of lack of

training of scientific mustard production technology. While among the economic constraints high cost of seed, fertilizers, insecticides and implements is perceived by most of the farmers (90.83%). The majority mentioned that RAEOs (Rural Agril. Extension officers) have not provided technical guidance besides other extension related constraints. Similarly in institutional constraints 54.16 per cent farmers mentioned that co-operative societies do not provide seed, fertilizers, insecticides and implements in time besides other institutional constraints. Similar findings were reported by *Shanna, et al (1966)*, *Meena (2003)* and *Ganguly and Singh (1999)*.

The suggestions for enhancing the adoption of improved mustard production technologies are presented in Table 5. Most of the respondents suggested for proper value of return of mustard, regular visit of RAEOs, timely electricity supply for irrigation, field level demonstration and timely technical suggestions. The other suggestions made by more than fifty per cent respondents for the proper credit facility and timely input supply.

High input cost, no knowledge of insecticides and

fungicides, more infestation of insect pest, lack of money, lack of labour, non availability of improved seeds at proper time, insufficient loan from cooperative societies are the major problems faced by the Mustard growers during adoption.

## CONCLUSION

In the light of said findings and discussions of the present study, the following conclusions can be draw. That majority of the mustard growers had higher knowledge and medium adoption level in mustard production technologies. Positive correlation value of education with adoption convincingly reveals the significance of education in adoption of mustard production technology. Most of the farmers were belonged to small farmers' category. However, negative value of correlation coefficient of age and adoption of mustard production technology establishing the fact that ages of the respondents were not an inhibiting variable in path of adoption.

*Paper received on* : *February 24, 2012*

*Accepted on* : *June 11, 2012*

## REFERENCES

- Ganguly, K. and Singh, P. (1999). Perception of farmers about appropriateness of rice cultivation technology. *Maharashtra J of Ext. Edu.*, **XVII**: 13-18.
- Meena, K. C. (2003). Constraints faced by the formers in adoption of improved cultivation of cabbage in Udaipur District of Rajasthan. *Indian Res. J. of Ext. Edu.*, **3**: 69-71.
- Shanna, V.K. and T. Haque (1966). Perspective of technological change in Indian agriculture? A cause of H.Y.V. Technology, *Agriculture Situation in India*, **VII** (9), Dec. 1996.
- Rai, D. P. and Singh, B. (2010). Extent of knowledge and constraints in cotton production technology in Madhya Pradesh. *Indian Res. J. Ext. Edu.*, **10** (2): 78-80.

