Adoption of Improved Mustard Production Technology in Pali District of Rajasthan

Aishwary Dudi[1] and M.L. Meena[2]

1. SMS (Home Science), 2. SMS (Agricultural Extension), CAZRI, Krishi Vigyan Kendra,
Pali-Marwar (Rajasthan)-306401
Corresponding author e-mail : aishwaryadudi@yahoo.com

ABSTRACT

A study was conducted in a district of Rajasthan which has a Krishi Vigyan Kendra run by Central arid Zone Research Institute (CAZRI) . The KVK is repository of scientific knowledge for agriculture and its allied disciplines and it can be transmitted through effective extension means to the farmers who, in turn, can use this knowledge to improve the production and productivity in their farm operations. In this study, extent of adoption of eight selected improved cultivation practices of mustard production technologies were measured. To measure the extent of adoption and to compare the impact of training on extent of adoption, 120 numbers of respondents were selected from trained farmers and the same numbers of respondents were selected from surrounding area that had not been trained. Study was conducted in three different ways- firstly; all respondents were interviewed and categorized in to three groups of high, medium and low category of farmers for adoption of improved mustard production technologies. Secondly, overall adoption for both categories of respondents was measured and lastly difference between the adoptions of both categories of respondents was reckoned in terms of adoption of different practices of mustard production. High level of adoption was seen in adopting appropriate seed-rate (61.67% in trained groups) and (54.17 % in untrained groups), whereas majority of the farmers were falling under medium adopters.

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

The Indian agriculture is considered to be backbone of Indian economy. About 75 per cent population lives in rural areas. The main occupation of rural people is agriculture. About 24.70 per cent of the national income originates from the agricultural sector. About 75 per cent of its population and 66.67 per cent of labour force directly or indirectly is dependent on agriculture for livelihood. A large number of important industries like jute, textile, edible oil, tobacco, sugar, etc. receive the raw material produced by agriculture sectors. The total oil seed production of India is 25.56 million tones and share of mustard production is 8.34 million tones (32.65 per cent) i.e. second highest after soybean 7.8 million tones with productivity of 11.52 q/ha (Anonymous, 2010). Rajasthan is the large rapeseed-mustard growing state and alone contributes 48.78 per cent of total rapeseed-mustard production from the hectare of 40.23 per cent area (Anonymous, 2010). In Rajasthan the mustard crop is mostly cultivated in the Alwar, Bharatpur, Ganganagar, Pali, Jaipur and Jodhpur districts. Oil seed crops an important position in the farming system of India. These are highly paying crops of the dry regions. Oil seed are rich source of fat and edible oils have various uses for human being and animals. As much as 90 per cent of the total edible oil product in the country comes from two oil seed crops namely rapeseed-mustard and groundnut. Rapeseed-mustard is multiple use crops. Besides, its oil value, its seed are also used as condiments in preparation of pickles and flavoring curries and vegetables. The oil is utilized for human consumption throughout India in cooking and frying. The leaves of young plants are used as green vegetable as they supply enough sulphur minerals in the diet. The oil cakes are used at cattle feed and manures. The Krishi Vigyan Kendra is repository of scientific knowledge for agriculture and its allied disciplines and it can be transmitted through effective extension means to the farmers who, in turn, can use this knowledge to improve the production and productivity in their farm operations. KVKs are playing a vital role across the rural economy in areas as diverse as animal husbandry, horticulture, plant protection and food processing. KVKs role in these sectors is crucial as it is ideally placed to disseminate field-tested proven technologies with appropriate modulations which addresses location specific problems and concerns on the prevailing natural and socio-economic conditions, needs and priorities. The present study was conducted to measure the adoption of improved mustard production technology among farmers in the operational area of CAZRI, KVK, Pali.

METHODOLOGY

Multistage stratified random sampling procedure was followed for the selection of respondents. Pali district was purposely selected for the present study. Pali district comprises of 10 blocks and KVK is working in ten blocks. Out of these ten blocks, one block, Jaitaran was randomly selected. Out of the 14 villages where KVK is working, 10 villages were selected randomly. Thereafter, additional ten villages were selected randomly from the remaining villages of the block, where KVK has not been working. Farmers from the villages were selected as untrained group. Thus, the total number of villages becomes 20. Proportionate sampling procedure was followed for the selection of KVK trained farmers. Approximately 30 per cent of farmers from each village were selected making a total number of trained farmers as 120. Equal number of farmers were selected from additional ten

villages of the block, where the KVK has not been working. Thus, the total number of farmers under this study came to 240 (120 trained + 120 untrained). The respondents were interviewed personally to get first hand information and also through direct observations. The statistical procedure and tests following for analysis of the data were frequency and percentage, arithmetic mean (X), standard deviation (SD) and t-test.

RESULTS AND DISCUSSION

It is clear from Table 1 that majority (52.50%) of the respondents from trained category had medium use of improved mustard variety, while 33.33 per cent had high and 14.17 per cent had low use of improved mustard varieties. Thus, it can be inferred that the respondents from trained category showed higher extent of adoption of improved mustard cultivation in case of using improved mustard varieties as compared to the respondents from untrained category.

Table 1. Distribution of the respondents according to their adoption of various mustard cultivation practices

(N-240)

S. No.	Mustard cultivation technologies	Categories of adoption	Frequency	
			Trained (N=120)	Untrained (N=120)
1.	Use of improved mustard varieties	Low	17 (14.17)	25 (20.83)
		Medium	63 (52.50)	67 (55.84)
		High	40 (33.33)	28 (23.33)
2.	Seed rate	Low	06 (05.00)	10 (08.33)
		Medium	40 (33.33)	45 (37.50)
		High	74 (61.67)	65 (54.17)
3.	Application of nitrogenous fertilizers	Low	13 (10.83)	23 (19.66)
		Medium	70 (58.33)	76 (63.33)
		High	37 (30.83)	23 (19.66)
4.	Application of phosphates fertilizers	Low	35 (29.17)	27 (22.50)
		Medium	17 (14.17)	70 (58.33)
		High	68 (56.67)	23 (19.17)
5.	Application of potassic fertilizer	Low	30 (25.00)	40 (33.33)
		Medium	57 (47.50)	60 (50.00)
		High	33 (27.50)	20 (16.67)
6.	Seed treatment	Low	23 (19.17)	30 (25.00)
		Medium	65 (54.17)	73 (60.83)
		High	32 (26.67)	17 (14.17)
7.	Herbicides	Low	28 (23.33)	35 (29.17)
		Medium	61 (50.83)	68 (56.66)
		High	31 (25.83)	17 (14.14)
8.	Insecticides/pesticides	Low	34 (28.34)	42 (35.00)
		Medium	55 (45.82)	50 (41.66)
		High	31 (25.80)	28 (23.33)

Figures in parentheses indicate percentages

In case of seed-rate, it is evident from Table that majority of trained and untrained respondents were using appropriate seed rate. As such, 61.67 per cent of trained respondents and 54.17 per cent of untrained respondents were found in high category. So far, the adoption of nitrogenous fertilizers was concerned, majority (58.33%) of the respondents from trained category had medium application of nitrogenous fertilizers, while 30.83 per cent had high application of nitrogenous fertilizers and 10.83 per cent had application of nitrogenous fertilizers. In the untrained category majority (63.33%) of the respondents had medium application of nitrogenous fertilizers, while 19.66 per cent had high application of nitrogenous fertilizers. Thus, it can be concluded that respondents from the trained group showed higher extent of adoption of improved mustard cultivation technologies on application of nitrogenous fertilizers as compared to the respondents from the untrained category. Same type of adoption was seen in case of phosphate and potassic fertilizers in both categories of farmers.

It is evident from the Table that the majority (54.17%) of the respondents from trained category had medium seed treatment, while 26.67 per cent had high seed treatment and 19.17 per cent had low seed treatment. In the untrained category, majority (60.83%)

of the respondents had medium seed treatment, while 25.00 per cent were having low seed treatment and 14.17 per cent had high seed treatment. Thus, it can be inferred that the respondents from trained category showed higher extent of adoption of improved mustard cultivation technologies on seed treatment as compared to the respondents from untrained from untrained category. Majority (50.63%) of the respondents from trained category had medium use of herbicides; while 25.83 per cent had high and 23. 33 per cent had low level of use of herbicides. In the untrained category, majority 56.66 per cent of the respondents had medium use of herbicides, while 29.17 per cent were found having low level and 14.14 per cent had high level of use of herbicides. Thus, it can be concluded that respondents from the trained category showed higher extent of adoption of improved mustard cultivation technologies on herbicides as compared to the respondents from the untrained category. Further table showed that majority (45.82%) of the respondents from trained category had medium use of insecticide/pesticide; while 28.34 per cent had low and 25.80 per cent had high use of insecticide/pesticide. In the untrained group, majority (41.66%) of the respondents had medium use of insecticide/pesticide, 35.00 per cent had low and 23.33 per cent had high use of insecticide/pesticides. Thus it may be said that, the respondents from trained category showed higher extent of adoption of various types of insecticides/pesticides according to need

As far as overall adoption was concerned, it is evident from Table 2 that majority (50.00%) of the trained farmers were having medium level of adoption of improved cultivation technologies of mustard and 31.67 per cent as well as 18.33 per cent were found in high and low category, respectively. Whereas 52.50 per cent untrained farmers had medium, 25.00 per cent had low and 22.50 percent had high category of overall extent of adoption of improved mustard cultivation technologies.

Table 2: Distribution of respondents according to their overall extent of adoption of improved mustard cultivation technologies

(N=240)

Sr. No.	Categories	Frequency	
		Trained(N=120)	Untrained(N=120)
1.	Low	22 (18.33)	30 (25.00)
2.	Medium	60 (50.00)	63 (52.50)
3.	High	38 (31.67)	27 (22.50)

Figures in parentheses indicate percentages

From the above discussion, it can be concluded that the farmers of the trained category showed higher extent of adoption of improved mustard cultivation technologies pertaining to all eight mustard practices than those of the untrained farmers. Thus, the trend farmers showed an increasing trend in the use of improved mustard cultivation technologies. This could be due to the exposure of the trained category farmers to the improved mustard cultivation technologies through on- farm trials conducted under KVK. The untrained farmers lacked this opportunity and hence, they showed lower extent of adoption of these technologies. Table 3. revealed that the adoption of the improved mustard technologies, the mean score of the trained and untrained farmers were 70.73 and 58.00, respectively.

The value of't' ratio is 7.49 which is significant at 0.01 level of probability, which indicates that the respondents from trained category adopted improved mustard cultivation technologies due to the exposure through on farm trials and trainings conducted by KVK. The findings confirm with the findings of Sahu et al. (2010), Chaudhary and Dasgupta (1989), Jaitawat, et al. (2008), Nagar et al. (2008), Singh (2010), Satish and Jain (2011) and Sharma, et al. (2011).

Table 3: Differences in adoption of improved mustard cultivation technologies between the trained and untrained farmers.

(N=240)

Sr. No.	Mustard cultivation practices	Mean percent scores		't' value of mean difference
		Trained	Untrained	
1.	Use of improved mustard varieties	67.43	55.23	7.54*
2.	Seed rate	90.09	81.76	6.21*
3.	Application of nitrogenous fertilizers	72.33	61.90	6.88*
4.	Application of phosphates fertilizers	74.23	53.67	6.76*
5.	Application of potassic fertilizer	65.34	46.66	7.55*
6.	Seed treatment	67.35	50.70	10.21*
7.	Herbicides	62.87	55.87	8.32*
8.	Insecticides/pesticides	66.21	58.22	6.44*
	Overall extent of adoption	70.73	58.00	7.49*

** Significant at 0.01 level of probability, df=108*

CONCLUSION

It may be concluded that the trained farmers showed an increasing trend in the use of improved mustard cultivation technologies. This could be due to the exposure of the trained farmers to the improved mustard cultivation technologies through on farm trials conducted under KVK. The untrained farmers lacked this opportunity and hence, they showed lower extent of adoption of these technologies.

Paper received on : September 3, 2012
Accepted on : October 13, 2012

REFERENCES

1. Chaudhary, S. and Dasgupta, D., 1989. An appraisal of adoption and reason for non-adoption of farminnovations advocated by technology transfer programme. ***Indian Agriculturist, 33*** *(1)* : 45-50.
2. Jaitawat, g.S., Bhimawat, B.S. and Sisodia, S.S., 2008. Adoption of improved fennel cultivation technology by the farmers in Sirohi district of Rajasthan. ***Rajasthan J. of Extension Education, 16*** : 158-161.
3. Nagar, S.N., Chauhan, M.S, Sharma, F.L. and Sharma, V.P., 2008. Adoption of recommended coriander cultivation technology among the farmers of Atru tesil in Bara district of Rajasthan. ***Rajasthan J. of Extension Education, 16*** : 190-194.
4. Sahu, P.R., Prasad, A. and Ram, D., 2010. Adoption of improved wheat cultivation technologies in Unnao district of Uttar Pradesh. ***Indian Res. J. of Ext. Edu., Vol., 10*** *(2) ; 25-28.*
5. Satish, G.D. and Jain, V.K., 2011. Rabi-summer groundnut production technology-Impact on livelihood of farmers. ***Agricultural Ext. Rev., 23*** *(2)* : 8-13.
6. Sharma, A.K., Kumar, V., Jha, S.K. and Sachan, R.C., 2011. Frontline demonstrations on Indian mustard : An impact assessment. ***Indian Res. J. of Ext. Edu.,*** **Vol. 11** (3) : 25-30.
7. Singh, B., 2010. Adoption of Mungbean production technology in arid zone of Rajasthan. ***Indian Res. J. of Ext. Edu.,*** Vol. **10** (2) : 73-77.