Knowledge and Adoption of Agricultural Technologies in Marathwada

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ABSTRACT

The study was conducted in purposively selected districts of Marathwada region viz. Parbhani and Nanded during 2004-05 in order to know the adoption of fifty-four technologies recommended by MAU Parbhani during 1999-2000, 2000-2001 and 2001-2002. Result of study revealed that majority of the respondents belong to middle age group, educated up to higher secondary and agriculture is their main occupation. Majority of the respondents (81.59 %) falls under medium level of income having Rs. 10001 to 87000 per annum. Most of the respondents had medium extension contact (79.51 %) and 69.09 per cent of the respondent fall under medium sources of information Majority of the respondents (97.92 %) belong to the low level of knowledge and 81.94 per cent were falling under low level of adoption. More than half of the respondents stated constraints like costly seed, lack of information regarding seed cost, place of sale and proper guidance.
Key word: *Knowledge; Adoption; Agriculture Technology; Lack of information*

*I*ndia is predominately an agriculture based country. In cereals the challenging task is to improve the quality of food to meet nutritional requirement of the people. About two third population is dependent on agriculture which contributes less than 30 per cent of the Gross National Product. MAU, Parbhani developed the new technologies as per demand and requirement of the farmers of its jurisdiction. The transfer of improved technology and their effective adoption is influenced by the method of its transfer to the farmers in accordance to their need. Keeping this in view the present study was undertaken to know the knowledge level and rate of adoption of agricultural technology recommended by MAU, Parbhani by the farmers with the following specific objectives:

1. To study the personal and socio-economic characteristics of the farmers.
2. To know the knowledge level and extent of adoption of recommended technologies.
3. To find out the constraints faced by the farmers in adopting the recommended technologies.

METHODOLOGY

The study was conducted in purposively selected districts of Marathwada region viz. Parbhani and Nanded during 2004-05 in order to know the adoption of fifty-four technologies recommended by M. A. U. during 1999-2000 , 2000-2001 and 2001-2002 . Further, two villages were selected by random sampling method from each taluka of respective districts. Then 96 farmers selected farm small, medium and large category respectively. Thus the study comprised 288 respondents .The data were collected by personally interviewing the selected respondents with the help of structured interview schedule. The statistical methods like percentage and frequency were employed for analysing the data.

RESULTS AND DISCUSSION

Personal and socio-economic characteristics of respondents: The personal and socio-economic characteristics of respondents were studied. The data pertaining to personal and socio-economic and psychological characteristics have been given in Table1.

It was evident that majority of the respondents belonged to middle age group (47.22 per cent) followed by young age group (34.72 per cent) and old age group (18.06 per cent). Large number of respondents were educated upto higher secondary and above (25.69 per cent). Similarly the percentage of secondary education was 24.65 per cent followed by illiterate (17.01 per cent), primary level education (16.66 per cent) and middle standard (15.97 per cent), respectively (Kadam 2003). It was further observed that the respondents were normally distributed having agriculture as their main occupation (96.52 %) while remaining having subsidiary occupation (3.47 %). The annual income majority of the respondents (81.59 %) fall under medium level of income having Rs. 10001 to 87000 annum, while 10.76 per cent respondents

were of high level of income and remaining only 7.63 per cent were low level of income.

In respect of land holding, as the study sample was conducted on the basis of proportionate random sampling method, hence, the equal number and percentage i.e. 33.33 of respondents were selected from small, medium and large category, respectively.

In case of extension contact, it was observed that majority of respondents had medium (79.51 %) extension contact; while 13.88 per cent had high and 6.59 per cent had low extension contact (Darekar 2002). It was observed that majority of respondents fall under medium sources of information (69.09 per cent). However, remaining had high sources of information i.e. 16.66 per cent and only 14.23 per cent of the respondents showed low source of information. As regards the social participation, it was noticed that 45.13 per cent of the respondents were from medium while remaining per cent of respondents was belong to high (38.88 per cent) and low (15.97 per cent) (Gharule 1998).

Table 1. Distribution of respondents by the personal and socio-economic characteristics N=288

S. No.	Category	No.	Per cent
1.	*Age*		
	Young (upto 35 years)	100	34.72
	Middle (36 to 50 years)	136	47.22
	Old (51 and above)	52	18.06
2.	*Education*		
	Illiterate	49	17.01
	Primary	48	16.66
	Middle	46	15.97
	Secondary	71	24.65
	Higher secondary and above	74	25.69
3.	*Occupation*		
	Main	278	96.52
	Subsidiary	10	3.47
4.	*Annual income*		
	Low upto 10000	22	7.63
	Medium (10001 to 87000)	235	81.59
	High (87001 and above)	31	10.76
5.	*Land holding*		
	Low (upto 2 ha)	96	33.30
	Medium (2.1 to 4 ha)	96	33.3
	High (4.1 and above)	96	33.3
6.	*Extension contact*		
	Low (upto 2)	19	6.59
	Medium (3 to 13)	229	79.51
	High (14 and above)	40	13.88
7.	*Sources of information*		
	Low (upto 4)	41	14.23
	Medium (5 to 19)	199	69.09
	High (20 and above)	48	16.66
8.	*Social participation*		
	Low (upto 2)	46	15.97
	Medium (3 to 11)	130	45.13
	High (above 12)	112	38.88

Knowledge and adoption of recommended technologies: Variety: It was observed from Table 2 that in case of released varieties of jowar, Parbhani Moti (SPV 1411) was known to 16.31 per cent of the respondents, while in case of adoption of this variety 4.51 per cent respondents had adopted on their farm. Next to jowar knowledge of cotton PHH 316 variety was to the tune of 5.23 per cent but the adoption was nil.

Crops and farming system: The 10.42 per cent respondents had the knowledge of sowing cotton + tur intercrop in the ratio of 8:2 or 6:2 besides sole cotton crop. Whereas 4.86 per cent respondents adopted this type of technology, the 5.20 per cent respondents had the knowledge regarding integrated nutrient supply method under Cotton-Jowar alternate cropping system as required 1/2 quantity of nutrient be should provided through chemical fertilizer and 1/2 quantity through organic fertilizer and 2.43 per cent of the respondents had adopted this practice. Three per cent respondents had knowledge that the improved variety of cotton PA 183 and PA 255 should be sown at 45 x 30 cm distance and for maximum cotton yield apply 50:25:25 NPK per ha to be aplied. Similarly only 1.04 per cent respondents had adopted this type of technology.

Most of the respondents (37.15 %) had knowledge of integrated pest management in cotton crop and 11.81 per cent respondents had adopted this technology. Almost three per cent respondents had the knowledge regarding soaking cotton seed in water for 6 to 12 hours for getting higher germination, and 0.35 per cent respondent had adopted this technology. Only 2.08 per cent respondent had the knowledge of controlling of bacterial disease in cotton by applying 5 % NSKE spray after every 10 days but adoption of this technology was nil.

Knowledge of farmers about agricultural technologies: Table 3 indicates that majority of the respondents (97.92 per cent) belonged to the low level of knowledge, while only 2.08 per cent respondents had high level of knowledge and medium level of knowledge was nil.

Extent of adoption of recommended technologies: From Table 4 it was clearly revealed that most of the respondents i.e. 81.94 per cent were falling under low adoption level, while remaining respondents i.e. 9.38 and 8.68 per cent were high and medium adoption level, respectively.

Constraints faced by the respondents : Table 5 reveals the constraints of no information about variety released and agricultural technologies recommended by MAU were expressed by 62.5 per cent, while 56.94 per cent respondents gave other constraints like costly seed, lack of information regarding seed cost, place of sale and proper guidance. As much as 52.77 per cent respondents expressed that non availability of seed, travelling over long distance for seed purchase, but due to shortage of seed, seed is not available in due time.

Table 2. Knowledge and adoption of technologies recommended by MAU. (N=288)

S. No.	Recommended technology	Knowledge f	%	Adoption f	%
A.	*Released varieties of crop*				
1.	Jowar PVK 801	10	3.47	0	0
2.	Jowar PVK 809 (SPV 1474)	9	3.13	0	0
3.	Jowar Parbhani Moti (SPV 1411)	47	16.31	13	4.51
4.	Cotton PHH 316	15	5.23	0	0
5.	American cotton NH 454	11	3.81	0	0
B.	*Crops and farming system*				
1.	INM is recommended for cultivation of Jowar after rained cotton, with application of dose in split through fertilizers and remaining half dose through organic fertilizers along with use of biofertilizers	15	5.20	7	2.43
2.	Improved cotton variety PA 183 (Savata) and PA 255 (Turab) is recommended in assured rainfall area of Marathwada by applying spacing of 45 x 30 cm with maintaining plant population of 34076, the application 50:25:25 NPK/ha is recommended for optimum yields	10	3.47	3	1.04
3.	Adoption of vertical and horizontal hoeing are recommended in cotton after germination in 3, 6 and 9 week. Further spray of Dioran 0.50 l/ha is recommended before germination of seed and weed in cotton	9	3.13	4	1.39
4.	Inter cropping of cotton + tur (8:2) or (6:2) is recommended for more benefit rather than cultivating sole crop of cotton	30	10.42	14	4.86
5.	Cultivation of jowar PVK 809 as sole crop is recommended for more grain and fodder yield	6	2.08	3	1.04
6.	Cultivation of Parbhani Moti variety of jowar is recommended to get more yield (16.6 %) as compared to Maldandi jowar M 35-1	8	2.78	0	0
7.	In Marathwada region for getting higher germination cotton seed be soaked in water for 6 to 12 hrs	8	2.78	1	0.35
8.	For integrated pest management of rainfed cotton	107	37.15	34	11.81

Table 3. Distribution of respondents according to knowledge

S. No.	Category	No.	Per cent
1.	Low (upto 13)	282	97.92
2.	Medium (14-25)	0	0.00
3.	High (26 and above)	6	2.08

Table 4. Distribution of respondents according to adoption

S. No.	Category	No.	Per cent
1.	Low (upto 0)	236	81.94
2.	Medium (1-6)	25	8.68
3.	High (7 and above)	27	9.38

Table 5. Distribution of respondents according to the constrains faced by them

S. No.	Category	No.	Per cent
1.	No information	180	62.50
2.	Non-availability of seed	152	52.77
3.	Not much important	92	31.94
4.	Other improved variety used	49	17.01
5.	Others	164	56.94

Most of respondents (31.94 %) expressed that MAU seed is not of much importance because they got seed at door step from other agencies. Only 17.01 per cent of the respondents clearly expressed that they are using other improved variety seeds from local market (Kadam 2003).

CONCLUSIONS

The majority of the respondents were middle aged, having educated upto higher secondary and above, agriculture as their main occupation, having medium annual income, medium extension contact, medium sources of information and social participation. Knowledge of the farmers regarding agricultural technology was found low. Adoption of majority of respondents of various agricultural technologies generated by MAU was very low. In case of constraints faced, most of the respondents stated that they did not have adequate information regarding the agricultural technologies while others said though they have knowledge but availability of seed is the major constraint and purchasing is also difficult due to high cost of seed and many a time to long travel. The majority of respondent has knowledge of agricultural technology   through progressive farmers and few of them were interested to get information through newspapers, radio and village leaders.

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