FACTORS INFLUENCING KNOWLEDGE LEVEL OF COTTON GROWERS ABOUT INTEGRATED PEST MANAGEMENT

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ABSTRACT

The results indicated that the vast majority of the IPM trained and untrained cotton growers had medium to high and low to medium level of knowledge regarding IPM technology in cotton, respectively. In case of trained cotton growers, independent variables like age, education, extension contact, mass media exposure, training received, land holding, area under cotton crop, productivity, economic motivation, scientific orientation, risk orientation, attitude and awareness were found highly and significantly related while, occupation was not found significant. Incase of untrained cotton growers, independent variables like, education and training received were significantly correlated with knowledge while, remaining were not related with the knowledge.

INTRODUCTION

Cotton is one of the Principal commercial crops and has been one of the main sources of India's economic growth and foreign exchange earner. India ranks first in area under cotton crop in the world and stands third in terms of production. In Gujarat, Vadodara is one of the districts having the major area under cotton crop. However it is interesting to note that cotton, which occupies only five per cent of the total cultivable land consume more than 55 per cent of the pesticides used in India. Excessive and indiscriminate use of chemical pesticides has lead to several complications such as resistance development, resurgence, secondary pest out break, toxicity to beneficial organism, residue in food, feed, fodder etc and above all environmental pollution. The cotton crop is attacked by a number of insect, pests, diseases, nematodes and weeds. Yield losses due to these pests range from 15 to 25 per cent. The approach to overcome these ill effects of pesticides to a certain extent is Integrated Pest Management practices. The IPM approach is gaining importance and is being increasingly by adopted in the country.

METHODOLOGY

Vadodara district was selected purposively on the basis of leading hybrid cotton growing area. Four block namely Karjan, Dabhoi, Shinor and Sankheda were selected on the basis of maximum coverage of hybrid cotton area in the district. Two villages of each block were selected purposively from IPM trained villages. Hence, all eight villages from four blocks were selected for the study. Similarly from the same blocks the neighboring village of selected villages was also selected as the control villages for the study. Thus, total sixteen villages eight IPM trained and eight IPM untrained villages were selected for the study. There were 1509 cotton growers who were trained in different villages of these four blocks between the year 2000-01 to 2004-05 on IPM technology by district extension functionary out of that 8 % of trained cotton growers i.e. 120 respondents were selected for the study. There were 15 trained cotton growers selected randomly from each of eight selected IPM trained villages purposively. Thus, total 120 respondents were selected as trained cotton growers. Similarly, from the neighboring villages a list of cotton growers was obtained

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from the concern village level workers and 15 cotton growers were selected from each of the neighboring village random.   Thus, the total 120 respondents were selected as untrained cotton growers. Thus, making together 240 respondents (120 trained and 120 untrained) was covered from the total research operational area.

The data was collected with the help of pre tested well structured schedule by using interview with the cotton growers. The data were statistically analyzed with the help of correlation Coefficient in this study.

FINDING AND DISCUSSION

A perusal of the data presented in Table 1 showed that majority (64.17 per cent) of the IPM trained cotton growers were having medium level of knowledge regarding IPM technology in cotton crop followed by 30.00 per cent and 5.83 per cent with high and low level of knowledge, respectively. Incase of untrained cotton growers more than half (54.17 per cent) had medium level of knowledge followed by 42.50 per cent and 3.53 per cent with low and high level of knowledge, respectively.

The calculated 't' value (68.93) was observed highly significant at 1 per cent level of probability indicating highly significant difference between trained and untrained cotton growers in respect of their knowledge level of IPM technology in cotton crop.It can be concluded that majority of cotton growers had medium to high level of knowledge. While majority of the untrained cotton growers had low to medium level of knowledge about IPM technology. Highly significant difference was found in knowledge levels of both the groups. Hence, it proves on knowledge

level of trained cotton growers IPM technology had increased strikingly.

The data presented in Table:2 clearly indicated that age had positive and significant relationship with level of knowledge of trained cotton growers. Whereas, in case of untrained cotton growers, age had no significant relationship with knowledge level of IPM technology in cotton crop. The farmers with middle age group were more interested in gaining knowledge about IPM technology. This might be the probable reason for the positive and significant relationship between age and knowledge of trained cotton growers.

The data presented in Table-2 further revealed that the level of education had positive and significant relationship with level of knowledge of trained and untrained cotton growers. From the above results it can be said that educated cotton growers have greater reception power, owing to their ability to understand, read and write than less educated cotton growers.

A perusal of data in Table-2 revealed that extension contact was significantly related with knowledge level of IPM trained cotton growers. Whereas, in case of untrained cotton growers, significant relationship was not found with knowledge. The trained cotton growers who have got more extension contact with extension personnel would have more knowledge about IPM technology because of source of information. This might be the possible reason for having the above relationship between extension contact and knowledge for trained cotton growers.

Table 1:- Distribution of cotton growers according to their knowledge   n = 240

Knowledge level	Category of farmers			
	Trained n_1 = 120		Untrained n_2 = 120	
	Number	Per cent	Number	Per cent
Low	07	5.83	51	42.50
Medium	77	64.17	65	54.17
High	36	30.00	04	3.33
Total	120	100.00	120	100.00

't' value : 68.93**

TABLE 2 : Relationship between personal social communicational and psychological characteristics of trained and untrained cotton growers and their knowledge

Sr. No.	Characteristics	'r' value	
		Trained	Untrained
1	Age	0.3292**	0.0070 [NS]
2	Education	0.6846**	0.2464*
3	Extension contact	0.2454**	0.0798 [NS]
4	Mass media exposure	0.3864**	0.1060 [NS]
5	Training received	0.5748**	0.3612**
6	Land holding	0.2920**	0.0290 [NS]
7	Area under cotton crop	0.2512**	0.0310 [NS]
8	Occupation	0.1501 [NS]	0.0139 [NS]
9	Productivity	0.3190**	0.1426 [NS]
10	Economic motivation	0.2517**	0.1614 [NS]
11	Scientific orientation	0.4463**	0.0445 [NS]
12	Risk orientation	0.2522**	0.0430 [NS]
13	Attitude towards IPM technology	0.5644**	0.1680 [NS]
14	Awareness about IPM technology	0.2519**	0.0036 [NS]

Data shown in Table-2 indicated that mass media exposure of trained cotton growers had significant relationship with the knowledge level of IPM technology in cotton crop. Whereas, in case of untrained cotton growers significant relationship was not found with knowledge. It is clear from the data that level of knowledge increased with increase in media exposure.

A perusal of data in Table-2 revealed that trainin g received has significantly related with knowledge level of IPM trained and untrained cotton growers. It shows that level of knowledge increased with increase in training received.

Data shown in Table-2 indicated that landholding of trained cotton growers had significant relationship with knowledge level. Whereas, in case of untrained cotton growers significant relationship was not found with knowledge about IPM technology.

A look on the Table-2 indicated that area under cotton crop of trained cotton growers had positive and significant relationship with the knowledge level of IPM strategy in cotton crop. Whereas, in case of untrained cotton growers there was no significant relationship between the area under cotton crop and knowledge of IPM technology in cotton crop. Knowledge of trained cotton grower increased with increase of area under cotton cultivation as they sought more information about cotton crop.

Data shown in Table-2 revealed that occupation and knowledge level of IPM technology in cotton was not significantly related in case of trained and untrained cotton growers. The reason for this might be that majority of the trained (84.17 per cent) and untrained (81.67 per cent) cotton growers had agriculture and animal husbandry as their main occupation for livelihood.

Perusal of data presented in Table-2 indicated that productivity of cotton crop was highly correlated with knowledge level of IPM technology in cotton crop for trained cotton growers. It means that cotton yield in case of trained cotton growers increased with increase in their level of knowledge regarding IPM technology. High level of knowledge regarding IPM technology by trained cotton growers provides favourable opportunity for repeated exposure to new technology, high adoption and finally obtained higher crop yield.

The data presented in Table –2 revealed that economic motivation was highly and significantly correlated with knowledge level of IPM technology

in cotton for trained cotton growers. Whereas, in case of untrained cotton growers, the economic motivation had no significant relationship with knowledge of IPM technology in cotton crop. It means that trained cotton growers who possessed more economic motivation had more knowledge. To get more yield and improve their economic level they have to know about latest agricultural practices.

A look on the Table-2 indicated that scientific orientation was highly and significantly correlated with knowledge level of IPM technology in cotton crop for trained cotton growers. Whereas, incase of untrained cotton growers there was no significant relationship between scientific orientation and knowledge about IPM technology. It means that level of scientific orientation of trained cotton growers significantly increased with increase in level of knowledge of trained cotton grower about IPM technology having good scientific orientation would naturally try to know advanced technology in agriculture.

The data presented in Table-2 indicated that risk orientation was highly associated with the knowledge of trained cotton growers about IPM technology in cotton crop. Whereas, incase of untrained cotton growers there was no significant relationship between risk orientation and knowledge. Risk orientation is expressed as the degree to which a trained cotton grower is oriented to take risk and has courage to face uncertainties in cotton cultivation. This is possible when a farmer has better knowledge.

Perusal of data presented in Table-2 indicated that attitude was highly associated with the knowledge of trained cotton growers about IPM technology in cotton crop. Whereas, increase of untrained cotton growers, attitude had no significant relationship with knowledge about IPM technology. It can be concluded that positive favourable attitude towards IPM technology in cotton cultivation had significant influence on the knowledge level of trained cotton growers. The reason may be that positive attitude might have helped trained cotton

growers and motivated them to gain knowledge.

The data shown in Table-2 indicated that awareness about IPM technology was observed to be highly correlated with knowledge level of IPM technology of trained cotton growers. Whereas, incase of untrained cotton growers, awareness about IPM technology had no significant relationship with knowledge about IPM technology. It is clear from the data that greater awareness about IPM technology had significant influence on knowledge level of trained cotton growers. The probable reason may be that high awareness has helped trained cotton growers to gain knowledge.

CONCLUSIONS

The vast majority of the IPM trained (94.17 per cent) and untrained (96.67 per cent) cotton growers had medium to high and low to medium level of knowledge regarding IPM technology in cotton, respectively. It was also seen that in case of trained cotton growers Independent variables like age, education, extension contact, mass media exposure, training received, land holding, area under cotton crop, productivity, economic motivation, scientific orientation, risk orientation, attitude towards IPM technology, and awareness about IPM technology were found significantly correlated with knowledge regarding IPM technology in cotton. In case of occupation, there was no significant relationship between occupation and knowledge level of trained cotton growers regarding IPM technology.

Incase of untrained cotton growers education and training received were significantly correlated with knowledge. It means there was a significant relationship between education and training received and knowledge, level regarding IPM technology in cotton. While age, extension contact, mass media exposure, land holding, area under cotton crop, occupation, productivity, economic motivation, scientific orientation, risk orientation attitude towards IPM technology and awareness about IPM technology were not related with the knowledge.