



Research Article

Factors affecting attitude of farmers towards bio-control measures of plant protection

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SUMMARY : The present study was undertaken in middle Gujarat which is operational area of Anand Agricultural University. Total 105 respondents were selected for the study. The data were collected in light of the objectives of the study with the help of well-structured pre-tested Gujarati version interview schedule. Findings of the study revealed that the independent variables studied viz., education, extension contact, training received, economic motivation, risk orientation, scientific orientation and knowledge level of farmers had positive and significant connection with the attitude of farmers towards bio-control measures of plant protection.

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Attitude, Bio-control measures, Plant protection

BACKGROUND AND OBJECTIVES

Biological control is the latest concept in India and it is viewed as an entirely safe technique to the environment. In recent years, concerns have been raised over the effects of the overuse of agricultural pesticides on the environment and human health. Bio-control can be used as an alternative to the chemicals in integrated pest management (IPM) systems. Incorporation of bio-control practices into pest management systems can result in reduced pesticides usage. This will obviously reduce exposure of the legal, environmental, and public safety hazards of pesticides. There are wide scopes for the Indian farmers to adopt biological means of pest control to reduce hazardous effect of pesticides. On other hand, farmers might be facing certain problems in adoption of recommended bio-control measures. Therefore, there is a need to analyze the situation and factors those responsible for not obtaining the desired rate of adoption pertaining to bio-control measures for plant protection. For the adoption of recommended bio-control measures for plant protection, there must be positive attitude of the farmers towards bio-control measures of plant protection.

Hence, greater emphasis should be laid on educating the farmers particularly on sustainable agricultural productivity with substantial and judicious use of bio-control measures of plant protection. One way by which extension scientists can contribute to this task, is to find out better ways and means of promoting bio-control measures of plant protection among the group of farmers. Since, change in knowledge and attitude preceded adoption of an innovation, it is therefore, always important to find out the factor responsible of changing farmer's attitude towards use of bio-control measures of plant protection has been under taken.

RESOURCES AND METHODS

The present study was undertaken in middle Gujarat which is operational area of Anand Agricultural University. Since, August 2009, fifteen training course were conducted by Sardar Smruti Kendra and Bio-Control Unit of Anand Agricultural University jointly and in total, 310 farmers were trained. Seven respondents from each training course were selected at random and hence total 105 respondents were selected for the study. The relationship between characteristics of the farmers

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and their attitude towards use of bio-control measures of plant protection was determined and tested with the help of Karl Pearson's (1978) coefficient correlation test. In light of the objectives, pretested well-structured interview schedule was prepared in Gujarati version. Required information was collected through personal interview technique.

OBSERVATIONS AND ANALYSIS

The action of individual farmer is governed by socio-personal, economic, communicational and psychological factors involved in situation. A farmer shows different degrees of attitude towards various aspects of the bio-control because of the difference in their personal characteristics. Thus, it may be stated that the degree of attitude of respondents towards bio-control measures of plant protection differs with their socio-personal, economic, communicational and psychological characteristics. Hence, considering the importance of these characteristics and review of past research studies, an attempt has been made in this investigation to ascertain the relationship if any, between socio-personal, economic, communicational and psychological characteristics of respondents and attitude towards bio-control measures of plant protection.

A statistical method correlation coefficient was used to calculate the relationship between the characteristics of respondents and their attitudes towards bio-control. The result obtained is presented in Table 1.

Table 1 : Relationship between the characteristics of respondents and their attitude towards bio-control measures of plant protection (n = 105)

Sr. No.	Independent variables	Correlation co-efficient (r' value)
1.	Age	-0.093 NS
2.	Education	0.252 *
3.	Size of family	-0.051 NS
4.	Land holding	0.041 NS
5.	Social participation	0.009 NS
6.	Annual income	-0.146 NS
7.	Extension contact	0.288 **
8.	Mass media exposure	0.018 NS
9.	Training received	0.272 **
10.	Economic motivation	0.413 **
11.	Risk orientation	0.235 *
12.	Scientific orientation	0.321 **
13.	Knowledge of bio-control	0.245 *

* and ** indicate significance of values at P=0.05 and 0.01, respectively

Age and attitude:

It is apparent from the data presented in Table 1 that age had negative and non-significant correlation ($r = -0.093$) with

attitude of respondents towards bio-control measures of plant protection. The probable reason behind it might be due to the fact that old age farmers have greater reluctance to learn and set habit in way of thinking and on the other hand young age farmers have not enough experience which leads them to be neutral about the bio-control measures of plant protection. Thus, irrespective of age, attitude of the farmers towards bio-control measures of plant protection was uniform.

Education and attitude:

The data presented in Table 1 make it clear that education had positive and significant correlation ($r = 0.252^*$) with attitude of respondents towards bio-control measures of plant protection. From the aforesaid discussion, it can be concluded that there was more positivism towards bio-control measures of plant protection in high education group as compare to low education group of farmers as acquisition of formal education helps an individual to interpreted the ideas in rational thinking resulted in to favourable disposition towards an innovation. Hence, education plays key role in determination of attitude.

Family size and attitude:

It is apparent from the data presented in Table 1 that there was negative and non-significant correlation ($r = -0.051$) between size of family and attitude of respondents towards bio-control measures of plant protection. Thus, it can be said that irrespective of family size, attitude of the respondents towards bio-control measures of plant protection was uniform and it did not play any significant role in determination of attitude.

Social participation and attitude:

It is obvious from the data furnished in Table 1 that social participation had positive and non-significant correlation ($r = 0.009$) with attitude of respondents towards bio-control measures of plant protection. During survey, it was observed that most of the farmers had membership in milk cooperative society and services cooperative society, so naturally it did not provide opportunities to the members to interact in an organization way about the use of bio-control measures, which ultimately reflected into nonexistence of its relationship might be the possible explanation of this result.

Land holding and attitude:

The data presented in the Table 1 illustrate that land holding had positive and significant correlation ($r = 0.041$) with the attitude of respondents and their attitude towards bio-control measures of plant protection. It implies that not existence of significant relationship between size of land holding and attitude and non-differential effect of different categories of land holding on different types of attitude of the respondents towards bio-control measures of plant protection.

Annual income and attitude:

It is apparent from the data presented in Table 1 that attitude of respondents had negative and non-significant ($r = -0.146$) correlation with their attitude towards bio-control measures of plant protection was accepted. Epitomize the result it can be said that annual income of the respondents had no any significant influence on their attitude towards bio-control measures of plant protection.

Extension contact and attitude:

The data depicted in Table 1 indicate that extension contact had established positive and significant correlation ($r = 0.288^{**}$) with attitude of respondents and their attitude towards bio-control measures of plant protection at 0.01 level of significance. The result shows that extension contact had positive and significant correlation with attitude. Higher were the contacts of the respondents with the extension personnel, more favourable was their attitude towards bio-control measures of plant protection. The frequency of contact made by the respondents with extension agency enables them to acquire more and more information, improve their skills and increase their knowledge. Higher extension contact helps to broaden the outlook facilitate to exchange of thoughts and ideas which may help to remove the obscure point of the respondents. This would help to have positive disposition towards bio-control measures of plant protection.

Mass media exposure and attitude:

It is clear from the data depicted in Table 1 that mass media exposure had positive and non-significant correlation ($r = 0.018$) with attitude of respondents towards bio-control measures of plant protection. Generally frequency of farm telecast, broadcast and publication regarding information about bio-control measures of plant protection is comparatively is low, so that respondents did not get enough clue from such information resulted in to establishment of non-significant relationship with their attitude.

Training received and attitude:

The data depicted in Table 1 indicate that training received had established positive and significant correlation ($r = 0.272^{**}$) with attitude of respondents and their attitude towards bio-control measures of plant protection at 0.01 level of significance. Concluding the finding, it can be said that training plays an important role in shaping respondents attitude in positive direction towards bio-control measures of plant protection and hence manipulation in desirable direction with regard to attitude can be possible through training.

Economic motivation and attitude:

It is obvious from the data furnished in Table 1 that economic motivation had established positive and significant

correlation ($r = 0.413^{**}$) with attitude of respondents and their attitude towards bio-control measures of plant protection at 0.01 level of significance. From the finding, it can be summarized that economic motivation is the basic character upon which other motives and drives are built. When one develops higher levels of economic motivation and wants to achieve it, he would strive hard and get internalize himself about different aspects of bio-control. Hence, it is quite natural to expect the influence of economic motivation on attitude.

Risk orientation and attitude:

The data depicted in Table 1 indicate that risk orientation had positive and significant correlation ($r = 0.235$) with attitude of respondents and their attitude towards bio-control measures of plant protection. From the above finding, it can be inferred that, the respondents with higher level of risk orientation would be much ahead of others in exploiting the potentiality of the technology availed which enforced them to think in positive direction, which open a new avenue towards favourable disposition, which in turn demonstrated its significant influence on attitude.

Scientific orientation and attitude:

It is obvious from the data furnished in Table 1 that scientific orientation had established positive and significant correlation ($r = 0.321^{**}$) with attitude of respondents and their attitude towards bio-control measures of plant protection at 0.01 level of significance. Thus, it can be concluded that scientific orientation of an individual leads to develop reception power regarding the complicated bio-control plant protection technology, thereby creating positive disposition towards an innovation, which ultimately reflected in formation of favourable attitude of those who are more scientific orientated.

Knowledge and attitude:

The data presented in Table 1 make it clear that there was positive and significant correlation ($r = 0.245^*$) between knowledge of respondents regarding bio-control measures of plant protection and their attitude towards bio-control measures of plant protection. The conclusion emerged out from the above findings, indicates that knowledge regarding bio-control measures of plant protection offers an impetus for working for excellence which would enable an individual to manifest this excellence in the field of activity resulting in developing favourable attitude.

Conclusion:

It is concluded from the above discussion that independent variables *viz.*, education, extension contact, training received, economic motivation, risk orientation, scientific orientation and knowledge level of farmers had

positive and significant connection with the attitude of farmers towards bio-control measures of plant protection. More efforts should be made by the extension agencies to establish in depth extension contact with the farmers and their background factors which influence the attitude of farmers towards bio-control measures of plant protection in terms of change in behavioural components must be reckon within training programme, Government and extension functionary should conduct training at grass root level in order to create awareness about bio-control measures and efforts should be made by extension workers and officials of Anand Agricultural University to manipulate the attitude in desirable direction by providing training as per their felt needs.

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