

RELATIONSHIP AND INFLUENCE OF INDEPENDENT VARIABLES ON HOW TO DO KNOWLEDGE OF INTEGRATED PEST MANAGEMENT PRACTICES UNDER RAINFED CONDITION-A CRITICAL ANALYSIS

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Abstract

The cotton is the major commercial crop in the world. The cotton production in India is low as compared to many other countries. Under the impact of green revolution, due to mono cropping, there have been many outbreaks of insect pests especially on rice and cotton. To meet these challenges, it is of utmost important that in future the insect problems would have to be tackled through integrated pest management. The IPM aims at educating the farmers and extension agencies through farmers' field schools. Coimbatore district stands first in total number of IPM-FFS training programmes conducted for cotton throughout the Tamil Nadu over the years and hence, it was selected for the study. The highest area under cotton and maximum number of IPM-FFS training programmes conducted were considered as the criteria to select the taluk representing rainfed condition. The same criteria were used for selection of Block where Avinashi block under rainfed condition were selected. In Avinashi block, four villages were selected. A sample of 100 farmers was selected for study. This study deals with the relationship and influence of profile characteristics with how to do knowledge of IPM oriented cotton growers under rainfed condition. When all the other variables are kept at constant level, a unit increase in educational status, mass media exposure and innovativeness increase in how to do knowledge by 1.3288, 0.331 and 3.0458 units respectively among IPM oriented cotton growers under rainfed condition.

Key words: integrated pest management, farmers' field schools, cotton cultivation, etc.

1. Introduction

The white gold occupied major parts of commercial crops. The area under cotton in India is the largest and constitutes nearly one-fourth of the world's cotton area. Under the impact of green revolution, due to mono cropping, there have been many outbreaks of insect pests especially on rice and cotton. To meet these challenges, it is of utmost important that in future the insect problems would have to be tackled through integrated pest management. IPM has been defined by Pretty, et al. as the integrated use of some or all the pest control strategies in a way that not only reduce pest population to economically acceptable levels but it is non-polluting. The IPM aims at educating the

farmers and extension agencies through farmers' field schools. Under FFS programme, farmers are made experts in identifying natural enemies of pests, monitoring regular pests and taking suitable management measures. In the year 1999-2000 under Intensive Cotton Development Programme, totally 1500 FFS were organized and 45000 cotton growers were trained throughout India. Coimbatore district stands first in total number of IPM-FFS training programmes conducted for cotton throughout the Tamil Nadu State over the years and hence, it was selected for the study.

2. Objective of the study

The specific objective of this study was to find out the relationship and influence of how to do knowledge of integrated pest management adopting cotton growers with their profile characteristics under rainfed agro-ecosystem in Coimbatore district of Tamil Nadu.

3. Review of literature

Vanilla (1998) reported that the variables like age, education, farming experience, social participation, economic motivation, risk preference and material possession were found to have positive and significant relationship with how to do knowledge, whereas farming experience was found to have insignificant relation with how to do knowledge.

Arulmurugan (2000) opined that the characteristics such as social participation, economic motivation and risk preference showed positive and significant relationship with how to do knowledge. The other variables such as age, farm size, farming experience, extension agency contact and mass media exposure exhibited insignificant relationship with how to do knowledge.

Jayalakshmi (2000) concluded that farm size, material possession and contact with extension agency showed positive and significant relationship with how to do knowledge, whereas age, education, farming experience, occupation status, social participation, mass media exposure, risk orientation, economic motivation and innovativeness showed insignificant relationship with how to do knowledge.

Kumar (2002) inferred that education, extension agency contact, social participation, innovativeness, mass media exposure, risk orientation had positive and significant relationship with knowledge of the farmers.

Gopinath (2005) reported that knowledge and education, extension agency contact, social participation, economic motivation, innovativeness, mass media exposure, risk orientation and scientific orientation were positively and significantly related with each other.

Kumar (2012) found that education, extension agency contact, social participation, economic motivation, innovativeness, mass media exposure, risk orientation and scientific orientation had positive and significant relationship with knowledge of the farmers.

4. Research methodology

Coimbatore district stands first in total number of IPM-FFS training programmes conducted for cotton through out the Tamil Nadu State over the years and hence, it was selected for the study. The highest area under cotton and maximum number of IPM-FFS training programmes conducted were considered as the criteria to select the taluk representing rainfed condition. The same criteria were used for selection of Block where Avinashi block under rainfed condition were selected. In Avinashi block, four villages were selected. A sample of 100 farmers was selected for study. How to do knowledge consists of information that is necessary to use an innovation properly. The adopter must understand what quantity of an innovation to secure, how to do use it correctly and so on. The list of items that would help to measure the how to do knowledge on recommended IPM technologies were prepared in consultation with entomologists, extension scientists and by referring to the IPM-FFS guide.

5. Results and discussions

Relationship of independent variables with how to do knowledge of IPM practices under rainfed condition: It may be seen from Table 1 that out of the sixteen variables studied under rainfed condition, the correlation co-efficient value of nine variables viz. educational status, area under cotton cultivation, annual income, IPM equipment possession, extension agency contact, mass media exposure, innovativeness, risk orientation and economic motivation were found to have positive and significant relationship at 1 per cent level with how to do knowledge. The risk orientation had showed positive and significant relationship at 5 per cent level with awareness knowledge, whereas farm size showed negatively significant relationship at 1 per cent level with how to do knowledge. The remaining characteristics viz. age, occupation, farming experience, experience in cotton cultivation, social participation and attributes of IPM were insignificantly correlated with how to do knowledge.

Influence of independent variables with how to do knowledge of IPM practices under rainfed condition: The results of multiple regression are given in Table 1, which indicated that out of the selected sixteen characteristics under rainfed condition, only three characters viz. educational status, mass media exposure and innovativeness had positive and significant influence towards the how to do knowledge among IPM oriented cotton growers under rainfed condition. The R square value indicated that all the 16 characteristics taken together explained as much as 50.40 per cent of the variation in the how to do knowledge, *ceteris paribus*. It may be inferred that when all the other variables are kept at constant level, a unit increase in educational status, mass media exposure and

innovativeness increase in how to do knowledge by 1.076, 0.331 and 3.147 units respectively among IPM oriented cotton growers under rainfed condition.

TABLE 1

Correlation and Multiple Regression Analysis of Independent Variables on How to Do Knowledge of IPM Practices under Rainfed Condition

V. No.	Variables	'r' value	't' value	B value	Standard error
1	Age	-0.1086 ^{NS}	0.7932 ^{NS}	0.0981	0.1237
2	Educational status	0.5359**	3.1310**	1.3288	0.4244
3	Occupation	0.1232 ^{NS}	0.5188 ^{NS}	1.0996	2.1198
4	Farm size	-0.4080**	-0.2506 ^{NS}	-0.1677	0.6691
5	Area under cotton cultivation	0.3143**	-1.1082 ^{NS}	-0.8611	0.7770
6	Farming experience	-0.1836 ^{NS}	-1.3209 ^{NS}	-0.1671	0.2165
7	Experience in cotton cultivation	-0.0868 ^{NS}	1.6167 ^{NS}	0.1895	0.1172
8	Annual income	0.3928**	0.4984 ^{NS}	0.0248	0.0498
9	Social participation	0.0515 ^{NS}	-0.8995 ^{NS}	-0.2926	0.3253
10	IPM equipment possession	0.4979**	0.4227 ^{NS}	0.0791	0.1871
11	Extension agency contact	0.5387**	0.4135 ^{NS}	0.0487	0.1178
12	Mass media exposure	0.5691**	1.6494 ^{NS}	0.2444	0.1482
13	Risk orientation	0.3290**	-0.7066 ^{NS}	-0.0899	0.1271
14	Economic motivation	0.3284**	1.6694 ^{NS}	0.1939	0.1161
15	Innovativeness	0.5686**	3.6497**	3.0458	0.8345
16	Attributes of IPM	0.0431 ^{NS}	-0.8712 ^{NS}	-0.4496	0.5161

** Significant at 1 % level, $R^2 = 0.5661$, F value = 6.7693** * Significant at 5 % level, NS – Not-significant

6. Conclusion

Cotton is a very important commercial crop and is of vitally important both in the agricultural as well as industrial economy. The farmers how to do knowledge was increased by attended IPM-FFS training conducted by State Department of Agriculture in the survey conducted area. It may be concluded that when all the other variables are kept at constant level, a unit increase in educational

status, mass media exposure and innovativeness increase in how to do knowledge among IPM oriented cotton growers under rainfed condition.

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