

Constraints in Adoption of Integrated Pest Management (IPM) Practices by Rice Growing Farmers of Jammu Division

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ABSTRACT

Numbers of farmers have been trained in the 14 weeks rice IPM-FFS programme. Despite it, adoption of IPM is low owing to a number of constraints. So, the present study was conducted on 240 IPM trained rice growers of Jammu division to identify the constraints in the adoption of IPM practices. The study revealed that the respondents were facing number of constraints that restricted their action towards adoption of IPM practices. Lack of knowledge, lack of skill, the laborious and complex nature of IPM practices and non-availability of inputs and tools of IPM were the major constraints reported by the respondents. Small farm size and lack of information about recent pest management strategies, extension services, involvement of IPM experts, community participation were also reported by respondents as major constraints. Therefore, it is suggested to re-orient the IPM-FFS programme and provide the farmers' skill oriented training of IPM and emphasis should be given to practices where the farmers need knowledge and skill which in turn can facilitate the adoption of IPM practices.

Key words: *Integrated pest management (IPM); constraints; knowledge; skill*

IPM is the effective solution recommended with the objective to utilize all suitable techniques harmoniously and blending them in a compatible manner so as to minimize pest population below Economic Threshold Level (ETL), and providing safety to environment, pesticides free food commodities, low input based crop production etc. This national IPM programme began an innovative training programme that entailed a season long experiential learning by farmers to understand the ecology of the rice fields and other crops. The key objective of FFS is to empower field school participants and make them confident pest experts, self-teaching experimenters, and effective trainers of other farmers (Quizon et al., 2000). The Government of India also adopted IPM as a cardinal principle of plant protection in 1985. IPM related activities are being implemented through Central Integrated Pest Management Centers (CIPMCs). IPM programme in the state of Jammu and Kashmir was started in the year 1993-94. Since then a number of farmers have been trained in the 14 weeks Farmers Field School (FFS) programme organized by Central Integrated Pest Management centre (CIPMC), Jammu. Despite it, adoption of IPM is low owing to a number of constraints. So, the present study was

undertaken to identify the constraints in the adoption of IPM practices in rice crop at farmers' level.

METHODOLOGY

The present study was conducted in the purposively selected Jammu and Samba districts of the Jammu division of the J&K state. Multistage purposive cum random sampling procedure was followed for the purpose of the study. Four blocks namely Bishnah, Akhnoor, R.S. Pura and Marh from Jammu and two blocks namely Ramgarh and Vijay Pur from Samba were selected randomly for the purpose of study. On the basis of lists of IPM trained rice growers, two villages from each block and 20 IPM trained farmers from each village were selected randomly. Thus, a final sample of 240 respondents from 12 villages was selected. Four types of major IPM practices namely cultural, manual/mechanical, biological and chemical were selected. Data were collected from Dec, 2008 to June, 2009. For studying various constraints faced by the IPM trained rice growers, the respondents were asked to mention constraints which had influenced their decision for non-adoption of the recommended IPM practices. The data were analyzed with the help of suitable statistical measures such as frequencies and percentages.

RESULTS AND DISCUSSION

Constraints may be defined as the certain forces or factors that prevent and restrict the action of others. It was observed from the findings of the study that the respondents were facing number of constraints that restricted their action towards adoption of IPM practices.

It is evident from the Table 1 that regarding adoption of recommended cultural practices, lack of knowledge about balanced use of fertilizers (100%), lack of knowledge and skill about seedling treatment (88%), non-availability of fertilizers (74%), non-availability of labour on peak season (69%), high wages of labour (66%), lack of knowledge of proper water management (65%), lack of knowledge about benefits of harvesting close to ground level (51%), lack of knowledge and skill about seed treatment (50%), non-availability of seed at proper time (50%) were the major constraints faced by the farmers. Krishnamurthy et al. (2005) also attributed the same constraints that hinder the adoption process. The findings shows that the IPM-FFS training programme had failed to increase the knowledge and skill of respondents.

Table 1. Constraints faced by the respondents in adoption of cultural practices

Constraints	No.	%	Rank
Non-availability of seed at proper time	119	50	IX
Lack of knowledge and skill about seed treatment	121	50	VIII
Lack of knowledge and skill about seedling treatment	212	88	II
Non-availability of fertilizers at timely	178	74	III
Lack of knowledge about balanced use of fertilizers	240	100	I
Non-availability of labour on peak season	165	69	IV
High wages of labour	159	66	V
Lack of knowledge about proper water management	156	65	VI
Lack of knowledge about benefits of harvesting to ground level	122	51	VII

The characteristics of technology have an important role in farmers' adoption. The data given in the Table 2 indicates that in adoption of manual and mechanical practices, laborious nature of IPM technology hinder the adoption process as the labour intensive constraint reported by 87 per cent respondents. Non-availability of IPM tools (82%) and lack of skill in using IPM tools (77%) were also reported as the major constraints. Peshin and Kalra (2000) also reported the same results.

Table 2. Constraints faced by the respondents in adoption of manual/ mechanical practices

Constraints	No.	%	Rank
Non-availability of IPM tools	198	82	II
Lack of skill in using IPM tools	185	77	III
Labour intensive	210	87	I
Lack of knowledge about manual/mechanical methods	94	39	IV

Table 3. Constraints faced by the respondents in adoption of biological and chemical practices

Constraints	No.	%	Rank
Lack of knowledge about bio-control agents	128	53	V
Lack of knowledge about bio-fertilizers	175	73	IV
Non-availability of bio-control agents and bio-fertilizers	218	91	I
Lack of knowledge and skill about Pest-defender ratio	216	90	II
Lack of knowledge and skill for determining ETL	213	89	III
Lack of knowledge about adverse effect of pesticides	76	32	VI

Table 4. Some other social and communicational constraints faced by the IPM trained rice growers in adoption of IPM practices

Constraints	No.	%	Rank
Lack of proper training facilities	160	67	IV
Lack of extension services	172	72	III
Lack of involvement of IPM experts	160	67	IV
Small farm size	184	77	I
Lack of community participation in adoption of IPM	148	62	V
Lack of information about recent Pest-management strategies	175	73	II

The Table 3 reveals that in case of adoption of biological and chemical practices, the major constraints were non-availability of bio-control agents and bio-fertilizers (91%), lack of knowledge and skill about pest-defender ratio (90%), lack of knowledge and skill for determining ETL (89%), lack of knowledge about bio-fertilizers (73%), lack of knowledge about bio-control agents (53%) and lack of knowledge about adverse effect of pesticides (32%). These results are in line with the findings of Krishnamurthy et al. (2005), Mandal and Jha (2008) and Verma (2006).

The perusal of the data presented in the Table 4 reveals that the small farm size (77%), lack of information about recent pest management strategies

(73%), lack of extension services (72%), lack of training facilities (67%), lack of involvement of IPM experts (67%), and lack of community participation in adoption of IPM (62%) were also reported by respondents in adoption of IPM practices. The same findings are also reported by the *Kumar (2004)*.

CONCLUSION

The results revealed that the lack of knowledge is the key obstacle to the adoption of different IPM practices. Lack of skill was also reported by the respondents as a major constraint. This reveals that the IPM-FFS training programme had not provided experiential learning to the farmers to increase their knowledge and skill. The laborious and complex nature of IPM practices and non-availability of inputs and tools of IPM were also reported by the respondents as the major constraint in the adoption of IPM practices. Therefore, it is important to re-orient the IPM-FFS

programme and provide the farmers' skill oriented training of IPM.

Span of organizing training programme needed to be increased from sowing of seed to the harvesting of the crop to increase the knowledge level of farmers regarding each and every aspect of IPM technology. Periodical trainings need to be organized for refreshing the knowledge of IPM trained farmers. IPM tools and inputs should be easily and economically provided to the farmers. IPM technology is relatively complex and requires sufficient acquisition of knowledge. The extension workers should act more as a collaborator, consultant, and facilitator in dissemination of the knowledge. Knowledge level of farmers about IPM technology should be increased by the use of different mass media, field visits and demonstrations. If possible, select the young farmers for IPM-FFS training programme as they can retain maximum knowledge and adopt the IPM practices gradually.

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