



# Knowledge and Adoption Level of Integrated Pest Management (IPM) Practices among Paddy Growers in Kathua District of Jammu and Kashmir

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**ABSTRACT:** *Keeping in view the importance of integrated Pest Management in paddy, a study was conducted in Kathua district of J&K with the objective to find out the knowledge level and adoption level of IPM practices among paddy growers. Primary data were collected from 200 farmers from four blocks namely Hiranagar, Ghagwal, Barnoti and Kathua using random sampling method. Partially structured interview schedule was used for data collection, using personal interview. The study revealed that the paddy growers of selected area were not having proper knowledge about Integrated Pest management Practices. They were familiar to cultural practices while they had poor knowledge about mechanical, biological and chemical practices regarding IPM. Therefore, their adoption level was also poor and limited to cultural practices only. Findings also show a large gap between knowledge and adoption in respect to IPM practices. The results suggest that paddy growers with more knowledge level of IPM practices had more adoption level of IPM practices.*

**Keywords:** *Adoption, IPM, Paddy growers & Knowledge*

## Introduction

Rice (*Oryza sativa*) is one of the most important cereal crops and is grown in approximately 148 million hectare of land globally. Rice is an important Kharif crop of Kathua district of Jammu and Kashmir and is next to wheat. From nursery phase to harvesting of rice it is attacked by several types of insects, pests and diseases causing enormous grain yield losses, which may vary from 20-50%. For minimising losses and to increase the profitability, farmers generally use chemical pesticides in case of commercial crops like paddy, as farming become more market oriented. In view of more use of chemical pesticides by farmers which cause environmental pollution, IPM being an eco-friendly approach, socially acceptable and economically viable has been widely accepted across the country. The IPM package encompasses different management strategies for pest and disease problems. IPM is an eco-friendly approach for managing pest and diseases utilizing all available techniques and methods such as Cultural, mechanical, biological and chemical methods to suppress the pest population below economic injury threshold level. Thus, IPM not only helps in minimizing pest population ecologically but is also helpful for the growers economically and conclusively in agribusiness. But due to lack of knowledge about IPM practices farmers are not adopting these practices.



On this background, the present study was planned in paddy growing area of Kathua District of Jammu and Kashmir with objectives:

1. To study the knowledge level of IPM practices among paddy growers.
2. To study the adoption level of IPM practices among paddy growers.

### Methodology

The study was purposively carried out in Kathua district of Jammu and Kashmir due to the importance of traditionally grown rice crop and more use of agro chemicals. Kathua district is divided into eight (8) blocks. Out of eight blocks four blocks of Kathua district namely Hiranagar, Ghagwal, Barnoti & Kathua were selected. The study is based on the primary data collected for the year kharif 2018 and 2019. Five villages were selected purposively from each Block, ten paddy growers from each village were randomly selected, thus making a total size of 200 respondents for the study. All the respondents were personally interviewed with the help of a partially structured interview schedule on IPM in which the knowledge level of each individual in which respondents were categorised into three groups as “fully known” (score 3), “partially known” (score 2), “Not aware” (score 1) and the adoption level were also categorised into three groups as “High level” (Score 3), “Medium level” (Score 2), “Low level” (Score 1). On the basis of score, mean score value and rank orders of both the knowledge level and adoption level were calculated.

### Results and Discussion

**Knowledge level of IPM Practices among Paddy growers:** The knowledge level of paddy growers about IPM practices was analysed in which 20 practices and four groups were delineated for the study. The respondents were categorised into three level of knowledge i.e fully knowledge, partially knowledge and not aware. Practice wise distribution of the respondents according to knowledge about IPM practices is presented in table I and the consequences revealed that highest mean value 2.65 was for summer deep ploughing with Rank I, followed by farm yard manure, Seed treatment, recommended seed rate, crop rotation and mixed cropping having mean value 2.60, 2.58, 2.23, 2.21 and 2.10 with rank II, III, IV, V and VI respectively. Other IPM practices show poor knowledge level with poor mean score value and poor rank order. The above findings are in conformation with the findings reported by H.C.Singh *et al.*, (2013). The respondents have poor knowledge about biological practices like Bio pesticides, Natural enemies and Neem based products, having mean value 1.17, 1.15 and 1.27 respectively with rank XIX, XX and XVI respectively.

**Adoption level of IPM Practices among Paddy growers:** The adoption level of paddy growers about IPM practices was analysed as high level, medium level and low level. The practices wise distribution of the respondents according to adoption level about IPM practice is presented in table 2. It is evident from table 2 that adoption level was higher in case of summer deep ploughing with mean score value of 2.48 having rank I followed by farm yard manure, recommended seed rate, seed treatment and crop rotation with mean score value 1.99, 1.63, 1.15 and 1.0 respectively. It means that cultural practices were more adopted by paddy growers while other IPM practices like Mechanical, Biological and Chemical were either poorly adopted or not adopted due to either lack of knowledge, skill or other factor. The similar results were also observed by R.N.Yadav *et al.*, 2010 and Surat Singh *et al.*, (2014).



### Conclusion

The results of the study indicate that paddy growers of Kathua district are lacking in knowledge on integrated pest management practices. Generally, paddy growers have good knowledge about cultural practices therefore their adoption level was also high in this case. Paddy growers were having poor knowledge about Biological practices. But in case of mechanical practices have good knowledge about hand picking of pest and their destruction and in case of chemical practices have good knowledge about seed treatment of paddy. Hence their response about adoption level was also similar to knowledge level. This shows that respondent's poor knowledge is associated with poor adoption. A large gap exists between knowledge and adoption. Therefore there is a need of skill oriented training for paddy growers regarding Integrated Pest Management to enhance the knowledge and adoption of paddy growers in the study area.

## References

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**Table 1: Practices wise knowledge level of IPM among Paddy growers**

**N=200**

IPM Practices	Knowledge level						Mean value	Rank Order
	Fully Known		Partially Known		Not aware			
	No.	%	No.	%	No.	%		
<b><i>Cultural Practices</i></b>								
Summer deep ploughing	142	71.00	46	23.00	12	06.00	2.65	I
Recommended seed rate	65	32.50	115	57.50	20	10.00	2.23	IV
Crop Rotation	85	42.50	72	36.00	43	21.50	2.21	V
Mixed Cropping	58	29.00	104	52.00	38	19.00	2.10	VI
Farm Yard Manure (FYM)	130	65.00	60	30.00	10	05.00	2.60	11
<b><i>Mechanical Practices</i></b>								
Rouging	45	22.50	98	49.00	57	28.50	1.94	VII
Monitoring Pest through pheromones	15	07.50	32	16.00	153	76.50	1.31	XV
Hand picking of Pest and their destruction	48	24.00	42	21.00	110	55.00	1.69	IX
Use of light traps	10	05.00	52	26.00	138	69.00	1.36	XIV
Use of Rope in standing crop	12	06.00	24	12.00	164	82.00	1.24	XVII
<b><i>Biological practices</i></b>								
Bio pesticides	9	4.500	16	08.00	175	87.50	1.17	XIX
Bio fertilizers	28	14.00	48	24.00	124	62.00	1.52	XII
Natural Enemies	5	02.50	19	09.50	176	88.00	1.15	XX
Resistant varieties	34	17.00	44	22.00	122	61.00	1.56	XI
Neem based products	9	04.50	35	17.50	156	78.00	1.27	XVI
<b><i>Chemical practices</i></b>								
Seed treatment	112	56.00	68	34.00	44	22.00	2.58	III
Balanced Dose of Fertilisers	32	16.00	76	38.00	92	46.00	1.70	VIII
Recommended dose of Pesticides	26	13.00	84	42.00	90	45.00	1.68	X
Judicious use of pesticides	23	11.50	38	19.00	139	69.50	1.42	XIII
Judicious use of plant harmones	14	07.00	18	09.00	168	84.00	1.23	XVIII



**Table 2: Practices wise Adoption level of IPM among Paddy growers (N=200)**

IPM Practices	Adoption level						Mean value	Rank Order
	High level		Medium Level		Low Level			
	No.	%	No.	%	No.	%		
<b><i>Cultural Practices</i></b>								
Summer deep ploughing	130	65.00	42	21.00	22	11.00	2.48	I
Recommended seed rate	62	31.00	54	27.00	33	16.50	1.63	III
Crop Rotation	34	17.00	33	16.50	32	16.00	1.00	V
Mixed Cropping	00	00.00	00	00.00	00	00.00	00.0	00
Farm Yard Manure (FYM)	82	41.00	67	33.50	18	09.00	1.99	II
<b><i>Mechanical Practices</i></b>								
Rouging	16	08.00	28	14.00	9	04.50	0.61	VII
Monitoring Pest through pheromones	21	10.50	11	05.50	5	02.50	0.45	X
Hand picking of Pest and their destruction	13	06.50	7	03.50	2	01.00	0.28	XIII
Use of light traps	00	00.00	00	00.00	00	00.00	-	-
Use of Rope in standing crop	4	02.00	6	03.00	00	00.00	0.12	XIV
<b><i>Biological practices</i></b>								
Bio pesticides	6	04.00	00	00.00	00	00.00	0.09	XV
Bio fertilizers	23	11.50	9.0	04.50	00	00.00	0.44	XI
Natural Enemies	00	00.00	00	00.00	00	00.00	0.00	00
Resistant varieties	28	14.00	17	08.50	00	00.00	0.59	VII
Neem based products	5	02.50	00	00.00	00	00.00	0.075	XVI
<b><i>Chemical practices</i></b>								
Seed treatment	61	30.50	15	07.50	17	08.50	1.15	IV
Balanced Dose of Fertilisers	24	12.00	29	14.50	8	04.00	0.70	VI
Recommended dose of Pesticides	14	07.00	24	12.00	5	02.50	0.47	IX
Safe use of pesticides	12	06.00	17	08.50	13	06.50	0.41	XII
Judicious use of plant harmones	00	00.00	00	00.00	00	00.0	00.0	00