Adoption of Farmers about Integrated Weed Management (IWM) Practices in Major Crops (overall) in Mahaboobnagar District of Telangana State

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ABSTRACT

The present investigation was carried out in Mahaboobnagar district of Telangana. Ex-post facto research design was followed selecting 120 respondents at random from four mandals of twelve villages of the district. We studied knowledge of farmers on various IWM practices of major crops as recommended by DOAs, ANGRAU and PJTSAU which were suitable to the study area were prepared after consultation with subject matter specialists. The findings revealed that majority of the respondents (50.85%) had medium level of extent of adoption followed by low (25.00%), high (15.85%) and very low (8.30%) level of extent of adoption. It can be concluded that there was a positive and significant relationship between level of extent of adoption of respondents on overall IWM practices and variables viz. education, farm size, farming experience, training, extension contact, mass media exposure, information seeking behaviour, farm mechanization status, risk orientation and innovativeness.

Key words: *Adoption and Integrated weed management practices.*

INTRODUCTION

Weeds are unwanted and undesirable plants which interfere with the utilization of land and water resources. Weeds are an important factor in the management of all land and water resources, but it effect is greatest on agriculture. The losses caused by weeds exceed the losses caused by any other category of agricultural pests. Of the total annual loss in agriculture produce, weeds account for 45 per cent, insect 30 per cent, disease 20 per cent and other pests 5 per cent. The different traditional methods like manual weeding, intercultural operations and herbicide spraying farmers practicing is separately. Integrated weed management (IWM) is the control of weeds through a long-term management approach, using several weed management techniques such as: Physical control, Chemical control, Biological control and Cultural control methods. Therefore, a system approach to weed management known as "integrated weed management systems" (IWMS) is gaining importance.

MATERIAL AND METHODS

Ex-post facto research design was used in the present investigation. The state of Telangana was choosen as the locale of the study and Mahaboobnagar district of Telangana was randomly chosen and 4 mandals in the district were selected randomly. From all the selected mandals, a list of villages containing farmers practicing IMW practices was obtained from Department of agriculture. From this list 3 villages from each mandal were selected randomly. Thus a total of 12 villages were selected for the study. Ten IWM practising respondents from each village were selected randomly using lottery method, thus making a total of 120 respondents for the study. For measuring respondents knowledge on IWM practices, a knowledge test was developed. Data was collected using interview schedule developed for the study. Based on obtained scores the respondents were grouped into low, medium and high extent of adoption categories according to equal interval method. The collected data was analysed using appropriate statistical tools like frequency and percentage, class interval, arithmetic mean ($\overline{X}$), standard deviation and co- efficient of correlation.

SCORING AND CATEGORISATION

The overall adoption (Summing up all crops adoption) maximum and minimum possible scores was 0 to 82. By summing up individual scores the maximum and minimum obtained score was 6 to 18. Based on obtained scores the respondents were grouped into low, medium and high knowledge categories according to equal interval method as shown below.

Table 1:

S. No.	Category	Score
1.	Very low	6-9
2.	Low	9-12
3.	Medium	12-15
4.	High	15-18

RESULTS AND DISCUSSION

Table 2: Distribution of the respondents based on their overall extent of adoption of IWM practices in selected crops (N=120)

S. No.	Extent of Adoption	Class interval	Frequency	Percentage (%)
1	Very low	6-9	10	8.30
2	Low	9-12	30	25.00
3	Medium	12-15	61	50.85
4	High	15-18	19	15.85

From the above Table it was evident that, majority of the farmers (50.85%) had medium level of adoption followed by low (25.00%), high (19.17%) and very low (8.30%) level of adoption.

The reason for this kind of result might be due to their medium to low levels of knowledge, medium education, medium extension contacts, medium farm mechanization status, medium risk orientation, medium innovativeness, medium input availability and medium labour availability.

The above results were in partial confirmation with findings reported by Balakrishnan and Vasanthkumar[1].

Overall extent of adoption of farmers Vs profile characteristics

Null Hypothesis

There will be no significant relationship between the extent of adoption of IWM practices by the respondents and their profile characteristics and both of these are independent.

Empirical Hypothesis

There will be significant relationship between the extent of adoption of IWM practices by the respondents and their profile characteristics and both of these are dependent.

It is revealed from the table 3 that calculated 'r' values between education, farming experience, mass media exposure and information seeking behavior and the extent of adoption of IWM practices by the respondents were greater than table V value at 0.05 level of probability, whereas, the calculated 'r' value of the variables farm size, training, extension contact, farm mechanization status, risk orientation and innovativeness were greater than table 'r' value at 0.01 level of probability. Hence, null hypothesis was rejected and empirical hypothesis was accepted for these variables.

On the other hand the calculated 'r' values between knowledge and age, input availability and labour availability less than table 'r' value. Hence null hypothesis accepted and empirical hypothesis was rejected. Therefore, it can be concluded that there was no significant relationship between above characteristic and knowledge of famers.

Probable reason for these results might be that education, farming experience, trainings, extension contacts, mass media exposure and information seeking behaviour would enable a farmer to get acquainted with upto date knowledge and increased knowledge levels lead to adoption when a farmer is more innovative, willing to take risk and has access to farm mechanization.

Relationship between profile characteristics with extent of adoption of respondents

1) Age Vs Extent of adoption

The table 3 highlights that, the variable age was in positively non significant associated with extent of adoption of farmers, the reason might be that majority of the respondents were middle aged. This age farmers are less innovative as compared to young age.

2) Education Vs Extent of adoption

The results inferred from the table 3 revealed that there was a positive and significant association between education and extent of adoption of respondents. Education enhances the level of adoption of respondents. Higher the education, wider and better will be the interaction. It is a well known fact that education brings desirable changes by in knowledge, adoption and social status. The higher the education of a person, the more extent of adoption and vice versa. Hence this kind of relationship appeared in the investigation.

3) Farm size Vs Extent of adoption

The results inferred revealed that there was a positive and significant association between farm size and extent of adoption of respondents. Farm size enhances the extent of adoption of respondents. Higher the farm size, more efforts are needed in crop management. It is a well known fact that high farm size respondents grow more crops and more interested on latest technologies. Hence this kind of relationship appeared in the investigation.The results were in confirmation with findings reported by Shanti Nirmala[2].

4) Faming experience Vs Extent of adoption

The variable farming experience had positive and significant relationship with extent of adoption of farmers, the reason might be that majority of the respondents were in medium to low farming experience level. Less farming experience leads to less opportunity and less extent of adoption of IWM practices.

5) Training Vs Extent of adoption

It is clear from the table 3 that there was a positive and significant association between training and extent of adoption of respondents, the reason might be that, training brings about desirable changes in knowledge, skill and attitude. Participation in training's improves farmers interaction with scientists, officials and progressive farmers and get motivated to

adopt the new practices. These results were in conformity with Nirmala[2] findings.

6) Extension contact Vs Extent of adoption

The results revealed that there was a positive and significant association between extension contact and extent of adoption of respondents. Due to frequent extension contacts there will be definitely knowledge transfer from extension agent to fanner. Logically, a farmer with more extension contacts will have more adoption of agricultural innovations. Hence this kind result was noticed.

7) Mass media exposure Vs Extent of adoption

It is evident from above table that there was a positive and significant association between extent of adoption and mass media exposure, the reason might be that respondents who had more mass media interactions will have more extent of adoption of IWM practices. The results were in confirmation with the findings reported by Saxena and Singh[3].

8) Information seeking behaviour Vs Extent of adoption

The results indicate that there was a positive and significant association between information seeking behaviour and extent of adoption of respondents. The reason might be that the respondents who had more information seeking behaviour had advanced knowledge regarding agricultural innovations. Naturally, the more the usage of information sources, the more the increase in adoption level for any individual on any aspect. Hence this kind of relationship might have appeared. The results were in accordance with Shanti Nirmala[2].

9) Farm mechanization status Vs Extent of adoption

Perusal of the table 3 indicated that there was a positive and significant association between extent of adoption and farm mechanization status of the respondents. The reason might be that the farmers who follow modern ways crop production will try to use mechanized IWM practices. With adequate farm machinery available either with them or on rent would leads to moderate extent of adoption effectively. The results were in confirmation with findings reported by Verma[4].

10) Risk orientation Vs Extent of adoption

Perusal of the table 3 indicated that there was a positive and significant association between extent of adoption and risk orientation of the respondents. The reason might be that the farmer who is more risk taking will try to gather the information on IWM practices from all media sources available to them and further gets their doubts clarified by interacting with Extension officers and adopts more quickly than rest of the farmers. Similar findings were observed by Nirmala[2].

11) Innovativeness Vs Extent of adoption

The variable innovativeness was found to have positively and significant association with extent of adoption of farmers, the reason might be that respondents are more innovative and had more risk taking ability hence increased extent of adoption of IWM practices. The results were in conformation with Shanti Nirmala[2].

12) Input availability Vs Extent of adoption

The variable input availability was found to have positively and non significant association with extent of adoption of farmers, the reason might be that even if inputs are available, farmers may not know when to use, how much to use and other details.

13) Labour availability Vs Extent of adoption

The variable labour availability had positive and non significant association with extent of adoption by farmers. Unavailability of labour and inability to afford mechanical and chemical weed control by the respondents might have lead to low levels of extent of adoption of IWM practices. The results were in confirmation with findings reported by Sampath[5].

Table 3: Relationship between profile characteristics and extent of adoption of IWM practices. **(n=120)**

S. No.	Characteristics	Correlation coefficient (r)
		Overall
1.	Age	0.175NS
2.	Education	0.210*
3.	Farm size	0.225**
4.	Farming experience	0.186*
5.	Training in IWM	0.425**
6.	Extension contact	0.338**
7.	Mass media exposure	0.209*
8.	Information seeking behaviour	0.217*
9.	Farm mechanization status	0.296**
10.	Risk orientation	0.223**
11	Innovativeness	0.294**
12	Input availability	0.058NS
13	Labour availability	0.042NS

* Significant at 0.05 level of probability

** Significant at 0.01 level of probability NS -Non Significant

CONCLUSION

Above results concluded that majority of the farmers had medium level of adoption about Integrated Weed Management (IWM) Practices in Major Crops. The reason might be due to fact that their medium to low levels of knowledge, medium education, medium extension contacts, medium farm mechanization status, medium input availability and medium labour availability. So Department of Agriculture and private agencies providing training facilities to farmers regarding IWM practices for effective weed management.

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