Knowledge of farmers about integrated weed management (IWM) practices in major crops

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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 twelve villages of four Mandals of the district. The knowledge of farmers was studied on various integrated weed management (IWM) practices of major crops as recommended by district agricultural officers, Acharya NG Ranga Agricultural University and Prof Jayashankar Telangana State Agriculture University which were suitable to the study area and were prepared after consultation with subject matter specialists. It was found that majority of the respondents had medium knowledge on rice (44.45%), cotton (53.65%), groundnut (50.00%) and chilli (47.50%) and had medium overall knowledge (65.00%). It was concluded that there was a positive and significant relationship between level of knowledge of respondents on overall IWM practices and variables viz education, training, extension contact, mass media exposure, information seeking behaviour, farm mechanization status and innovativeness.

Keywords: Knowledge; farmers; weed management; IWM practices; variables

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 their 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, insects 30 per cent, diseases 20 per cent and other pests 5 per cent (Yaduraju 2005). The different traditional methods like manual weeding, intercultural operations and herbicide spraying are practiced by the farmers separately. Integrated weed management (IWM) is the control of weeds through a long-term management approach using several weed management techniques such as physical, chemical, biological and cultural control methods. Therefore a system approach to weed management known as integrated weed management system (IWMS) has been gaining importance.

Nirmala (2012) reported that the status of the diffusion of system of rice intensification (SRI) was medium to low in spite of multifarious efforts of the government. Though some farmers were able to continue this method and reap benefits, some others had adopted SRI for one or two seasons and had discontinued it. Others appreciated the method but did not adopt it. Lack of perception accuracy and operational difficulties might have discouraged the farmers to continue SRI.

METHODOLOGY

Ex post facto research design was used in the present investigation. The state of Telangana was chosen as the locale of the study and Mahaboobnagar district and 4 Mandals in the district were randomly

selected. 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 thus a total of 12 villages and 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 were collected using interview schedule developed for the study. Based on obtained score the respondents were grouped into low, medium and high knowledge categories according to equal interval method. The collected data were analysed using appropriate statistical tools like frequency and percentage, class interval, arithmetic mean, standard deviation and coefficient of correlation.

RESULTS and DISCUSSION

From Table 1 it can be observed that the majority of the respondents (44.45%) had medium followed by high (33.33%) and low (22.22%) level of knowledge in case of rice, majority of the respondents (53.65%) had medium followed by high (29.28%) and low (17.07%) level of knowledge in case of cotton, majority of the respondents (50.00%) had medium followed by low (26.31%) and high (23.69%) level of knowledge in case of groundnut and most of the respondents (47.50%) had medium followed by low (27.50%) and high (25.00%) level of knowledge in case of chilli crop production. The results presented above indicate that majority of the farmers irrespective of crop had medium level of knowledge followed by high and low levels in rice and cotton and low and high in case of groundnut and chilli crops.

The probable reason for this might be that mainly cotton and rice were being cultivated in the region and required weed management at different stages of crop. Hence to bring their knowledge levels to higher categories capacity building through training programmes and demonstrations was required. Study was conducted in Cuddalore district of Tamil Nadu on rice by Balakrishnan and Vasanthakumar (2010). The study revealed that more than half of the proportion (54.00 per cent) of the respondents had medium level of knowledge followed by 31.00 per cent of the respondents who had high level of knowledge. Only 15.00 per cent of the respondents had low knowledge level.

Relationship between selected profile characteristics and level of knowledge of the respondents on IWM practices in crop production

In order to study the relationship between the level of knowledge and the profile characteristics of farmers, the correlation coefficient (r) values were computed.

Rice: It is revealed from Table 2 that there was a positive and significant relationship between level of knowledge of respondents on IWM practices of rice and variables viz age, education, farming experience, extension contact, training in IWM and farm mechanization status.

The increase in levels of education, farming experience, accessible farm mechanization and trainings, more extension contacts and innovativeness would result in increased levels of knowledge. As age increases farming experience would also be more leading to positive association of age with knowledge. The IWM practices did not involve much risk leading to non- significant negative association with knowledge.

Cotton: There was a positive and significant relationship between level of knowledge of respondents on IWM practices of cotton and variables viz age, education, farming experience, training in IWM, extension contact, mass media exposure, innovativeness and input availability. More education, farming experience, training in IWM, extension contact, mass media exposure, innovativeness and input availability would enable farmers to acquire more knowledge on IWM practices hence a positive significant association was found.

Groundnut: There was a positive and significant relationship between level of knowledge of respondents on IWM practices and variables viz age, education, training, extension contact, information seeking behaviour and innovativeness. More the education, age, trainings received, extension contacts and innovativeness the more opportunity a farmer can have to acquire more knowledge. As majority of groundnut farmers resorted to hand weeding mostly even by engaging family labour in times of labour scarcity also non-significant negative association was found in the study.

Chilli: There was a positive and significant relationship between level of knowledge of respondents on IWM practices and variables viz age, education, farm size,

Table 1. Distribution of the respondents based on their level of knowledge on IWM practices in crop production

Level of knowledge	Class interval	Frequency	Percentage
Rice crop production (n= 36)			
Low	15-17	8	22.22
Medium	17-19	16	44.45
High	19-21	12	33.33
Cotton crop production (n= 41)			
Low	11-14	7	17.07
Medium	14-17	22	53.65
High	17-20	12	29.28
Groundnut crop production (n= 38)			
Low	14-16	10	26.31
Medium	16-18	19	50.00
High	18-20	9	23.69
Chilli crop production (n=40)			
Low	16-18	11	27.50
Medium	18-20	19	47.50
High	20-22	10	25.00

Table 2. Relationship between profile characteristics and level of knowledge of respondents on IWM practices

Characteristics	Correlation coefficient (r)			
	Rice	Cotton	Groundnut	Chilli
Age	0.425**	0.727**	0.585**	0.422**
Education	0.398*	0.462**	0.641**	0.440**
Farm size	0.210NS	0.072NS	0.038NS	0.474**
Farming experience	0.695**	0.761**	0.067NS	0.147NS
Training in IWM	0.467**	0.663**	0.456**	0.091NS
Extension contact	0.506**	0.746**	0.383*	0.333*
Mass media exposure	0.066NS	0.332*	0.114NS	-0.020NS
Information seeking behaviour	0.099NS	0.299NS	0.414**	0.319*
Farm mechanization status	0.412*	0.297NS	0.264NS	0.246NS
Risk orientation	-0.135NS	0.120NS	0.083NS	0.141NS
Innovativeness	0.494**	0.770**	0.404**	0.384*
Input availability	0.299NS	0.694**	0.202NS	0.133NS
Labour availability	0.063NS	-0.210NS	-0.148NS	0.091NS

*Significant at 0.05 level of probability, **Significant at 0.01 level of probability, NS= Non-significant

extension contact, information seeking behaviour and innovativeness. More the extension contacts, information sought, education and innovativeness more the farmers try to acquire knowledge. Especially chilli being the commercial crop farmers contact extension officers and attend trainings to gain knowledge.

Joshi (2004) also reported positive and significant correlation between education of the farmers and their adoption level.

CONCLUSION

The results indicated that majority of the farmers irrespective of crop had medium level of knowledge followed by high and low levels in rice and cotton crop and low and high in case of groundnut and chilli crop. The probable reason for this might be that mainly cotton and rice were being cultivated and required weed management at different stages of crop production. Hence to bring their knowledge levels to higher categories capacity

building through training programmes and demonstrations was required.

REFERENCES

Balakrishnan T and Vasanthakumar J 2010. Knowledge level of system of rice intensification (SRI) technology among farmers in Cuddalore district of Tamil Nadu. International Journal of Current Research **9:** 65-68.

Joshi PL 2004. Extent of knowledge and adoption of farmers about modern practice of cotton in Bhal area of Gujarat. MSc (Agric) thesis, Gujarat Agricultural University, Anand, Gujarat, India.

Nirmala 2012. A study on diffusion status and adoption of system of rice intensification (SRI) in Mahaboobnagar in Andhra Pradesh. MSc (Agric) thesis, Acharya NG Ranga Agricultural University, Hyderabad, Andhra Pradesh, India.

Yaduraju NT 2005. Consultancy, training and constractual reseaech services. NRCWS Bulletin 31, National Research Centre for Weed Science, Jabalpur, Madhya Pradesh, pp 30-45.