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Extent of adoption of integrated weed management practices in major crops by the farmers and relationship of adoption level with their profile characteristics

B RAJASHEKAR, V SUDHARANI, G SHIVACHARAN and SK NEEMA PARVEEN

Department of Agricultural Extension
Prof Jayashankar Telangana State Agriculture University, College of Agriculture Rajendranagar, Hyderabad 500030 Telangana, India
Email for correspondence: bandarajashekar333@gmail.com

ABSTRACT

The present investigation was carried out in Mahaboobnagar district of Telangana. An ex post facto research design was followed selecting 120 respondents at random from four Mandals of twelve villages of the district. A list of various integrated weed management (IWM) practices of major crops as recommended by Directorate of Agriculture, Acharya NG Ranga Agricultural University and Prof Jayashankar Telangana State Agriculture University which were suitable to the study area was prepared after consultation with subject matter specialists. It was found that majority of the respondents had medium extent of adoption wrt rice (55.55%), cotton (48.74%), groundnut (50.00%) and chilli (55.00%). There was a positive and significant relationship between level of adoption of respondents on overall IWM practices with variables viz education, farm size, farming experience, training, extension contact, mass media exposure, information seeking behaviour, farm mechanization status, risk orientation and innovativeness.

Keywords: Extent of adoption; IWM practices; farmers; profile characteristics

INTRODUCTION

Weeds are unwanted and undesirable plants which interfere with the utilization of land and water resources. 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) is gaining importance.

Efficient transfer of innovations and their practical application to field situations is the key to economic development of India. Still there exists a wide gap between the technology available at the research

level and its adoption at farmers' level (Balakrishnan and Vasanthkumar 2010).

METHODOLOGY

An 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 of Telangana and 4 Mandals in the district were selected randomly. From all the selected Mandals a list of villages containing farmers practicing IWM 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 measuring respondents' knowledge on IWM practices a knowledge test was developed. Data were collected using interview schedule developed and 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 were analysed using appropriate statistical tools like frequency and percentage, class interval, arithmetic mean ($\overline{X}$), standard deviation and coefficient of correlation.

RESULTS and DISCUSSION

The data given in Table 1 show that most of the respondents irrespective of the crop had medium level of extent of adoption. Majority of the farmers viz 55.55, 48.74, 50.00 and 55.00 per cent growing rice, cotton, groundnut and chilli respectively had medium level of adoption followed by high level practiced by 27.80, 19.56, 26.32 and 25.00 per cent respectively.

Relationship between profile characteristics of respondents and adoption level of IWM practices (Table 2)

While studying the relationship between profile characteristics and adoption level of IWM practices in rice crop, it was found that farming experience, extension contact and input availability influenced the adoption level at 5.00 per cent and training in IWM and innovativeness at 1.00 per cent level of significance. However age, education, farm size, mass media exposure, information seeking behavior, farm mechanization status, risk orientation and labour availability had no impact. In case of cotton all the dependent factors influenced the adoption level at 1.00 per cent level of significance except for farm size, risk orientation and labour availability. In case of groundnut age, farm size and extension contact at 5.00 per cent and education, training in IWM, information seeking behavior and innovativeness at 1.00 per cent level of significance influenced the adoption level of respondents wrt to IWM practices, whereas farming experience, mass media exposure, farm mechanization

Table 1. Distribution of the respondents based on their extent of adoption of IWM practices

Extent of adoption	Class interval	Frequency	Percentage
Rice (n= 36)			
Low	12-14	6	16.65
Medium	14-16	20	55.55
High	16-18	10	27.80
Cotton (n= 41)			
Low	7-10	13	31.70
Medium	10-13	20	48.74
High	13-16	8	19.56
Groundnut (n= 38)			
Low	8-10	9	23.68
Medium	10-12	19	50.00
High	12-14	10	26.32
Chilli (n= 40)			
Low	11-13	8	20.00
Medium	13-15	22	55.00
High	15-17	10	25.00

Table 2. Relationship between profile characteristics and extent of adoption of IWM practices (n= 120)

Characteristics	Correlation coefficient (r)			
	Rice	Cotton	Groundnut	Chilli
Age	0.127^{NS}	0.713**	0.391*	0.443**
Education	0.278^{NS}	0.458**	0.610**	0.439**
Farm size	0.083^{NS}	0.258^{NS}	0.350*	0.431**
Farming experience	0.336*	0.616**	-0.158^{NS}	0.290^{NS}
Training in IWM	0.502**	0.533**	0.455**	0.164^{NS}
Extension contact	0.371*	0.637**	0.453*	0.316*
Mass media exposure	0.143^{NS}	0.455**	0.115^{NS}	0.401**
Information seeking behavior	-0.129^{NS}	0.608**	0.522**	0.477**
Farm mechanization status	0.321^{NS}	0.549**	0.158^{NS}	-0.127^{NS}
Risk orientation	0.206^{NS}	0272^{NS}	0.252^{NS}	0.393*
Innovativeness	0.535**	0.710**	0.687**	0.684**
Input availability	0.359*	0.682**	0.029^{NS}	0.592**
Labour availability	0.098^{NS}	-0.134^{NS}	0.088^{NS}	0.221**

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

status, risk orientation, input availability and labour availability had no effect. Similarly in case of chilli extension contact and risk orientation at 5.00 per cent and age, education, farm size, mass media exposure, information seeking behavior, innovativeness and input availability at 1.00 per cent level influenced the adoption level. On the other hand farming experience, training in IWM, farm mechanization status and labour availability had no impact.

Balakrishnan and Vasanthkumar (2010) while studying the adoption of SRI technologies in Cuddalore district of Tamil Nadu reported that that half the proportion (50.67%) of the respondents had medium level of adoption followed by 38.00 per cent who had low level of adoption. Desale et al (2011) reported that three-fourth of the hybrid castor growers In Kheda district of Gujarat had medium to high level of adoption of recommended hybrid castor production technology. Similar observations were also made by Joshi (2004), Nirmala (2012) and Veerendranath (2000).

CONCLUSION

Most of the respondents irrespective of the crop had medium level of extent of adoption. It was also found that the adoption level of the farmers changed with the crop they had been growing. However there were some similarities too such as labour availability was common factor which had no effect on the adoption level in all the four crops studied. At the same time extension contact was a factor which had significant impact in all the four crops.

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