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A Study on Constraints and Suggestions of Respondents on Recommended Integrated Weed Management (IWM) Practices in Major Crops and Suitable Strategy for Effective Adoption IWM Practices

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ABSTRACT

This paper makes an attempt to find out the constraints and Strategy for the potential for the adoption of IWM practices in crop production. The major constraints elicited by the respondents were Non availability of labour, High cost of labour 'Lack of credit facilities for purchase of weeding implements, high cost of herbicides, non availability of weeding machinery and lack of technical information and skill about IWM practices.

Key words: *Problems, suggestions, strategy.*

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, interculture 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.

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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 knowledge 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.

- To study the constraints faced by respondents and suggestions for improving the adoption of recommended IWM practices in major crops and to develop suitable strategy for effective adoption based on the constraints and suggestions elicited by the respondents.

RESULTS AND DISCUSSION

Constraints expressed by the respondents in adoption IWM practices in major crops.

Table 1: Constraints elicited by the respondents in adoption IWM practices in Rice crop

	CONSTRAINTS	Frequency	Percent	(36) Rank
I.	**Constraints related to rice crop.**			
1	Non availability of labour& high cost of labour	28	77.77	**I**
2	Non availability of mechanical implement like conoweeder and lack of operating knowledge.	25	69.44	**III**
3	Lack of credit facilities for purchase of weeding implements	26	72.22	**II**
4	Difficulty in using sprayers	22	61.11	**V**
5	More drudgery in manual weeding by hand	23	63.88	**IV**

It could be observed from the above Table 1 that the constraints identified by the respondents for adoption of IWM practices in rice crop were: Non availability of labour and high cost of labour 77.77 per cent (I), 'Lack of credit facilities for purchase of weeding implements 72.22 per cent (II), 'Non availability of mechanical implement like cono weeder and lack of operating knowledge 69.44 per cent (III), 'More drudgery in manual weeding by hand 63.88 per cent (IV), 'Difficulty in using sprayers 61.11 per cent (V)'

These results were in confirmation with the findings reported by Amrik[1].

Table 2: Constraints elicited by the respondents in adoption IWM practices in Cotton crop

II.	Constraints related to cotton crop	Frequency	Percent	Rank (41)
1	Non availability of labour and high cost	35	85.36	**I**
2	High cost of herbicides	29	70.73	**II**
3	Lack of subsidy for power weeder by Department of Agriculture.	26	63.41	**III**
4	Lack of operating knowledge regarding power weeder	20	48.78	**IV**

It could be observed from the above Table 2 that the constraints identified by the respondents for adoption of IWM practices in cotton crop: Non availability of labour and high cost 85.36 per cent (I), 'High cost of herbicides 70.73 per cent (II), 'Lack of subsidy for power weeder by Department of Agriculture 63.41 per cent (III), 'Lack of operating knowledge regarding power weeder 48.78 per cent (IV)'

These results were in confirmation with the findings reported by Trivedi *et al*.[3].

Table 3: Constraints elicited by the respondents in adoption IWM practices in groundnut crop

III.	Constraints related to groundnut crop	Frequency	Percent	Rank (38)
1	Non availability of labours and high cost	28	73.68	**I**
2	Non availability of weeding machinery in groundnut crop	26	68.42	**II**
3	Non availability of herbicides in time and high cost	25	65.78	**III**

It could be observed from the above Table 3 that the constraints identified by the respondents for adoption of IWM practices in groundnut crop related were: 'Non availability of labour and high cost 73.68 per cent (I), 'Non availability of weeding machinery in groundnut crop 68.42 per cent (II), 'Non availability of herbicides in time and high cost 65.78 per cent (III),.

These results were in confirmation with the findings reported by Naik[2].

Table 4: Constraints elicited by the respondents in adoption IWM practices in Chilli crop

IV	Constraints related to chilli crop	Frequency	Percent	Rank (40)
1	Non availability of labours and high cost	28	70.00	**I**
2	Lack of knowledge about recommended herbicides	22	55.00	**IV**
3	Lack of credit facilities for purchase weeding machinery	25	62.50	**III**
4	Lack of technical information and skill about IWM practices	26	65.00	**II**

It could be observed from the above Table 4 that the constraints identified by the respondents for adoption of IWM practices in chilli related were: 'Non availability of labour and high cost 70.00 per cent (I), 'Lack of technical information and skill about IWM practices 65.00 per cent (II), 'Lack of credit facilities for purchase weeding machinery 62.50 per cent (III), 'Lack of knowledge about recommended herbicides 55.00 per cent (IV).

Suggestions elicited by the respondents for effective adoption of IWM practices. (N=120)

Table 5: Suggestions elicited by the respondents for effective adoption of IWM practices in Rice crop

S. No	SUGGESTIONS	Frequency	Percentage	Rank
	Suggestions related to rice crop			
1	Providing weeding implements and Machinery in time	22	61.11	**V**
2	Conducting trainings with method demonstrations to create awareness on cono weeder and provide operating skill of cono weeder	26	72.22	**II**
3	Banks should provide credit facilities on different weeders	28	77.77	**I**
4	Providing farm literature regarding herbicides application and recommended dosages	25	69.44	**III**
5	Government and manufacturing companies should take initiation for developing less drudgery machineries	20	55.55	**VI**

From the Table 5 suggestions related to rice crop: 'Banks should provide credit facilities on different weeders 77.77 per cent (I), 'Conducting trainings with method demonstrations to create awareness on cono weeder and provide operating skill of cono weeder 72.22 per cent (II), 'Providing farm literature regarding herbicides application and recommended dosages 69.44 per cent (III), 'Providing herbicides in time for effective weeding 66.66 per cent (IV), 'Providing weeding implements and machinery in time 61.11 per cent (V).

Table 6: Suggestions elicited by the respondents for effective adoption of IWM practices in Cotton crop

Suggestions related to cotton crop		Frequency	Percentage	Rank
1	Providing weeding implements and Machinery in time.	25	60.97	**IV**
2	Providing information regarding the herbicides application and recommended dosage	20	48.78	**V**
3	Providing facility of custom hiring centres within reasonable distance	28	68.29	**I**
4	Government should provide subsidy on power weeders	26	63.41	**III**
5	Conduct a demonstrations improve the skill of the farmer regarding operation of power weeder	27	65.85	**II**

From the Table 6 suggestions related to cotton crop: 'Providing facility of custom hiring centres within reasonable distance 68.29 per cent (I), 'Conduct a demonstrations improve the skill of the farmer regarding operation of power weeder 65.85 per cent (II), 'Government should provide subsidy on power weeders 63.41 per cent (III), 'Providing weeding implements and machinery in time 60.97 per cent (IV), 'Enhance the knowledge of the respondents on accurate usage of post emergence herbicides 53.65 per cent (V).

Table 7: Suggestions elicited by the respondents for effective adoption of IWM practices in Groundnut crop

Suggestions related to groundnut crop		Frequency	Percent	Rank
1	Providing weeding implements and Machinery in time.	23	60.52	**II**
2	Government and manufacturing companies should develop a weeder which are suitable to the groundnut crop	21	55.26	**III**
3	Enhance the knowledge of the respondents on accurate usage of post emergence herbicides	20	52.63	**IV**

From the Table 7 suggestions related to groundnut crop: 'Providing herbicides in time for effective weeding 71.05 per cent (I), 'Providing weeding implements and machinery in time 60.52 per cent (II), 'Government and manufacturing companies should develop a weeder which are suitable to the groundnut crop 55.26 per cent (III).

Table 8: Suggestions elicited by the respondents for effective adoption of IWM practices in Chilli crop

S. No	Suggestions related to chilli	Frequency	Percent	Rank
1	Providing weeding implements and Machinery in time.	24	60.00	**III**
2	Providing farm literature about herbicides	26	65.00	**II**
3	Bank should provide credit facility on weeding machinery	28	70.00	**I**
4	Enhancing awareness on different IWM practices by providing literature on weed management	22	55.00	**IV**

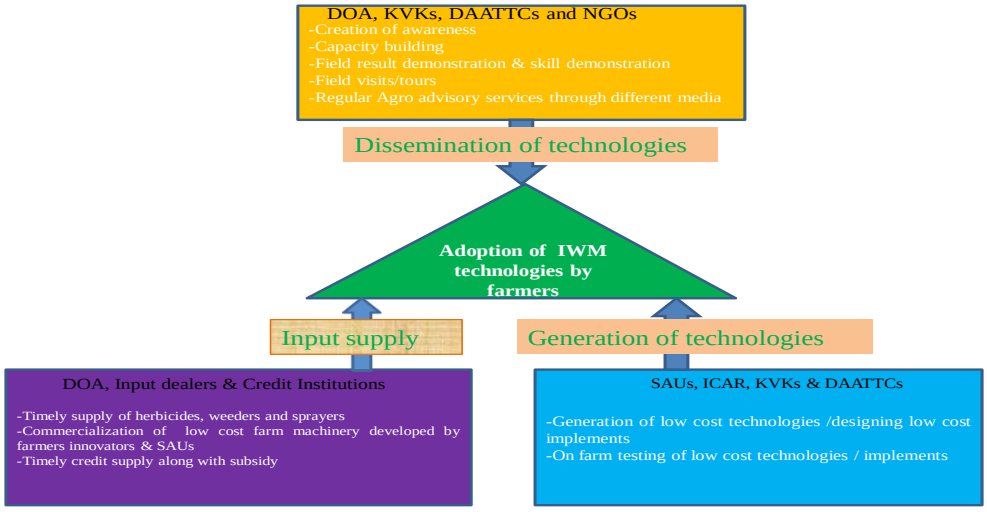
From the Table 8 suggestions related to chilli crop: 'Bank should provide credit facility on weeding machinery 70.00 per cent (I), 'Providing farm literature about herbicides 65.00 per cent (II), 'Providing weeding implements and machinery in time 60.00 per cent (III), 'Enhancing awareness on different IWM practices by providing literature on weed management 55.00 per cent (IV).

Strategy for further promotion of IWM practices among the farmers.

- Keeping in view the findings of the study a strategy for effective adoption, dissemination and diffusion of IWM practices is suggested.
- Majority of respondents found to have medium to low levels of knowledge and adoption of IWM practices. The medium level of their majority of profile characters and problems elicited have lead to these findings. There is lot of scope to improve the knowledge and adoption levels of farmers through capacity building activities enabling them to access agriculture information, contact extension officers and participate in extension activities conducted by Department of Agriculture, KVKs, DAATTCs, Input dealers, NGOs and others.
- Majority of respondents had low level of training attended, specifically as regard to IWM practices. Hence regular training programmes on crop specific IWM practices have to be conducted.
- For effective adoption, dissemination and diffusion of IWM practices, the extension strategies by different agro advisory service providers must include awareness campaigns, field/result demonstrations, method demonstrations, training programme, field visits/tours and frequent/ regular advisory services, using different media.
- For final adoption of IWM practices, along with advisory services timely supply of inputs especially herbicides, weeders, sprayers and credit must be ensured to the farmers. Department of Agriculture, input dealers/ private input companies and credit institutions must gear up their efforts and ensure timely and adequate supply of theses inputs along with subsidy.
- In a public private partnership mode Government departments, SAUs and input industry may focus on commercialisation and mass production of weeders, sprayers and hand implements to supply the same to the farmers at low and affordable costs.
- Research programmes of SAUs, ICAR, KVKs and DAATTCs have to be focused on less labour intensive, low cost IWM technology generation and their assessment in farmers fields. Similarly research on weed specific bio agents, less drudgery involving farm machinery for weed management have to be initiated in weed management and farm mechanization research.
- Custom hiring centres should be established within accessible distance to farmers and they should be strengthened with all suitable weeding farm machinery required for the nearby villages.
- This is evident from the findings that majority of the respondents had high school education so that providing them farm literature on weed management

would be useful for their knowledge and adoption of IWM practices.

- Encouraging farmers to innovate low cost and efficient farm implements suitable for weeding and these innovators should be assisted by NGOs or officials of Department of Agriculture in their development, popularization through newspapers, pamphlets, TV shows and exhibitions for the benefit of other farmers.



Strategies for effective adoption of IWM technologies

CONCLUSION

Knowing the problems and suggestions by the farmers we could able to give strategy for improving adoption of IWM practices. Encouraging farmers to innovate low cost and efficient farm implements suitable for weeding and these innovators should be assisted by NGOs or officials of Department of Agriculture in their development, popularization through newspapers, pamphlets, TV shows and exhibitions for the benefit of other farmers

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