A STUDY ON CONSTRAINT ANALYSIS REGARDING THE ADOPTION OF IPM TECHNOLOGIES IN PLANT HEALTH MANAGEMENT

DR. SARITHA ROUTU

Abstract: Integrated pest management is one of the sustainable agricultural strategies. IPM encompasses the total package methods to control or manage pests in crops. It provides a systems approach to pest management and decrease pesticide using and it uses sustainable method. Farmer's participation is the key of IPM success and can help obtaining sustainable agriculture. It needs to detect the barriers of adopting integrated pest management. The study was undertaken to identify the constraints faced by the farmers in adoption of IPM practices and to suggest appropriate corrective measures to make farming a viable and profitable enterprise.

The empirical study revealed that among the various types of constraints (as perceived by the respondents) regarding the adoption of IPM technologies, technological constraints ranked first closely followed by Communication constraints. lack of knowledge of the respondents about the Economic Threshold Limit (ETL) concept ranked first closely followed by the lack of knowledge of the respondents regarding the bio-pesticides (under the category of technological constraints) in second position, lack of knowledge of the respondents about the Integrated Pest Management (IPM) techniques ranked third position. In communication constraints lack of training of the respondents on the proper use of pesticides stood in the first position followed by lack of persuasion by extension agents.

It is suggested that agricultural extension agent should educate farmers about benefits of IPM technologies which help farmers to use IPM methods more and improved their assurance about IPM methods to control pest, environmental and economical effects.

Key Words: Integrated pest management, Constraints, Technology, Communication

Introduction: In India rice occupies 40.50 million hectares comprising of 32.00 per cent of the total area under food grain crop and currently rice production has reached to 70.67 million tones contributing about 42.00 per cent towards total food grains production in the country (Anon.,1991). The production in rice mainly depends upon the management of pest and diseases which takes a major share in the total production cost. The increased quantity of the usage of plant protection chemicals resulted in imbalance in the ecosystem. Integrated pest management is the solution to overcome pest management ecofriendly.IPM developed by the scientists, have not been integrated into the farming practices of the farmers in order to convert them into production accomplishments. Therefore, a study was undertaken to identify the constraints faced by the IPM and Non-IPM farmers in adopting IPM practices and to suggest appropriate corrective measures to make farming as profitable enterprise and viable enterprise.

Methodology: The study was taken up in Khammam district of Andhra Pradesh State with 60 farmers selected from rice growing three mandals. Farmers were selected based on random sampling procedure. Based on the field experience of the researcher coupled with probing questions with farmers, experienced scientists and extension functionaries, constraints were enumerated and classified into socio-economic constraints , information and communication constraints and technological constraints. The respondents were asked to indicate the constraints experienced by them in the adoption of IPM technologies. The frequency of farmers indicating each of the constraints was noted and the percentage was ranked to facilitate easy inference.

Results and Discussion: The constraints experienced by farmers are presented under four classified constraints viz., Socio-economic constraints, communication and information constraints, technological constraints and personal constraints and the results are presented in the table. It may be seen from the table, that altogether nine socio-economic constraints were faced by the paddy farmers in the adoption of IPM technology. A vivid inference that could further be divulged from the Table is that lack of credit facilities was the most serious constraint mentioned by more than half of the farmers (48) Again, the constraint, high cost of inputs was ranked as the second most serious constraint among farmers (42) . The availability of pest resistant varieties, credit subsidies, chemicals and sprays is very vital. Non-availability of sprayers and dusters in adequate number particularly at the time of pest outbreak are bottlenecks for taking up timely control measures. Lack of mutual co-operation among the farmers was assigned third rank by about 40 per cent of farmers, The agricultural credit societies while selling fertilizer on loan insisted on

farmers' buying other inputs such as herbicides, pesticides etc., not required by them. Besides, the farmers were not supplied with the required quantity and brand in small package within their financial reach. Lack of supply of the pesticides in the market at the right time was ranked as the fourth important constraint by 35 of the respondents.

It could be seen from the same Table that Lack of proper plant protection implements, Average distance between the fragments of the cultivated land , Lack of market facilities, lack of education and lack of cosmopolitanisms were found to be the least constraints mentioned by the respondents

While coming to the personal constraints faced by various categories of farmers in adoption of IPM practices. Among the personal constraints, lack of awareness regarding IPM practices emerged as the most serious problem among farmers. In general, farmers were not able to identify the various pests and diseases and more often the farmers had to depend on extension agencies.

Hence, the farmers would have considered this as a major problem. Lack of Confidence on IPM methods was considered as the second most serious constraint among farmers. Poor educational standard among farmers was spelt as the third serious constraint by ..... per cent of farmers, for they would not be in a position to understand the IPM technology which is widely considered as a complex technology involving various methods including arriving at ETL. The other reasons mentioned are lack of knowledge to identify beneficial insects, lack of knowledge to identify pests and diseases,Poor supervision and Satisfaction with the prophylactic control.

Out of the eight technological constraints, Lack of knowledge of the respondents about the Economic Threshold Limit (ETL) concept was seen as the most serious constraint among farmers. Further, it could be seen from the same table that Lack of knowledge regarding the biopesticides( ) followed by Lack of knowledge of the respondents about the Integrated Pest Management (IPM) techniques ( ) was seen as the second and third most serious constraints by the farmers. the method of scouting and the economic threshold level for various pests. could be understood and remembered only by educated farmers. In addition, the other reasons are Lack of knowledge of the farmers regarding the process of diagnosis of the attacking pests, judicious use of pesticides, ideal time and crop stage when the pesticide should be applied etc.

The perusal of the data presented in the Table reveals that Lack of information about recent Pest-management strategies (%), Lack of involvement of IPM experts (%), lack of extension services (72%), lack of training facilities (67%), were also reported by respondents in adoption of IPM practices. The same findings are also reported by the *Kumar (2004).*

Table. Ranking of various constraints (as perceived by the respondents) regarding the proper Use of pesticides

S. No	Category of constraints	Frequency	Percentage	Rank position
	A. Socio-economic Constraints			
	Lack of cosmopoliteness of the farmers	9		IX
	Lack of credit facilities	56		I
	Lack of education	12		VIII
	High cost of inputs	50		II
	Lack of market facilities	20		VII
	Lack of proper plant protection implements	33		V
	Average distance between the fragments of the cultivated land	31		VI
	Lack of mutual co-operation among the farmers	44		III
	Lack of supply of the pesticides in the market at the right time	40		IV
	B. Information and Communication Constraints			
	Lack of proper training facilities	30		IV
	Lack of extension services	35		III
	Lack of involvement of IPM experts	42		II
	Lack of information about recent Pest-management strategies	50		I
	C. Technological constraints			

	Lack of knowledge of the respondents about the Economic Threshold Limit (ETL) concept	55		I
	Lack of knowledge regarding the biopesticides	50		II
	Lack of knowledge of the respondents about the Integrated Pest Management (IPM) techniques	41		III
	Lack of proper information on the judicious use of pesticides			
	Lack of knowledge of the farmers regarding the process of diagnosis of the attacking pests	30		V
	Lack of knowledge of the respondents regarding the proper Handling and judicious use and application procedure of the pesticides	37		IV
	Lack of knowledge regarding the proper pesticide storage procedure and proper way of disposing off of the date expired, unused pesticide containers	20		VII
	Lack of Knowledge regarding the ideal time and crop stage when the pesticide should be applied	14 25		VIII VI
D	**Personal Constraints**			
	Satisfaction with the prophylactic control	25		VII
	Poor educational standard	50		III
	Lack of awareness	60		I
	Poor supervision and management	28		VI
	Lack of knowledge to identify beneficial insects	40		IV
	Lack of knowledge to identify pests and diseases	32		V
	Lack of Confidence on IPM methods	55		II

Conclusion: A key concept in IPM programs is the application of decision making processes to determine when a chemical pesticide or other actions are needed or not. Such decisions depend on evaluation of the pest problem often in a quantitative manner. In the evaluation of agricultural crop pests, the point at which the economic benefit of pesticide use exceeds the cost of treatment is commonly referred to as the economic threshold level . According to these results, extension agent couldn't inform appropriate information about IPM benefits and advantages. It is recommended that agricultural extension agent educate farmers about benefits of IPM technologies. It revealed the importance of using suitable information canals according to culture, gender, age, literacy and feasibility. Extension agent should use suitable extension educational methods to notify farmers about integrated pest management techniques and skills. That can help farmers to use IPM methods more and improved their assurance about IPM methods to control pest, environmental and economical effects. It shows the importance of using appropriate approaches to inform IPM benefits to farmers.

References:

1. Santha Govind And Perumal .G.2012. Constraints Encountered in the Adoption of IPM Technologies. *Karnataka J.Agric.Sci.,17(4):(741-746) 2004* pp:741-746
2. Gulshan Kumari.2012 Constraints in Adoption of Integrated Pest Management (IPM)
3. Practices by Rice Growing Farmers of Jammu Division.*Indian Research Journal of Extension Education*, Special Issue (Volume II),PP:15-17
4. Kumar, A. (2004). Economics of Integrated Pest Management in Rice in Bihar. *Proceedings on Integrated Pest Management on Indian Agriculture*. Vol 11, pp 185-194, National Centre for Agricultural Economics and Policy Research, New Delhi.
5. Rakesh Parmar, R. K. Gujetia, Discretization Process in Finding Numerical; Life Sciences International Research Journal , ISSN 2347-8691, Volume 1 Issue 1 (2014): Pg 307-311
6. Sahar Habibzadeh Shojaei, Seyed Jamal F. Hosseini, and Mehdi Mirdamadi .2013 Investigating Barriers to Adoption of Integrated pest management Technologies in Iran. *Annals of Biological Research* , 4 (1):39-42.

Dr. Saritha Routu,Associate Professor, Agricultural Polytechnic
Regional Agricultural Research Station, ANGRAU, Anakapalle-531001