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Constraints faced by the farmers in adoption of Integrated crop Management in Chilli crop in Telangana

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ABSTRACT

The paper studies on "Constraints faced by the farmers in adoption of Integrated crop Management in Chilli crop in Telangana". The study was conducted in two districts of Telangana which are major chilli growing area are Warangal and Kammam. In this study was comparition between IPM and Non-IPM farmers. For the study, 30 ICM, 30 IPM and 30 Non-IPM farmers were randomly selected from two districts. The first source of market price information for all the two categories of farmers were the commission agents in the market with the mean scores of 73.33, 72.83 and 74.87 respectively for ICM, IPM and Non-IPM farmers. The analysis was done through the Guarette ranking. They are getting least information from Agricultural extension officer placed VI, VII and VI ranks for ICM, IPM and Non-IPM farmers respectively. Labour scarcity for farm operations, power cut, requirement of more labour for production of quality chilli and more expenditure towards plant protection chemicals were ranked first, second, third and fourth with mean scores of 71.03, 70.17, 63.17 and 59.40 respectively by ICM farmers. IPM farmers ranked power cut, labour scarcity for farm operations, high cost of plant protection chemicals and requirement of more labour as first, second, third and fourth problems with mean scores 70.83, 70.33, 63.43 and 62.33 respectively. These results reflect the need for farm mechanization to overcome the problem of labour shortage and solar system for power generation in the farm. Non IPM farmers ranked high cost of plant protection chemicals, power cut and Pest and disease outbreak as first, second and third constraints respectively.

Key words: *IPM, Non- IPM, Constraints, Chilli crop.*

INTRODUCTION

Agriculture and allied sectors accounted for 14per cent of the GDP in 2011-2012 and provides employment to over 60 per cent of the population (Economic survey, 2012-2013)[4] .Though the share of agriculture and allied sectors in the country's GDP has declined in comparison to the previous years, nevertheless Indian agriculture has registered impressive growth over last few decades.

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India is one of the leading producers in the world for many major crops like paddy, wheat, pulses, sugarcane, spices, and plantation crops. Chilli is considered as one of the commercial spice crop, named as wonder spice. It is the most widely used universal spice. India is the world leader in chilli production followed by China and Pakistan.

India is the largest producer, consumer and exporter of chilli, which contributes to about 40 per cent of total world production. It is estimated that India produced 13,03,820 tonnes of dry chillies from an area of 7,24,065 hectares in 2010-11. Around 90 per cent of India's production is consumed within the country. India exports around 80,000 – 1,00,000 tonnes of chillies a year. India exports chillies in the form of dried chillies, chilli powder, pickled chillies and chilli oleoresin. Indian chilliis mainly exported to China (32.23%), Thailand (30.8%), Korea (19.9%) and US (9.05%), worth of 59475 USD, 56850 USD, 36725 USD and 16694 USD respectively during the period between 30/4/2014 to 31/5/2014.[5]

Over the years, growing awareness of chemical residues has led consumers to demand safe food products and to address the same, the Integrated Pest Management programmes were introduced across various agricultural crops. Of late, the demand for sustainable food products from varied stake holders of the value chain including consumers is driving the need for Food Safe Sustainable Spices. With reference to these facets, Spices Crop Development Programme of ITC Limited has transformed from a meagre Integrated Pest Management (IPM) approach to sustainable crop production practices, which is called Integrated Crop Management (ICM). As a proof-of-concept, this new approach of ICM in chillies production has been tested in about 120 acres across three different regions of Andhra Pradesh during 2012-13 crop seasons.

MATERIALS AND METHODS

A multistage purposive sampling technique was adopted to get the necessary information from sample respondents. In first stage two districts Warangal and Khammam were purposively selected for the present study. In second stage, one village from each district was selected wherein the ITC's Integrated Crop Management practices are largely adopted by chilli growing farmers was purposively selected for the present study. In final stage, 45 chilli growing farmers (15 farmers adopting ICM, 15 farmers adopting IPM but not ICM and 15farmersadopting neither IPM nor ICM) were randomly selected from each village to get required information. Total of 90 sample farmers were randomly selected for present study from two villages. The data required was obtained from both primary and secondary sources.

Constraints and opinions faced by the farmers were analyzed through Garrett ranking technique.

Garrett ranking technique

In the Garrett ranking technique, the respondents were asked to rank the factors or problems and these ranks were converted into per cent position by using the formula[7]

$$\text{Per cent position} = \frac{100 * (R_{ij} - 0.5)}{N_j}$$

Where, R_{ij} = ranking given to i^{th} attribute by the j^{th} individual.

N_j = number of attributes ranked by the j^{th} individual.

By referring to the Garrett table, the per cent positions estimated were converted into scores. Thus, for each factor the scores of the various respondents were added and the mean values were estimated. The mean values thus obtained for each of the attributes were arranged in descending order. The attributes with the highest mean value was considered as the most important one and the others followed in that order[1].

RESULTS AND DISCUSSIONS

A. Source of market price information for ICM, IPM and Non-IPM farmers

The various sources of market information for ICM, IPM and Non-IPM farmers ranked using Garrett mean scores is presented in Table 1.

Table 1: Source of market price information for ICM, IPM and Non-IPM farmers

S.No	Sources	Garrett Mean Score		
		ICM	IPM	Non-IPM
1	Radio	27.00 (VIII)	27.00 (VIII)	33.00 (VII)
2	Television	52.50 (III)	52.63 (III)	56.77 (IV)
3	Agricultural extension officer	44.93 (VI)	38.33 (VII)	41.00 (VI)
4	ITC	64.83 (II)	66.57 (II)	21.00 (VIII)
5	Friends	50.57 (IV)	52.07 (IV)	64.27 (II)
6	Neighbours	46.53 (V)	46.03 (V)	60.93 (III)
7	SMS from spice board	44.27 (VII)	45.57 (VI)	51.93 (V)
8	Commission agents in the market	73.33 (I)	72.83 (I)	74.87 (I)

Note: Figures in parentheses indicate their respective ranks

It is revealed from the data in the above table that the first source of market price information for all thethree categories of farmers was the commission agents in the market with the mean scores of 73.33, 72.83 and 74.87 respectively for ICM, IPM and Non-IPM farmers. ITC was considered as next important source of information and ranked second with mean score of 64.83 and 66.57 for ICM and IPM farmers respectively, while it stood at eighth position (rank) for Non-IPM farmers with mean score of 21. Non-IPM farmers mostly depend on friends for market information with the mean score of 64.27 that ranked second. The next place was occupied by television as a source of market information with fourth rank for all the three categories of farmers with mean scores of 50.57, 52.07 and 56.77 respectively for ICM, IPM and Non-IPM farmers. It indicates the important role being played by mass media in providing information on market prices. It was felt true by all the three categories of farmers. The important point to be noted here is that even after tie up with ITC, for both the ICM and IPM farmers, the major source of market information was commission agents. This indicates the significant role of commission agents in markets even during this post market reforms period.

B. Constraints in adoption of ICM and IPM technologies

The major problems in the adoption of ICM and IPM technologies opined by sample farmers were listed and ranked on the basis of Garrett mean scores was presented in Table 2.

Table 2: Problems in adoption of ICM and IPM technologies

S.No	Particulars	ICM		IPM	
		Garette Mean Score	Rank	Garette Mean Score	Rank
1	Point placement of fertilizers	44.97	VI	39.43	VIII
2	Chilli drying on sand	52.80	V	50.17	V
3	Failure of germination of jowar seed	39.40	X	32.30	X
4	Non availability of pheromone traps	42.77	VII	35.53	IX
5	Requirement of more labour	63.17	III	62.33	IV
6	Labour scarcity	71.03	I	70.33	II
7	High cost of plant protection chemicals	59.40	IV	63.43	III
8	Pest and disease out break	41.47	VIII	50.03	VI
9	Power cut	70.17	II	70.83	I
10	Some pickings are not purchased by ITC	40.47	IX	47.67	VII

Labour scarcity for farm operations, power cut, requirement of more labour for production of quality chilli and more expenditure towards plant protection chemicals were ranked first, second, third and fourth with mean scores of 71.03, 70.17, 63.17 and 59.40 respectively by ICM farmers[3]. Similarly, IPM farmers ranked power cut, labour scarcity for farm operations, high cost of plant protection chemicals and requirement of more labour as first, second, third and fourth problems with mean scores 70.83, 70.33, 63.43 and 62.33 respectively[2]. These results reflect the need for farm mechanization to overcome the problem of labour shortage and solar system for power generation in the farm.

C. Reasons for non adoption of ICM / IPM technology by Non-IPM farmers

The various reasons for non adoption of ICM / IPM by Non-IPM farmers were listed and ranked on the basis of Garrett mean scores and presented in Table 3.

Table 3: Reasons for non adoption of ICM / IPM technology by Non-IPM farmers

S.No	Reasons	Mean score	Rank
1	No belief on ICM / IPM practices	37.43	VII
2	Non availability of quality ICM / IPM inputs	54.70	IV
3	Difficulty in adoption of ICM / IPM practices	63.50	II
4	Lack of financial facilities	46.70	V
5	Requirement of more labour	73.63	I
6	High cost of cultivation	61.93	III
7	Scope for adoption of other alternative crops like cotton	40.60	VI

Requirement of more labour was considered as most important reason for non adoption of ICM / IPM practices with mean score of 73.63 by Non-IPM farmers in both the villages. This was followed by difficulty in adoption of ICM / IPM practices, high cost of cultivation and non availability of quality inputs for non adoption of ICM / IPM as other reasons with mean scores of 63.5., 61.93 and 54.70 respectively, same as results of Sangram[6].

D. Problems faced by Non-IPM farmers

The Non-IPM farmers were neither tied up with ITC nor adopting ICM / IPM practices in the two selected villages. The transportation and marketing problems were found to be the major problems faced by Non-IPM farmers of Gudepally village in Warangal district, while the sample farmers in the Damaracherla village in Kammam district were not having these problems because they disposed their produce in field itself. These problems listed by Non-IPM farmers were ranked based on Garrett mean score and presented in Table 4.

Table 4: Transportation and marketing problems faced by Non-IPM farmers in Gudepally village

S.No	Problems	Mean score	Rank
A	**Transportation problems**		
1	Non availability of tractor / cart	37.40	IV
2	Bad connecting roads	57.13	II
3	High hire charges	62.33	I
4	Non availability of labour for loading and unloading of produce	45.13	III
B	**Marketing problems**		
1	Lack of grading facilities	24.87	IV
2	In adequate cold storages and other facilities	57.07	II
3	Lack of market infrastructure	52.87	III
4	High commission agent charges	58.47	I

As revealed from the data in Table 4, the major problem of transportation was found to be high hire charges for tractor or a vehicle (first rank) with mean score of 62.33. This was followed by bad connecting roads (second rank) with mean score of 57.13. Similarly, the major marketing problems that were ranked as first, second and third include high commission agent charges in the market, inadequate cold storages and other facilities and lack of market infrastructure with mean scores of 58.47, 57.07, and 52.87 respectively. These problems were not reported by ICM, IPM farmers in two villages and Non-IPM farmers of Damaracherla village, because they sold their produce to ITC and to the other organizations in the field itself.

SUMMERY AND CONCLUSIONS

The important point to be noted in this analysis of study is that even after tie up with ITC, for both the ICM and IPM farmers the major source of market information was commission agents. This indicates the significant role of commission agents in markets even after emergence of many market reforms to reduce the influence of market middlemen and increase the share of producer in consumer's rupee. Labour scarcity for farm operations, power cut, requirement of more labour for production of quality chilli and more expenditure towards plant protection chemicals were major problems in the adoption of ICM and IPM technologies. These results reflect the need of farm mechanization and solar system for power generation in the farm to overcome the above problems. Requirement of more labour was considered as most important reason for non adoption of ICM / IPM practices by Non IPM farmers. The major problem of transportation was found to be high hire charges for tractor or a vehicle (first rank). This was followed by bad connecting roads (second rank). The major

marketing problems that were ranked as first, second and third include high commission agent charges in the market, inadequate cold storages and other facilities and lack of market infrastructure respectively.

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