

**RESEARCH PAPER****Attitude of the farmers towards integrated pest management technology programme on cotton**

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**Abstract :** Cotton is one of the important commercial crops and the principal raw material for Indian textile industry. Although, there has been significant growth in production, productivity and quality of cotton during the last fifty years, it is still below the world average. In spite of having 28 per cent of the world acreage under cotton, India accounts for only 14-15 per cent of the global cotton production, while our productivity per hectare is lowering around 250-260 kg lint/ha for the last few years with marginal ups and down. Cotton is a crop that provide substratum to about 1326 species of insects from sowing to maturity in different cotton growing areas around the globe. Of these, 8 per cent (162 species) are considered as pests responsible for enormous loss to cotton yield. The above numbers of pests results in failure of cotton crop and it is feared that cotton production might fall down further in the subsequent years if effective steps are not taken to mitigate pest menace in cotton. . In order to minimize the indiscriminate and judicious use of chemical pesticides, integrated pest management (IPM) has been enshrined as cardinal principle of plant protection. In these aspects, the behaviour of the farmers toward the technology is very crucial. Since, extension educational efforts aim at helping the farmers to produce desirable changes in their attitude and adoption behaviour, it is imperative for an extension worker to have knowledge of characteristics and attitude of his audience towards integrated pest management technology on cotton. It is hoped that the attitude scale developed for the study would be useful to other researchers to plan similar studies. Moreover, the results pertaining to attitude of the cotton growers may help the extension workers to plan appropriate strategy for effective transfer of IPM technology. According to the study, it was observed that majority of the cotton growers (62.00 %) belonged to the middle age group *i.e.* Between 30 to 46 years followed by young (24.00 %) age group. Most (38.00 %) of the respondents were found literate having formal education level upto higher secondary and diploma. As regarding holding, majority (60.00 %) of the respondents had medium size of land holding, 27.00 per cent had small holding, followed by 13.00 per cent had large size of land holding between 2.01 to 4.00 ha. The majority (78.00 %) of the cotton growers having medium farming experience *i.e.* 10 to 17 years. The maximum cotton growers (52.00 %) were found in medium social participation category (Score between 5 to 8) followed by 32.00 per cent in low social participation category. As far as annual income is concerned, it was found that 64.00 per cent of the respondents fell in medium annual income group (Rs.55,001 to Rs. 92,500) while, 22.00 per cent respondents had high annual income level. The majority (56.00 %) of the cotton growers had fragmented of land holding to 'medium' extent *i.e.* at 2-3 places. Regarding risk orientation, it was revealed that maximum proportion (57.00 %) of the respondents had preferred to take risk to the 'medium' extent. It was found that majority of the cotton growers (56.00 %) had developed 'favourable' attitude towards integrated pest management technology programme on cotton. While, only 15.00 per cent of them had 'less favourable' attitude towards integrated pest management technology programme on cotton. However, 29.00 per cent of the respondents had developed 'most favourable' attitude towards integrated pest management technology programme on cotton.

**Key Words :** Attitude, IPM cotton technology

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## INTRODUCTION

Cotton, the 'white gold' occupies an enviable place amongst commercial crops of our country. India is native home of cotton with a finest center of textile industry in the world. The industrial and agricultural economy of the country is greatly influenced, as the cultivation of cotton and textile industry provide livelihood to 60 million people. Production and productivity continued to increase substantially along with improvement in quality up to early nineties. However, recently cotton failures were experienced in all the three cotton zones, where India produced 270 lakh bales during 2006-07. It is feared that production might decrease down further and the country might fall in the list of cotton importers again. Looking at various factors of low productivity such as reliance on rainfall, unpredictable weather, poor input supply system, poor soil health, constraints in adoption of package of recommendations, small land holdings, least adoption of integrated pest management technologies, it seems to be difficult to sustain the cotton productivity at achieved level. The increase in productivity with so many constraints seemed to be a biggest challenge to scientists, extension workers and policy planners. To cope up with the increasing demand, India would require 40 million bales of cotton lint by 2010 against current production level of 27 million bales. The production of cotton in India has to be increased by 48 per cent to meet the increasing demand of cloth. The total area under cotton has not increased much since the last two decades. Most effective step to increase cotton production is to expand the existing 30 per cent irrigated area to at least 50 per cent through establishing irrigation projects in central zone. Alternatively, the target can be achieved through the adoption of improved crop production and protection technologies to produce the gap in estimated and realized cotton yields at farmer's fields. Among the factors responsible for low productivity, insect pest and disease damage to cotton from sowing to maturity are the most important ones. Suitable, cheap and effective pest and disease management tactics need to be looked into immediately. Pest management has always been a challenging task and played important role in sustaining economic cotton production. In order to minimize the

indiscriminate and injudicious use of chemical pesticides, integrated pest management (IPM) has been enshrined as cardinal principle of plant protection in the overall crop protection programme under the National Agriculture Policy of the Government of India. IPM is an eco-friendly approach for managing pest and disease problems encompassing available methods and techniques of pest control such as cultural, mechanical, biological and chemical in a compatible and scientific manner.

Krishi Vigyan Kendra, Nashik has adopted Khirdisathe and Aherwadi cluster for implementing the IPM technology. The Khirdisathe and Aherwadi villages of Yeola tahsil of Nashik district were selected as focal village of this cluster. Krishi Vigyan Kendra implemented front line demonstrations, training programmes, farmer's exposure visits, field days and kisan melavas on IPM technology in the village. The programmes of the Kendra are implemented in close supervision of the scientists. It's the fact that, to make the programmes successful, the participation of the farmers is very important. With this background the present investigation has been done with the following objectives :

- To study the personal and socio-economic profile of the respondents.
- To study the attitude of the cotton growers towards integrated pest management technology.

## MATERIAL AND METHODS

This study was conducted in Khirdisathe and Aherwadi villages of Yeola tahsil of Nashik district. These villages were selected purposively because IPM cotton technology programme was implemented under the close supervision of scientists of Krishi Vigyan Kendra, Nashik. Every scientific study brings its implications is the reason attributed to the purposive selection of Khirdisathe and Aherwadi villages, which may prove very useful for planners and implementers. Krishi Vigyan Kendra, Nashik has adopted the villages for implementing integrated pest management technology programme. In related to this programme front line demonstration, training programmes, farmers' melava, exposure visits, field days, farmers' rallies, demonstrations etc. activities were implemented. Impact of the integrated pest management

technology programme and its sustainability mainly depends upon the positive or negative attitude of cotton growers towards the integrated pest management technology programme. For implementing the programme, among the total 234 progressive cotton growers only 100 cotton growers were selected randomly for the present study.

## RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

### Personal profile :

The data on personal profile were sought, computed, presented and discussed in Table 1.

It was observed that majority of the cotton growers (62.00 %) belonged to the middle age group *i.e.* between 30 to 46 years followed by young (24.00 %) age group. Most (38.00 %) of the respondents were found literate having formal education level up to higher secondary and diploma (Table 1). As regarding holding, majority (60.00 %) of the respondents had medium size of land holding, 27.00 per cent had small holding, followed by 13.00 per cent had large size of land holding between 2.01 to 4.00 ha. The majority (78.00 %) of the cotton growers having medium farming experience *i.e.* 10 to 17 years. The maximum cotton growers (52.00 %) were found in medium social participation category (Score between 5 to 8) followed by 32.00 per cent in low social participation category.

As far as annual income, it was found that 64.00 per cent of the respondents fall in medium annual income group (Rs.55,001 to Rs. 92,500) while, 22.00 per cent respondents had high annual income level. The majority (56.00 %) of the cotton growers had fragmentation of land holding to 'medium' extent *i.e.* at 2-3 places. Regarding risk orientation, it was revealed that maximum proportion (57.00 %) of the respondents had preferred to take risk to the 'medium' extent, whereas, 28.00 per cent of them took risk to 'low' extent.

### Attitude of the farmers towards integrated pest management technology programme on cotton :

The data pertaining the attitude of the cotton growers towards IPM Technology programme on cotton are given in Table 2.

It was found that majority of the cotton growers

**Table 1 : Distribution of Cotton growers according to their personal profile (n=100)**

Particulars	No. of respondents	Per cent
<b>Age (years)</b>		
Young (upto 29 years)	24	24.00
Middle (between 30 to 46 years)	62	62.00
Old (47 and above)	14	14.00
Total	100	100.00
<b>Education</b>		
Illiterate (having no formal education)	09	09.00
Primary education (upto 4 <sup>th</sup> std.)	22	22.00
Secondary education (5 <sup>th</sup> to 10 <sup>th</sup> std.)	24	24.00
Higher secondary and diploma (11 <sup>th</sup> to 12 <sup>th</sup> std. and diploma)	38	38.00
Higher education (upto graduation and above)	07	07.00
Total	100	100.00
<b>Size of land holding (Acre)</b>		
Small holding (upto 2.00)	27	27.00
Medium holding (2.01 to 4.00)	60	60.00
Large holding (4.01 and above)	13	13.00
Total	100	100.00
<b>Farmer experience (years)</b>		
Low (upto 9 years)	07	07.00
Medium (between 10 to 17 years)	78	78.00
High (18 years and above)	15	15.00
Total	100	100.00
<b>Social participation</b>		
Low (Score upto 4)	32	32.00
Medium (Score between 5 to 8)	52	52.00
High (score 9 and above)	16	16.00
Total	100	100.00
<b>Annual income (Rs.)</b>		
Low (upto Rs.55,000)	14	14.00
Medium (Rs.55,001 to Rs. 92,500)	64	64.00
High (above Rs. 92,501)	22	22.00
Total	100	100.00
<b>Land fragmentation (index)</b>		
Low (upto 1.05)	17	17.00
Medium (1.06 to 1.20)	56	56.00
High (1.21 and above)	27	27.00
Total	100	100.00
<b>Risk orientation</b>		
Low (upto 17)	28	28.00
Medium (18 to 27)	57	57.00
High (28 and above)	15	15.00
Total	100	100.00

Table 2 : Distribution of cotton growers according to their attitude towards IPM technology		(n=100)
Attitude towards IPM technology (score)	No. of respondents	Percentage
Less favourable (Score upto 30)	15	15.00
Favourable (Score upto 31 to 40)	56	56.00
Most favourable (Score 41 and above)	29	29.00
Total	100	100.00

(56.00 %) had developed 'favourable' attitude towards integrated pest management technology programme on cotton. While, only 15.00 per cent of them had 'less favourable' attitude towards integrated pest management technology programme on cotton. However, 29.00 per cent of the respondents had developed 'most favourable' attitude towards integrated pest management technology programme on cotton. Integrated pest management Technology programme is need based and problem solving activity of cotton crop in the villages with due participation of the farmers in respect to planning and execution of the activity. Therefore, most of the cotton growers had favourable attitude IPM technology.

### Conclusion :

It was found that majority of the cotton growers (62.00 %) belonged to the middle age group *i.e.* between 30 to 46 years, literate having formal education level up to higher secondary and diploma and had medium size of land holding. Regarding farming experience 78.00 per cent cotton growers had medium experience and more than fifty per cent were found in medium social participation category. As far as annual income, it was found that 64.00 per cent of the respondents fell in medium annual income group (Rs.55,001 to Rs. 92,500) and more than half of the respondents had fragmentation of land holding to 'medium' extent *i.e.* at 2-3 places. Regarding risk orientation, the 57.00 per cent of the respondents had preferred to take risk to the 'medium' extent.

It is revealed that majority of the cotton growers (56.00 %) had developed 'favourable' attitude towards integrated pest management technology programme on

cotton. However, 29.00 per cent of the respondents had developed 'most favourable' attitude towards integrated pest management technology programme on cotton. Most of the cotton growers had favourable attitude towards IPM technology because it is need based and problem solving programme with respect to planning and execution of the activity.

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