

# Knowledge of IPM Practices among Cotton Growers of Sabarkantha District; Gujarat, India

Mukesh. R. Patel<sup>1</sup> and Sarita Sanwal<sup>2</sup>

Author<sup>1</sup>: Subject Matter Specialist, Krishi Vigyan Kendra, Ganpat Vidyanagar, Mehsana, Gujarat India, [mrpatelkvk@gmail.com](mailto:mrpatelkvk@gmail.com)

Author<sup>2</sup>: Assistant Professor, Sardarkrushinagar Dantiwada Agricultural University, S. K. Nagar, Gujarat, India.  
[sanwalsdau@gmail.com](mailto:sanwalsdau@gmail.com)

**Abstract:**-India is the pioneer country for the commercial cultivation of hybrid cotton. Cotton is one of the principal commercial crops and has been one of the main sources of India's economic growth and foreign exchange earner. Gujarat is the second largest cotton producing state of India. In Gujarat state Sabarkantha is also has major area under cotton crop. The study was conducted in Sabarkantha District of Gujarat State. Sabarkantha district was selected purposively on the basis of leading hybrid cotton growing area. Total sample size 240 respondents of cotton growers were selected from twelve villages of the district. The cotton crop is attacked by a number of insect, pests, diseases, nematodes and weeds. So, the aims of the study were to study the knowledge of cotton growers about IPM technology and find correlation between selected personal, socio-economic and psychological characteristics of cotton growers and their knowledge of IPM technology. A perusal of the data indicated that cotton growers had medium level of knowledge regarding IPM technology in cotton, In case of independent variable like age and land holding was found no-significant relationship with their knowledge level while selected remaining independent variables were found significant relationship with their knowledge level of farmer regarding IPM technology.

**Keywords:** Knowledge, Cotton and IPM Practices.

\*\*\*\*\*

## I. Introduction:

In India cotton is being grown for 5000 years. India is the pioneer country for the commercial cultivation of hybrid cotton. Cotton is one of the principal commercial crops and has been one of the main sources of India's economic growth and foreign exchange earner. Since launch of "Technology Mission on Cotton" by Government of India in February 2000 significant achievements have been made in increasing yield and production through development of high yielding varieties, appropriate transfer of technology, better farm management practices, increased area under cultivation of Bt cotton hybrids etc. All these developments have resulted into a turnaround in cotton production in the country since last 6/7 years. The yield per hectare which was stagnant at about 300 kg/ha for more than 10 years, has increased substantially and reached a level of 489 kg/ha in cotton season 2012-13. The 1<sup>st</sup> commercial hybrid - Hybrid 4 (H- 4) was released in 1970 from Main Cotton Research Station of Gujarat Agricultural University, now Navsari Agricultural University for cultivation in the state of Gujarat. Gujarat is the second largest cotton producing state of India. In Gujarat state Sabarkantha is also has major area under cotton crop. However it is interesting to note that cotton, which occupies only five per cent of the total cultivable land consume more than 55 per cent of the pesticides used in India. Excessive and indiscriminate use of chemical pesticides has lead to several complications such as resistance development, resurgence, secondary pest

outbreak, toxicity to beneficial organism, residue in food, feed, fodder etc and above all environmental pollution. The cotton crop is attacked by a number of insect, pests, diseases, nematodes and weeds. Yield losses due to the pests range from 15-25 per cent. The approach to overcome these ill effects of pesticides to a certain extent is Integrated Pest Management practices. The IPM approach is gaining importance and is being increasingly adopted in country .Keeping above points in mind the study was undertaken with the following specific objectives:

- 1) To study the knowledge of cotton growers about IPM technology.
- 2) To study correlation between selected personal, socio-economic and psychological characteristics of cotton growers and their knowledge of IPM technology.

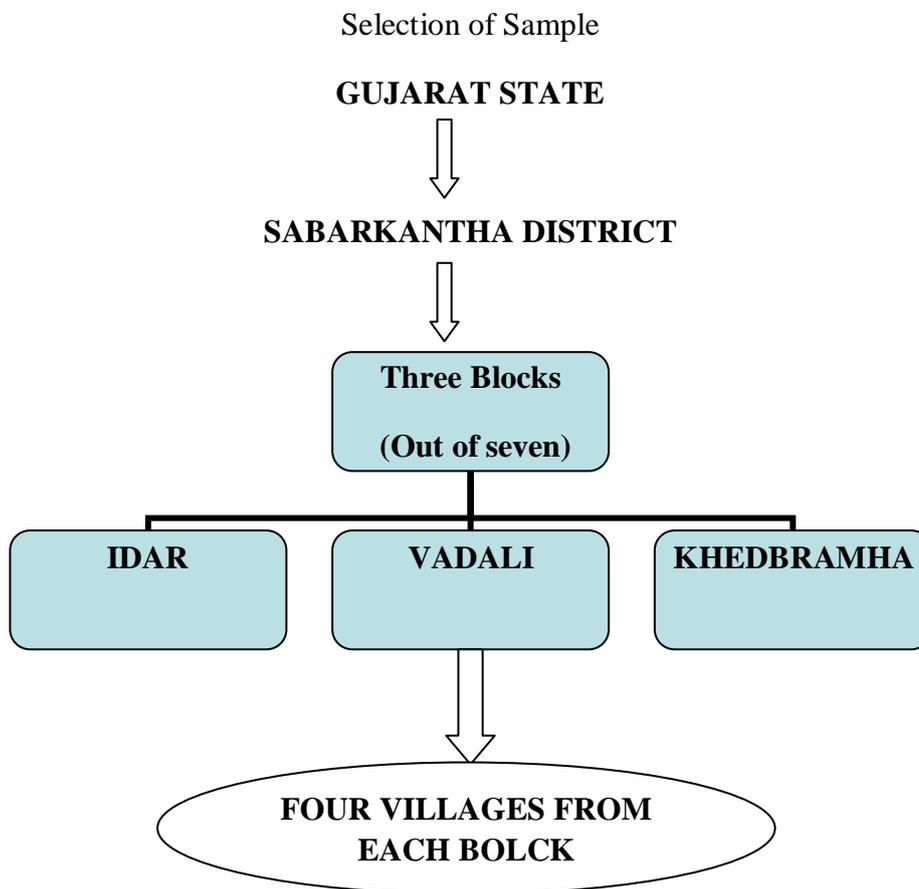
## II. Material and methods:

The cotton growers total 240 farmers for the study were selected by taking into consideration several personal and socio-economic characteristics and psychological characteristics like age, education, land holding and occupation, annual income, economic motivation, scientific orientation, attitude towards IPM and agriculture belief (Shown in figure 1).The data was collected with help of pre tested well structure schedule by using interview with the cotton growers. The data were statistically analyzed with the help of frequencies percentage and rank. A teacher made

scale based on scale developed by Jha and Singh (1970) was used in the study to measure knowledge of the respondents about IPM technology. To find out the relationship between

dependent and independent variables the person product moment method (Garette, 1967) was used for computing correlation Coefficient in this study.

**FIGURE: 1**



**III. RESULT AND DISCUSSION**

**Table –1: Distribution of Hybrid Cotton Growers According to their Knowledge Level of IPM Strategy**

(N=120)		
Knowledge level	Respondents	Percent
Low (up to 32.62 score)	21	17.50
Medium (32.64 to 41.56 score)	81	67.50
High (Above 41.56 score)	18	15.00

The data depicted in the table-1 that 67.50 percent respondents had medium level of knowledge regarding IPM strategy in hybrid cotton crop. 17.50 percent respondents fall under the low level of knowledge regarding IPM

strategy in hybrid cotton crop. This might be due to insufficient awareness regarding IPM practices and unfavorable attitude towards IPM in Hybrid cotton crop.

This finding is supported by Juliana et al (1991)

**Table-2: Relationship between Personal, Socio-Economic Psychological and Communications Characteristics of Hybrid Cotton Growers and Their Level of Knowledge**

Sr No.	Characteristics (Independent variable)	correlation coefficient with knowledge ('r' value)
I	<b>Personal characteristics</b>	
	1. Age	0.0694
	2. Education	0.3688*
II	<b>Socio-economic characteristics</b>	
	3. Land holding	0.0969
	4. Annual income	0.1926*
	5. Occupation	0.2179*
III	<b>Psychological characteristics</b>	
	6. Economic motivation	0.4399*
	7. Scientific orientation	0.5026*
	8. Risk Orientation	0.3476*
	9. Attitude towards IPM	0.6850*
	10. Agricultural belief	0.7515*
IV	<b>Communication Characteristic</b>	
	11. Mass Media Exposure	0.9221*
	12. Extension contact	0.7943*
	13. Training received	0.5596*

\* Significant at 0.05 percent level of significant

The data revealed there is no significant relationship between age and land holding of hybrid cotton growers and their knowledge level. Hence, the null hypothesis sets for the study that there is no relationship between age respondents and land holding of the respondents and their knowledge level was accepted. The probable reason may be that hybrid cotton growers received training irrespective of their age.

A perusal of the data in Table-2 also depicts that Education, Annual Income, Occupation, all psychological characteristics and communicational characteristics was significantly relationship with knowledge level of hybrid cotton growers about IPM strategy. There is significant relationship between occupation of the respondents and their knowledge level about IPM strategy the reason might be that

as farmers engaged in farming and animal husbandry. They interested to know more about that it significant relationship between attitude of hybrid cotton growers and their knowledge level. Finding supported by Vankar (2000)

Hence, the null hypothesis set for the study that there is significant relationship between education, annual income, occupation and all psychological characteristics and communicational characters of the respondents and their knowledge level was rejected.

#### IV. Conclusion

It is concluded from the findings that among the independent variables only Age (0.0694) and land holding (0.0969) was found non-significantly correlated with knowledge, while in case of Education, Annual income, Occupation, Mass media exposer, extension contact training received and all the psychological characteristics and communicational characteristics were significantly correlated with knowledge level regarding IPM strategy of Hybrid cotton crop. Result revealed that only 15.00 percent respondents had high level of knowledge regarding IPM strategy in hybrid cotton crop. Thus, for the high-quality cultivation of cotton crop there is proper training and IPM practices should be provided to enhance knowledge of IPM Practices among Cotton Growers.

#### Reference

- [1] Ancrynuous, 2012-13 - Govt. of India Ministry of Agriculture.
- [2] Garett H E 1967. Statistics in psychology and education vakils efferes and simsons pvt ltd Bombay.
- [3] Jha P.N. and Singh K.N. 1970. A test of major farmers knoweldge about high yielding variety programme Interdisciplinary 7 (1) : 67-78
- [4] Vankar P.M. (2000). Impect of cannel irrigation schedule caste farmers in Khambat taluka of Anand district of Gujarat state M.Sc (Agri) thesis, GAU, S.K. Nagar.
- [5] Juliana, C.S.; Annamalai, R. and Somasundaram S. (1991). Adoption of Integrated Pest Management Practices *Indian J. Ext.Edu.*, 26 (3&4) : 23-27
- [6] National Cotton Scenario;  
<http://cotcorp.gov.in/national-cotton.aspx>