CHAPTER VI
SUMMARY AND CONCLUSION

In this chapter, a nutshell description of the study in respect of the summary, conclusion, implication and suggestions for the further research is included. This chapter has been divided into the following subheads.

6.1 Summary
6.2 Major findings and conclusion
6.3 Implications
6.4 Suggestions for the further research

6.1 SUMMARY

6.1.1 Introduction

Cotton is one of the most important commercial fibre crops of India. Today it continues to rule as the “King of Apparel Fibre”. It is playing a key role in economic, political and social affairs of the world. It is known as “white gold” due to its importance in agricultural as well as industrial economy.

It provides a livelihood to farmers and people engaged in related activity in India by way of support in agriculture, processing, and use of cotton in textiles. Apart from its value as fibre, the potential of cotton is used such as edible oil (seed oil) and cotton cake as cattle feed and hull meal. Other by-products like particle board, corrugated boxes are enormous. Cotton is one of the major kharif crop grown under both irrigated and rain-fed conditions in India. Besides food and housing, clothing is one of the primary needs of human being. On an average 14.2 meter cloth is required per head per annum to fulfill clothing need. It is playing a key role in economic, political and social affairs of the world. Due to its importance in agricultural as well as industrial economy, it is also called as "white gold". All parts of the cotton plant are useful. The most important is the fiber or lint, which is used in making cotton cloth. Linters, the short fuzz on the seed provide cellulose for making plastics, explosives and other products. Linters are also incorporated into high quality paper
products and processed into batting for padding mattresses, furniture and automobile cushions.

Cotton is an international crop grown by about 80 countries across the world with China, India, United States, Pakistan and Brazil being five of the largest producers of cotton. On an average, cotton is planted in an area of 329.49 lakh hectares. India is at top with 1st rank by contribution of 33.23 per cent in total area of the world. China is at 2nd position by contributing 16.02 per cent. The countries of USA, Pakistan, Uzbekistan and Brazil rank 3rd, 4th, 5th & 6th by contribution of 11.27, 9.01, 4.06 & 3.09 per cent respectively.

There is a need of exercise that heavy dose of pesticide is not the most judicious way of pest control and therefore, emphasis should be on the pragmatic use of new technologies in integrated plant protection methods for sustainable development and food safety. Integrated Pest Management (IPM) is an approach that envisages combination of methods that may contribute to suppression of pest by cultural method, resistance crop varieties, conservation and augmentation of natural enemies and specific chemical pesticide as need to keep pest population level at below economic injury. Hence, it is important to know the extent of adoption of Integrated Pest Management (IPM) by cotton growers.

Therefore, the present study entitled “Knowledge and attitude of cotton growers towards Integrated Pest Management in Surendranagar district of Gujarat state” was carried out with following specific objectives.

1. To study the personal, socio-economic, communicational and psychological characteristics of cotton growers.

2. To assess the knowledge of cotton growers regarding Integrated Pest Management.

3. To study the attitude of cotton growers towards Integrated Pest Management.

4. To find out relationship between selected characteristics cotton growers and their knowledge about Integrated Pest Management.

5. To study the relationship between selected characteristics of cotton growers and their attitude towards Integrated Pest Management.
6. To analyze the constraints faced by the cotton growers in adoption of Integrated Pest Management.

7. To seek the suggestions from the cotton growers to overcome the constraints faced by them in adoption of Integrated Pest Management.

6.1.2 Review of literature

A brief account of literature reviewed were presented under different heads viz., selected characteristics of cotton growers, knowledge of cotton growers about Integrated Pest Management, attitude of cotton growers towards Integrated Pest Management, association between characteristics of respondents and their knowledge and attitude towards Integrated Pest Management. Constraints faced by cotton growers in adoption of Integrated Pest Management and suggestions to overcome the constraints faced by them were included in review of literature.

6.1.3 Methodology

Ex-post facto research design was followed for carrying out the study. For drawing the sample for the study multistage simple random sampling technique was used. The study was in conducted Surendranagar district of Gujarat state. Surendranagar consist total ten talukas. Out of ten talukas three talukas were selected maximum area under cotton cultivation. From each selected taluka four villages were selected randomly. Total twelve villages from three talukas were selected randomly and ten cotton growers from each village were selected as respondents. Thus samples of total 120 cotton growers from twelve villages were considered for the study having highest area under cotton cultivation.

The dependent variables undertaken in this study were knowledge attitude of cotton growers towards Integrated Pest Management. Knowledge of the respondents about Integrated Pest Management of cotton crop was measured with the help of teacher made test based on scale developed by Jha and Singh (1970) with appropriate modification. For measuring attitude of cotton growers towards Integrated Pest Management, 5- point rating scale developed by Chavai and Sawant (2007) was used.

The independent variables undertaken in this study like age, education, farm experience, training received, size of family, annual income, land holding, social
participation, mass media exposure, scientific orientation, risk orientation and innovativeness were measured with suitable scales and procedures with due modification. Constraints received by beneficiaries and suggestion to overcome the constraints were also studied.

An interview schedule was developed in accordance with the objectives of the study and it was pre-tested and translated into Gujarati. The data of this study were collected with the help of structural interview schedule. The collected data were classified, tabulated, analyzed and interpreted in order to make the findings meaningful. The statistical measures such as percentage, mean, standard deviation and co-efficient of correlation were used in the study.

6.2 MAJOR FINDINGS AND CONCLUSION

The conclusions which were drawn based on the findings of the study are as under.

6.2.1 Characteristics of beneficiaries

6.2.1.1 Personal characteristics

In respect to personal characteristics, 51.67 per cent of respondents belonged to middle age group, about 28.34 per cent of respondents belonged to middle school level of education, 61.66 per cent of the respondents had medium farm experience and 45.83 per cent respondents had received one training.

6.2.1.2 Socio-economical characteristics

As regards to socio-economical characteristics, 34.18 per cent respondents had five to six members in family, 46.66 per cent respondents had Rs. 1,00,001 to Rs. 1,50,000 annual income, 56.66 per cent respondents had medium land holding and about 63.34 percent respondents had medium level of social participation.

6.2.1.3 Communication characteristics

In respect to communication characteristics majority of the respondents (67.50 per cent) had medium level of mass media exposure.
6.2.1.4 Psychological characteristics

The respondents with relation to psychological aspects, majority of the respondents (45.00 per cent) had medium scientific orientation; 62.50 per cent of respondents belonged to medium risk orientation group and 54.84 per cent respondents had medium level of innovativeness.

6.2.2 Knowledge of cotton growers about Integrated Pest Management

Majority of the cotton growers (75.00 per cent) were from medium level knowledge group with respect to Integrated Pest Management. Whereas 14.16 and 10.84 per cent of respondents was in low and high knowledge group, respectively.

6.2.3 Attitude of cotton growers towards Integrated Pest Management

It was noticed that 55.00 per cent of the cotton growers had favourable attitude, while 24.16 per cent and 20.84 per cent had most favourable and less favourable attitude towards Integrated Pest Management.

6.2.4 Relationship between selected characteristics of cotton growers and their knowledge about Integrated Pest Management

The characteristics of the respondents viz; education, annual income, mass media exposure, scientific orientation, risk orientation and innovativeness had positive and highly significant relationship with the knowledge about Integrated Pest Management.

The characteristics of the respondents like farm experience, training received and social participation were positively and significantly related with knowledge about Integrated Pest Management.

There was no significant relationship between characteristics of respondents and their knowledge about Integrated Pest Management with land holding. Age and size of family were negative and non-significant relationship with knowledge about Integrated Pest Management.
6.2.5 Relationship between selected characteristics of cotton growers and their attitude towards Integrated Pest Management

The characteristics of the respondents like mass media exposure, scientific orientation and risk orientation were positive and highly significant relationship with attitude towards Integrated Pest Management.

The characteristics of the respondents like education, farm experience, training received, social participation and innovativeness were positive and significant relationship with attitude towards Integrated Pest Management.

There was no significant relationship between characteristics of respondents and their attitude towards Integrated Pest Management with their annual income and land holding. Age and size of family were negative and non-significant relationship with attitude towards Integrated Pest Management.

6.2.6 Constraints and Suggestions

6.2.6.1 Constraints faced by the cotton growers in adoption of Integrated Pest Management

The most important constraints faced by the cotton growers were:

1. Non-availability of tricho-cards, trichoderma, pheromone traps and light trap at local market

2. Inadequate demonstration on IPM

3. Lack of trainings on IPM

4. Poor knowledge to judge Economic Threshold Level (ETL)

5. Lack of technical advice on IPM

6. High cost and non-availability of skilled labour

7. High cost of pesticide and fungicides

8. Lack of knowledge about proper dose of insecticide and pesticides

9. Lack of knowledge about pests life cycle and their infestation

10. Lack of proper knowledge of IPM
6.2.6.2 Suggestions by cotton growers to overcome the constraints faced by the cotton growers in adoption of Integrated Pest Management

The most important suggestions expressed by respondents were:

1. Trichoderma, tricho-cards, pheromone traps, light trap should be available at local market
2. More training on IPM technologies should be conducted
3. More demonstration on IPM technologies should be conducted
4. Technical guidance should be provided
5. Skilled labour should be available at lower cost
6. Pesticide and fungicides should be available at lower price
7. Knowledge about proper dose of insecticide and pesticides should be provided
8. Awareness of use of chemical pesticides in recommended quantity
9. More Effective insect-pest control measures should be developed
10. Proper knowledge of IPM in cotton should be provided

6.2.7 Empirical model

The tentative paradigm was developed in the beginning of the thesis while arriving at the conceptual framework of this study (Fig. 9 and 10). Now final form of paradigm based on the findings of this study is presented in the Fig. 19 and 20 showing only those independent variables which had significant relationship with cotton grower's knowledge and attitude towards Integrated Pest Management.
Summary and Conclusion
6.3 IMPLICATIONS

1. The study facilitates in knowing the characteristics of the farmers which would provide guideline for the planners and extension agencies in planning and implementing programmes related to Integrated Pest Management in other areas.

2. The results of this study would be helpful in generating data based existing level of knowledge about various aspects of Integrated Pest Management which will serve as a guideline to planners and extension agencies to understand the knowledge gap if any among various aspects and help to increase knowledge regarding Integrated Pest Management.

3. The outcome of the study revealed that the majority of the respondents had favourable attitude towards Integrated Pest Management. So, efforts should be made to change attitude from favourable to most favourable by conducting training programmes and appropriate demonstrations related to Integrated Pest Management.

4. The findings of the present investigation would be helpful to the administrators, extension workers, social and research workers in order to develop future strategy to make use of potentialities of rainfed cotton growers for their more effective and efficient involvement in cotton cultivation.

5. The respondents were found to be lacking in detail knowledge about judging of ETL for per control, light traps, pheromone traps, about biological control, crop rotations. Therefore, it should necessary to provide proper knowledge about it by training and demonstrations in Integrated Pest Management.

6. To improve knowledge and attitude of cotton growers towards Integrated Pest Management by participate in extension activities, exhibitions and agriculture related programmes to improve their technical knowledge.

7. The suggestions made by cotton growers to overcome from constraints in adoption of Integrated Pest Management help to planners and extension agencies and other organizations for better policy making for Integrated Pest Management.
6.4 SUGGESTIONS FOR FUTURE RESEARCH

The present study throw light on the new areas, where further research work needs to be carried some of them are as under:

1. The area of research should be extended further and sufficiently large number of cotton growers should be identified and should be included in the study in future.
2. Similar type of study carried out with different aspects which are not covered into this study.
3. Similar studies may also be conducted from time to time in different areas.