CHAPTER III
THEORETICAL ORIENTATION

This chapter is devoted to the development of the theoretical orientation for
the study. The review of literature related to the study is given in the preceding
chapter helped in formulating theoretical orientation. The chapter has been sub
divided into the following major heads.

3.1 Conceptual framework of the study
3.2 Identification of variables
3.3 Definition of some common terms
3.4 The paradigms

3.1 CONCEPTUAL FRAMEWORK OF THE STUDY

Cotton is one of the major Kharif crop grown under both irrigated and rain-
fed conditions in India. On one hand, cotton crop gives high economic return to the
farmers, while on the other hand, there are many risks involved in it. The cultivation
of cotton also needs costly inputs in terms of seeds, fertilizers and pesticides. If proper
care is not taken, it proves as monetary uncertain business. It is also sensitive crop to
many diseases and pests. It is known as risky crop considering natural hazards, as well
as the everyday fluctuating of wholesale price index. Thus, sometimes crises involved
in cotton crop create serious climatic consequences on the income and life style of the
farmers.

Integrated Pest Management is one of such systematic approach which
emphasizes not only the reduction in use of pesticides and keeping below the level of
pest causing economic injury but also it facilitates the use of cultural, mechanical,
botanical, biological and chemical methods of control in an integrated manner and
restores ecological balance for sustainable agriculture.

Integrated Pest Management is an adoption-based technology. It involves
integration of different methods of disease and pest management to manage an
important disease or pest of a crop or to manage all the important diseases and pests
of a particular crop or to manage all diseases and pests in a particular cropping
system. Under IPM, use of chemical pesticides is discouraged but not totally banned. IPM modules are area specific. They take into consideration not only diseases and insect pests but also availability of inputs. Most of the modules include too many practices, which usually discourage the farmers. They are not ready to invest their entire energy in pest management alone. Therefore, it is important to develop modules involving few critical interventions.

Uses of resistant varieties are most important input of any IPM module. The use of pesticides should be avoided as much as possible. However, need based and judicious use of pesticides is advocated under Integrated Pest Management. Wherever, available use of environmentally safe pesticide should be preferred.

In present study, an attempt has been made to assess the knowledge & attitude about IPM in cotton by cotton growers with respect to increase productivity and production of cotton.

The main objective of conceptual framework being developed in this study was to provide an abstract view to the level of knowledge and attitude of cotton growers towards Integrated Pest Management and their interaction with personal, socio-economic, communication and psychological characteristics. The framework was expected to facilitate theoretical and empirical analysis of level of knowledge attitude towards Integrated Pest Management in cotton.

3.2 IDENTIFICATION OF VARIABLES

3.2.1 Dependent variable

3.2.1.1 Level of knowledge

Knowledge is the body of understood information possessed by an individual. Knowledge is considered as those behavior and test situations, which emphasize the remembering, either by recognition or recall of ideas, material or phenomena. Knowledge is the function of an innovation decision process when “the individual is exposed to an innovation existence and gains some understanding of its functions.” There are three components of the knowledge viz,

1. “Awareness knowledge” which refers to the information that innovation exists.
2. “How to knowledge” which refers to the information needed to use an innovation properly.

3. “Principle knowledge” which comprises the functioning. Principles underlying the innovation (Rogers and Shoemaker, 1971).

Taking a clue from the foregoing discussion, the knowledge considered as a body of “understood information” and “how to knowledge” possessed by the cotton growers about Integrated Pest Management.

Majority of the respondents had medium level of knowledge regarding Integrated Pest Management in cotton according Desai et al. (2000), Patel et al. (2003), Chavda (2005), Sangeetha et al. (2009) and Shinde (2011).

### 3.2.1.2 Attitude

An attitude is often defined as a tendency to react favourable or unfavourable towards a designated class of stimuli such as a national or racial group, a custom or an institution. For the purpose of this study, the definition of attitude towards Integrated Pest Management is taken as an affect or feeling, favourable or unfavourable towards integrated pest management.

Majority of the respondents had favourable attitude towards Integrated Pest Management in cotton according Shinde (2011), Dodiya (2011) and Kadam (2016).

### 3.2.2 Independent variables

Majority of the respondent were from middle age group according to Dhayal and Mehta (2015), Patel (2016), Dobariya (2017); Kumbhani (2017). Majority of the respondents were educated up to higher secondary level according Vasava (2013), Patel (2016), Dobariya (2017), Muhammad et al. (2017). Majority of the respondents had medium farm experience according Parmar (2006), Desale (2009), Sangeetha et al. (2009), Bhosale (2010), Gohil (2010), Shinde (2011), Badhe (2012), Dobariya et al. (2017). Majority of the respondents had medium training received according Patel (2002), Parmar (2005), Patel (2005), Patel et al. (2017). Majority of the respondent had large family size according Toppo (2005), Rathod (2009), Bhosale (2010), Dobariya et al. (2017) and most of them had medium size of family according Deshmukh et al. (2009), Tilara (2010), Cavane (2011) and Patel et al. (2016).

3.2.3 Relationship between Dependent and Independent variables

3.2.3.1 Knowledge and independent variables

It was envisaged that the association between two variables (independent and dependent) provide the strength, direction and effect of one variable on the other included in the present study. Attempts were made to ascertain the extent of association between the variables and their direction.

As regards to association between selected characteristics of the respondents and their level of knowledge, it was observed that age had negative and significant association with extent of knowledge according Hadiya (2013), Rajput (2016), Dobariya et al. (2017). Education had positive and significant association with extent of knowledge according Kalsakar et al. (1999), Joshi (2004), Chauhan (2008), Jadeja
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3.2.3.2 Attitude and independent variables

As regards to association between selected characteristics of the respondents and their attitude, it was observed that age had negative and non significant association with attitude according Zala (2008), Rahman (2010), Shinde (2011), Chaudhari and Chauhan (2017), Patel et al. (2017). Education had positive and high significant association with attitude according Shinde (2011) and Chaudhari and Chauhan (2017). Farm experience had positive and significant association with attitude according Patel et al. (2007) and Patel et al. (2017). Training received had positive and significant association with attitude according Patel (2005a) and Rahman

3.2.4 Constraints

The difficulties or problems faced by the cumin farmers in adoption of Integrated Pest Management in cotton were considered as constraints.

The constraints faced by respondents were: non-availability of training in time, Lack of scientific information, Lack of timely technical advice, High cost of plant protection appliances, Non-availability of credits in time, Non-availability of plant protection appliances, Lack of skilled labours and High cost and non-availability of labours. So the non-availability of training in time, lack of scientific information lack of timely technical advice were the major constraints as perceived by the cotton growers in adoption of Integrated Pest Management practices of cotton crop according Shinde, (2011).

3.2.5 Suggestions

The ways and means or opinions as suggested by the respondents to overcome the constraints in adoption of Integrated Pest Management in cotton were considered as the suggestions in this study.
The suggestions to overcome the constraints were: training should be imparted in time, Scientific advise should be given in time, Low cost plant protection appliances should be provided in time, seeds of Insect and disease resistance should be given at reasonable prices, Necessary information regarding use of bio-agents should be provided, Arrangement for crop loan and insurance should be made and kit and literature regarding IPM should be provided. So it is evident from study that the training should be imparted in time, scientific advice should be given in time were major suggestions offered by cotton growers to overcome the constraints faced by them according Shinde (2011).

3.3 DEFINITION OF SOME COMMON TERMS

3.3.1 Knowledge

It is the body of understood information possessed by an individual with respect to Integrated Pest Management in cotton crop by cotton growers.

3.3.2 Attitude

It is the degree to which the negative and positive reaction of the cotton growers towards Integrated Pest Management.

3.3.3 Constraints

This refers to the items of difficulty which faced by the cotton growers in adoption of Integrated Pest Management in cotton crop by cotton growers.

3.3.4 Suggestions

Cotton growers were asked to indicate the possible suggestions for overcoming the constraints in adoption of Integrated Pest Management in cotton crop. The ranks were assigned to each suggestion based on the frequency and percentages.

3.3.5 Age

It refers to the completed years of the respondents on the date of interview rounded off to the nearest years.
3.3.6 Education

It is the ability of farmers to read and write or formal education received up to a certain standard. It is the level of literacy of the farmer.

3.3.7 Farm experience

It refers to duration of involvement of cotton growers in number of completed years.

3.3.8 Training receive

It is defined as the cotton grower who has taken any type of training related to agricultural field by agricultural university or any other organization.

3.3.9 Size of family

It refers to number of members in the family of cotton growers.

3.3.10 Annual income

This indicates about the total annual income which was earned by the respondents from both farming and allied fields put together.

3.3.11 Land holding

It is the number of hectare of land an individual farmer possesses and cultivates.

3.3.12 Social participation

It refers to the participation of a respondent in local organizations (formal or informal).

3.3.13 Mass media exposure

It is defined as the nature and frequency of cotton grower’s involvement in different mass media.
3.3.14 Scientific orientation

It is a degree to which cotton growers are oriented to the use of scientific method in decision making in relation to Integrated Pest Management.

3.3.15 Risk orientation

It is a degree to which cotton growers are oriented to take risk and uncertainty in Integrated Pest Management.

3.3.16 Innovativeness

Innovativeness is operationally defined as the degree to which a farmer is relatively earlier in adopting the new ideas.

3.4 THE PARADIGMS

The conceptual framework given in the preceding section was presented paradigmatically which was developed during the course of study. The models shown in figure 1 and figure 2 were tentative and generalized. The final model will be suggested at the end of this thesis in the chapter of findings and discussion, when the investigation yields information on cotton grower’s characteristics, their level of knowledge and attitude towards Integrated Pest Management in cotton.

In the tentative models presented in figure-1&2: there were twelve variables of cotton growers, which may be associated with their level of knowledge and attitude.
Factors related with knowledge of cotton growers about Integrated Pest Management. (Tentative paradigm)

Fig.1 Tentative conceptual model showing factors related with knowledge of cotton growers about Integrated Pest Management
Factors related with attitude of cotton growers towards Integrated Pest Management. (Tentative paradigm)

Independent Variables
- Age
- Education
- Farm experience
- Training received
- Size of family
- Annual income
- Land holding
- Social participation
- Mass media exposure
- Scientific orientation
- Risk orientation
- Innovativeness

Dependent Variable
- Attitude

Fig. 2 Tentative conceptual model showing factors related with attitude of cotton growers towards Integrated Pest Management