

**A STUDY ON KNOWLEDGE AND ADOPTION OF ORGANIC
FARMING PRACTICES AMONG THE FARMERS IN SEHORE
DISTRICT (M.P.)**



THESIS

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By

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CERTIFICATE-I

This is to certify that the thesis entitled “**A Study on Knowledge and Adoption of Organic Farming Practices among the farmers in Sehore District (M.P.)**” submitted in partial fulfillment of the requirements for the degree of Master of Science/Doctor of Philosophy in Agriculture/Horticulture of the Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior is a record of the bonafide research work carried out by **Mahesh Kumar Badgujjar, ID.No. RA/SH/266/2006** under my guidance and supervision. The subject of the thesis has been approved by the student’s Advisory Committee and the Director of Instruction.

No part of the thesis has been submitted for any other degree of diploma (Certificate awarded etc) or has been published/ published part has fully acknowledged. All the assistance and help received during the course the course of the investigation has been acknowledged by him/her.

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Place – Sehore

Date -

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CONTENTS

S.NO.	TITLE	PAGES
1	INTRODUCTION	1-6
2	REVIEW OF LITERATURE	7-15
3	MATERIAL AND METHODS	16-28
4	RESULTS	29-56
5	DISCUSSION	57-60
6	SUMMARY, CONCLUSION AND SUGGESTIONS	61-67
7.	BIBLIOGRAPHY	68-70
	APPENDIX	i-vii
	VITA	

LIST OF TABLE

TABLE NO.	TABLE	PAGE NO.
4.1	Distribution of respondents according to their socio-personal variables.	30
4.2	Distribution of respondents according to their economical variables.	31
4.3	Distribution of respondents according to their communication variables.	32
4.4	Distribution of respondents according to their extent of knowledge in respect of organic farming practices.	34
4.5	Distribution of respondents according to their level of knowledge.	38
4.6	Distribution of respondents according to their Extent of adoption of organic farming practices	39
4.7	Distribution of respondents according to their level of adoption	44
4.8	Association between age and adoption of organic farming practices	45
4.9	Association between education and adoption of organic farming practices	46
4.10	Association between farming experience and adoption of organic farming practices	47
4.11	Association between farm size and adoption of organic farming practices	48
4.12	Association between annual income and adoption of organic farming practices	49

4.13	Association between livestock possession and adoption of organic farming practices	50
4.14	Association between information source utilization and adoption of organic farming practices	51
4.15	Association between extension contact and adoption of organic farming practices	52
4.16	Association between mass media exposure and adoption of organic farming practices	53
4.17	Constraints faced by respondents regarding adoption of organic farming practices	54
4.18	Suggestions confronted by the farmers for solving the constraints	55

LIST OF FIGURE

TABLE NO.	TABLE	PAGE NO.
1.	Distribution of the respondents according to their socio personal variables	30-31
2.	Distribution of the respondents according to their Economic variables	31-32
3.	Distribution of the respondents according to their Communication variables	32-33
4.	Distribution of the respondents according to their extent of knowledge	38-39
5.	Distribution of the respondents according to their extent of adoption	44-45

CHAPTER I

INTRODUCTION

Even after a long time of independence, agriculture in India is still the back bone of its economy. Unless the agricultural sector is well taken care of development as an efficient support by adopting the improved production technology, which is under the control of farmers and in their preview. The progress of economic development will be slow, unsteady and unbalanced. Green revolution text clearly indicated that next to the provision of an assured supply of water, the use of manure offers the most important single means of increasing the yield of crops. Experienced has shown that the plant food, abstracted by the low yielding varieties of crops, is replaced through the operation of the natural recuperative powers of the soil, assisted by the small quantity of manure occasionally applied, and that the fertility of the soil in India has thus become stabilized at a low level. If therefore, the yield of crops is to be increased; in particular, if the full benefit is to be derived from improved varieties, plant food must be added to the soil in vary considerable quantities. The problems of the low fertility of Indian soil were recognized by the planners in the very beginning, who have accorded prime importance to fertilizers in successive planes. Due to high use of chemical fertilizer, the soil property is becoming poor and reducing its quality which adversely affected its use during recent years. It is now conceded, at least in principle, which organic manures should receive for more attention in coming years.

Resent agricultural techniques for crop cultivation may play a vital role in enhancing production of crops. Among the yield attributing inputs, fertilizer and plant protection measures (insect pest and weeds) are essential inputs like land, labour and capital in any crop production programme. It is estimated that nearly 25 to 35 per cent of costs are incurred towards fertilizers inputs (Shivananda *et al.* 2008). On the other hand, the costs of plant protection measures also vary costly items in production process. These inorganic inputs not only found to costly but it is hazardous also.

The inorganic fertilizers like calcium ammonium nitrate, diammonium phosphate, urea etc, have been found to contain cadmium, lead, leached agrochemicals often reach water bodies making them unfit for use. The use of synthetic fertilizers and pesticides often leave residues with levels above maximum tolerance limits (MTL) in food and horticulture products. The residual effects of chemical pesticides are also high which usually affect our food chain leading to health security problems including sterility. According to one of the reports of Indian Council of Medical Research (ICMR), 51 per cent of foods in India are contaminated with pesticides of which 20 per cent have levels exceeding maximum tolerance limits (Shivananda *et.al.* 2008).

The pesticides contaminate the environment and area also toxic to many insect pollinators, predators and beneficial soil micro flora. This calls for renewed efforts in the pursuit of the growing organic crops world over. India with diverse agro-climatic conditions has tremendous scope for production of organic crops with relatively better quality.

Although, the agricultural production has not reached the expected stage because of lack of production resources such as irrigation, fertilizers, improved quality of seeds, plant protection and post harvest management. On the other hand maximum land holding of the farmers found to be marginal and small and growing the crop in rainfed condition. The return on investment of crop production is not assured due to failure of rains, unpredictable weather and other natural calamities. The majority of the crops in the state also adversely suffer from soil nutritional deficiency. The marginal and poor farmers as well as technological backward farmers are unable to provide necessary inputs for crop production due to higher cost involved in yield attributing inputs. Under such conditions, organic farming can be a boon for these farmers, as the farmers can enrich their soil and manage their crops without depending on expensive external inputs besides organically grown food fetches better prices in domestic as well as in international market.

Organic farming system is not new in our country and is being followed from ancient time. It is a dynamic interaction between the soil, the plants, the ecosystem and the environment which primarily aimed at cultivating land and raising crops in such a way as to keep the soil alive and in good health by use of organic waste i.e. crop, animal and farm waste and other biological material along with beneficial microbes.

At present in modern agricultural technological era, improved human nutrition and environmental degradation have promoted agricultural scientist to reevaluate the current agricultural practices (avoid of chemical inputs) and investigate alternative production method (adoption of organic farming). The advocates of organic farming open that this alternative form of farming will not only provide safe, nutritious food but will also considerably cut down the cost of cultivation and will also make our agriculture sustainable in the long range.

“Organic farming is production system that avoids or largely excludes the use of synthetic compounded fertilizers, pesticides, growth regulated etc. To maximum extent feasible organic farming system relay on crop rotation, crop residues, animal manures, legumes, green manures, off farm waste and other aspect of biologically pest control and mechanical cultivation to maintain soil productivity and tilth to support plant nutrients and to control weeds, insect and other pest, it has considerable economic, environmental and sustainability implications”.

Broadly it is describe that there are many components of organic farming, which can reduce the cost of cultivation and ensure an immaculate environment. These include use of farmyard manure, compost, green manure, organic mulches, vermin compost and bio fertilizers, which can in rich soil, support the crop growth and yield.

At present around 18 million tonnes of organic fertilizer and about 80,000 tonnes of synthetic pesticides are being used to produce all the food that we know eat and survive (Sharma *et al.* 2009). To produce more food grains in India, still better uses would be needed but its increasing cost faster:

adulteration and its timely non-availability are discouraging the farmers to go for their large scale application. In such situation organic farming is such alternative which could suit both the economics and the environment.

On the basis of above facts, the use of chemical fertilizer, pesticide and other inputs need to be minimized or avoided so that it could be ecologically least disruptive, economically viable and at the same time socially acceptable, conservation of natural enemies may also be given to weightage for healthy and pollution free environment. In Madhya Pradesh, the State Department of Agriculture has launched a massive programme in 1990 to popularize the use of organic farming practices in cereals, pulse and oil seed crops. A special position of Deputy Director, Organic Farming has also been created with its head quarter at Indore, to design and implement the strategies for the purpose (Saxena *et al.* 2000).

In Madhya Pradesh, organic farming is being implemented under the guidance of a team of experts consisting of scientists, environmentalists and food management personnel in 1565 villages. Nutrients to the crops are provided through green manuring, composts, phospho-composts and fermented preparations prepared from cow dung and urine. Pests are managed through the use of neem and cow urine based fermented preparations. Eight different ways of composting are recommended in Madhya Pradesh. They are the Indore method, NADEP compost, NADEP phospho-compost, Vermi compost, Bhabhut amrit pani, Amrit sanjeevani, Pitcher khad, Biogas slurry, Green manures and Bio fertilizer (Anonymous 2010). The Madhya Pradesh State Department of Agriculture has started advocating organic farming practices on major crops of the area, but it has been observed that farmers are not adopting the recommended organic farming practices. Hence with this background the present study “**A Study on Knowledge and Adoption of Organic Farming Practices among the farmers in Sehore District (M.P.)**” has been designed with the following objectives.

Objectives:

1. To study the socio-personal, economical and communication attributes of the respondents.
2. To find out the extent of knowledge and adoption of the respondents regarding organic farming practices.
3. To analyze the association between adoption of the respondents regarding organic farming practices and their socio personal, economical and communication attributes.
4. To determine the constraints experienced by the respondents in adoption of organic farming practices and suggest the ways to overcome them.

Significance of the study:

With increasing population, our compulsion would be not only to stabilize agriculture production, but also to increase it further in sustainable manner. During Green Revolution, with high inputs was production has reached a plateau and is now sustained with diminishing return of falling dwindles. Thus, a natural a balance needs to be maintained at all cost for existence of life and prosperity. The obvious choice for that would be more relevant in the present era, when these nonrenewable agrochemicals produced from fossil fuel, are in diminishing availability. It may also cost heavily on our foreign exchange in future. All agricultural systems disrupt the natural environment to some extent, while organic agriculture aims to minimize the disruption and to enhance natural biological cycles. For instance organic farming emphasizes the importance of a healthy soil to promote a diverse biological population, including earth and microorganism such as fungi and bacteria that are beneficial to plants.

Looking to importance of organic farming in farmer's economy the development agencies have come forward for development of organic farming on farmer's fields. In spite of all efforts, there seems to be a wide gap between organic farming technology available and its adoption in farmer's field. It is in

this context that present study was planned to investigate the efforts made in this direction to know the status of knowledge and adoption of organic farming practices by the farmers.

Limitations of the Study:

1. The study was exploratory in nature and conducted in limited village and limited farmers in one district Sehore only.
2. The findings of the study are based on individual research work and may have limited generalization.
3. The study was carried on micro level; hence, the findings will not be generalized abroad it is only applicable to the research adjoining area only.
4. The study was restricted to few variables only due to limited time and resources. The variables were measured by putting questions to each organic farming user only.
5. The conclusions are based on the data provided by the selected farmers therefore, validity and reliability depends how honestly, they provided the information.

CHAPTER II

REVIEW OF LITERATURE

Further is the manifestation of the past. So past research studies would pave the way for the further researchers. It also provides a basis to theoretical framework in addition to helping researcher to get an insight in to methods and procedures. Thus, a comprehensive review of the literature is an essential and an eventual part of any investigation. The purpose of this chapter is to review the extent of knowledge and adoption of recommended organic farming practices and identify the factors, which directly or indirectly influence in adoption of organic farming practices among the farmers.

Hence, the review is focused on finding and a theory related to organic farming practices, adoption behaviour of farmers and comprises the following:-

1. Knowledge of the farmers regarding organic farming techniques.
2. Adoption of the farmers about organic farming techniques.
3. Constraints in adoption of organic farming techniques.

1. Knowledge of the farmers regarding organic farming techniques:

Juliana *et.al.* (1991) stated that the majority of cotton growers had medium level of knowledge regarding recommended integrated pest management practices of cotton crop.

Gyawati *et.al.* (1996) stated that the farmers of Managalpur VDC and Mukundpur VDC were traditionally following integrated approach of chemical cultural/mechanical and indigenous knowledge of plant protection for the control of crop pests.

Bhairamkar *et.al.* (1998) conducted a study on knowledge level of farmers about integrated pest management programme in Dapoli, Mandagad and Khed tehsil of Ratnagiri district. The study indicated that there was a scope for improving the knowledge of farmers regarding integrated pest management technology for rice crop.

Barkar *et.al.* (2000) concluded that knowledge of bio-fertilizers was found dependent on the independent characteristics age, land holding, annual income, socio economic status, scientific orientation, mass media exposure and extension contact and cosmopolitaness characteristics of the farmers. It also conducted a study on characteristics of farmers influencing their knowledge about use of bio-fertilizer in 15 village of Nagpur Panchayat Samiti, Nagpur of Maharashtra. The study revealed that majority of the respondents (58.67%) had knowledge about the use of bio-fertilizer to the moderate level, followed by 22.67 per cent of them having high level of knowledge and 18.66 per cent of them having low level of knowledge.

Chapke (2000) conducted a study on knowledge and adoption of farmers about bio-control measures in Akola district of Maharashtra state and found that most of the farmers were mediocre in recession of knowledge about bio-control practices.

Jain and Bhattacharya (2000) conducted a study on farmers' involvement in bio-fertilizer demonstration and promotion campaign in Vidharbha region of Maharashtra. It was found that there were needs for extension work through demonstration for promotion of bio-fertilizer so that farmers can know the impact of the product especially on their own field.

Kalra and Zinia Hundal (2008) reported that the present study is an endeavour to assess and monitor the response of Punjab farmer towards the contribution of vermiculture in agriculture. The results indicate that the farmer is aware of the change in farming practices and is updated in technical know-how. Most of the respondents (65%) received knowledge from Punjab Agricultural University as well as from the Department of Agriculture, Punjab. The operational land under vermiculture ranged from 0.2 ha to 4.0 ha and 40 per cent of the respondents had adopted 0.2-0.8 ha under practice. Most of the respondents (55%) were new entrants having one year of experience in vermiculture. Until more is known of the activities, needs and response of the farmers towards vermiculture, the potential of this practice in organic farming

cannot be fully exploited.

Naik *et.al.* (2009) reported that organic farming practices are new to the farmers and hence, the knowledge level are low in most of the practices. the farmer need to be made well aware about the use of such practices so that the basic concept of organic farming and its application part could be made well know to the farmers.

2. Adoption of the farmers about organic farming techniques.

Supe (1969) reported that scientific orientation significantly contributed towards rational behaviour. It is also stated that the management orientation was positively associated with rational decision making ability of the farmers.

Nandapurkar (1980) stated that innovativeness has taken second position explaining the variance of entrepreneurship behaviour of small farmers.

Sharma (1986) revealed that maximum respondents had small to medium size of family, high social participation and low to medium size of family, high social participation and low to medium source of information. He further reported that there was no relationship between social participation and caste of respondents with the level of adoption of organic farming practices.

Juliana *et.al.* (1991) reported that mass media exposure was positively and significantly associated with extent of adoption.

Jirli and Gangadharappa (1997) stated that innovation proneness was significantly related with overall adoption level of integrated pest management practices.

Saxena and Singh (1997) conducted a study on training needs of agriculture extension officers in organic farming technology at JNKVV College of Agriculture, Indore. It was recorded that most of the officers expressed the keen desire and need for training in bio-fertilizer, bio-pesticides and rain water management in addition to other area of organic farming to enhance crop

production.

Shinde *et.al.* (1997) stated that majority of the cotton growers did not adopt the mechanical and biological practices of integrated pest management programme.

Krishnamurthy and Veerabhadraiah (1999) reported that there was significant difference between trained and untrained farmers with respect to mean adoption score.

Kalaskar *et.al.* (1999) reported that education and size of land holding were positively and significantly correlated with adoption of integrated pest management practices.

Chapke (2000) studied the knowledge and adoption of farmers about bio-control measures in Akola district of Maharashtra and concluded that most of the farmers were mediocre in possession of knowledge about bio-control practices and its adoption by them.

Rangantha *et.al.* (2001) conducted study on adoption of organic farming practices by small farmers in Srirangaptna Taluk of Mandya District in Karnataka. The study revealed that nearly half of the small farmers 49 per cent were medium adopters, while 30 per cent and 21 per cent of them were low and high adopters respectively, of organic farming practices in rice cultivation.

Saxena and Singh (2000) conducted a study on adoption of organic farming practices by farmers of Malwa region in village Joshiguradia, where the extension wing of JNKVV college of Agriculture, Indore was working. The finding concluded that the farmers were ready to adopt the environmentally safe organic farming practices, the level of adoption can be further increased by giving them adequate training and necessary skill for the use of different types of organic farming practices. It also observed that the age, education, land holding, number of animals owned, extension contact of farmers and mass media exposure had positive relationship with adoption of organic

farming practices.

Ranganatha *et.al.* (2001) revealed that out of 16 sociophysical characteristics selected for study, only six characteristics (education, mass media exposure, extension participation, innovation proneness, scientific orientation and risk orientation) were having significant relationship with the adoption level of small farmers.

Khan *et.al.* (2002) made a study to know the adoption pattern of Eco-friendly technologies (EFTs) by rice growers which was conducted in Kondubhotlapaten village of Guntur district (A.P.). Majority of the respondents belonged to medium and low level adoption of EFTs in rice cultivation. Practice-wise adoption pattern of EFTs was also studied. Among the practices, green manure application and hand weeding were found per cent adoption.

Rao and Mathur (2002) studied the association with selected independent variables with the extent of adoption of algal bio-fertilizer technology. It was indicated that about fifteen variables were significant and positively associated with the extent of adoption. All the socio-psychological variables, attitude and knowledge of algal bio-fertilizer technology, risk orientation and innovative proneness were found to be positively associated with extent of adoption.

Kushwaha (2003) concluded that the maximum percentage of respondents were from young age group, medium to high information seeking behaviour and knowledge about organic farming and had low livestock possession. He further reported that education, size of land holding, livestock possession, knowledge about organic farming, scientific orientation, information seeking behaviour, mass media exposure were showing significant and positive association with level of adoption of organic farming practices.

Loganadhan and Singh (2003) conducted a study on adoption of organic and found that education was the strongest contributing factors for a

farmer to adopt organic farming. Therefore, more number of educated farmers may be more aware of the benefits of organic farming and health hazards of contaminated food, so that they practices organic farming at least on a limited area. Further, environmental and financial motives were found to be the primary motives behind the farmers' conversion to organic farming, other environmental benefits should also be brought to the notice of conventional farmers.

Saxena and Kushwaha (2004) conducted a study on adoption of organic farming practices in which the majority of the respondents had adopted the practices like seed inoculation, application of FYM/NADEP compost, selection of good quantity seeds, out of ten practices of IPM. Similarly, hand weeding, summer ploughing, use of neem oil, use of neem leaf extract, installation of bird perches and use of rotated/fermented curd milk were popular for IPM. It was also suggested that training to farmers, demonstrations on farmers' field, visits on organic farming practices will motivate farmers to a great extent for its immediate adoption.

Kanel (2005) revealed in his study that the maximum percentages of respondents were having marginal to small size of land holding. Low to medium scientific orientation and medium to high level of adoption of organic farming practices; having medium mass media exposure and low to medium contact with extension agencies. He further concluded that the size of land holding, mass media exposure and livestock possession were significantly associated with the level of adoption of organic farming practices by the respondents.

Singh (2005) concluded that the majority of the respondents were from young age group, education up to middle school, earning medium to high annual income, low livestock possession, having medium to high economics motivation and level of adoption organic farming practices and medium to high information seeking behaviour, mass media exposure and low to medium contact with extension agencies. He further concluded that the size of land

holding, mass media exposure and livestock possession were significantly associated with the level of adoption of organic farming practices by the respondents.

Patel (2007) found that caste and social participation was no significant association with the adoption of organic farming technology.

Sharifi *et.al.* (2008) reported that a study was conducted to find out the socio-psychological characteristics of farmers in the adoption of organic farming practices in coconut-based homesteads of the humid tropics. Multistage random sampling technique was followed to select 105 'coconut based homestead farmers' in Thiruvananthapuram district of Kerala state, India. A pre-tested structured interview schedule was administered to elicit data. The study revealed that the farmers' socio-psychological characteristics such as education, innovativeness, risk orientation, market perception, self-confidence, information seeking behavior, awareness, knowledge and attitude towards organic farming practices have significant correlation with their adoption behaviour.

Tarde *et.al.* (2008) reported that a total of 166 pomegranate growers from Sangola tahsil, Solapur district, Maharashtra, India, were interviewed to determine the level of knowledge and adoption of organic pomegranate cultivation in the area. The majority (88.0%) of the respondents had sufficient knowledge regarding the use of neem extract for pest control and optimum use of water to maintain sufficient moisture conditions in the root zone. The percentage of growers with knowledge on biological mulch application before the onset of monsoon and green manure application varied from 60 to 70%. The level of application of practices was lower than the degree of knowledge of such practices. The majority of the farmers (62.93%) used compost. Most of the growers used neem extract for pest control (90.52%). However, a lower percentage of the growers applied green manures (40.51%) and biological mulch (34.48%). Most of the growers indicated that the major constraints in organic pomegranate cultivation were the lack of immediate results with

regard to the improvement of quality and yield, and unavailability of organic manures and biofertilizers. Other constraints were the shortage in farmyard manure (78.45%), lack of technical knowledge (76.72%), absence of a recommended technology (75.00%) and insufficient irrigation (68.11%).

Osari (2011) reported that majority of the respondents 55.56 per cent had medium adoption level of organic farming practices followed by 32.22 per cent had low and, 12.22 per cent had high adoption level. Thus, it may be concluded that most of the respondents had medium adoption level of organic farming in study area followed by low and high.

3. Constraints in adoption of organic farming practices:

Saxena and Singh (2000) studied the problems faced by the farmers while following while following organic farming practices. Unavailability of good quality culture at the time of sowing had been a major problem expressed by 75 per cent farmers, followed by lack of knowledge and skill about the improved methods of compost making (63%) unavailability expressed by 44 per cent farmers.

Ranganatha *et al.*(2001) identified the problem encountered by small farmers in practices organic farming in rice. More cost and risk involvement in getting organic manures, lack of ready package for growing rice organically and lack of knowledge on crop rotation, water management, integrated nutrient management and biological control of pests and disease were the major problems faced by a majority of small farmers in adoption organic farming practices in rice cultivation.

Bhople and Borkar (2002) studied the constraints faced by the farmers in adoption of bio fertilizers. It was observed that non availability of bio fertilizers in nearby market, lack of knowledge about quantity and methods of use of sticking agent for seed inoculation with bio-fertilizers, lack of guidance about seed inoculation and non availability of bio fertilizers at appropriate time were the major constraints in adoption of bio fertilizer by the farmers.

Jain and Bhattacharya (2002) observed five constraints in adoption of organic farming technology. Majority of the respondents (68%) reported non-awareness about bio-fertilizer products. Other constraints were lack of practical oriented training (64%), lack of handling skill (56%), lethargy due to cumbersome techniques (54%), lack of confidence on bio-fertilizer input and poor quality of bio-fertilizers, lack of bio-fertilizer supply centre in village were also reported by the respondents.

CHAPTER III

MATERIALS AND METHODS

Every research carried out on scientific line should have a research design to be applied as per the stated problems. For this, in present study a design has been drawn for classification of research method adopted. This chapter involves various steps applied to the study of the problem.

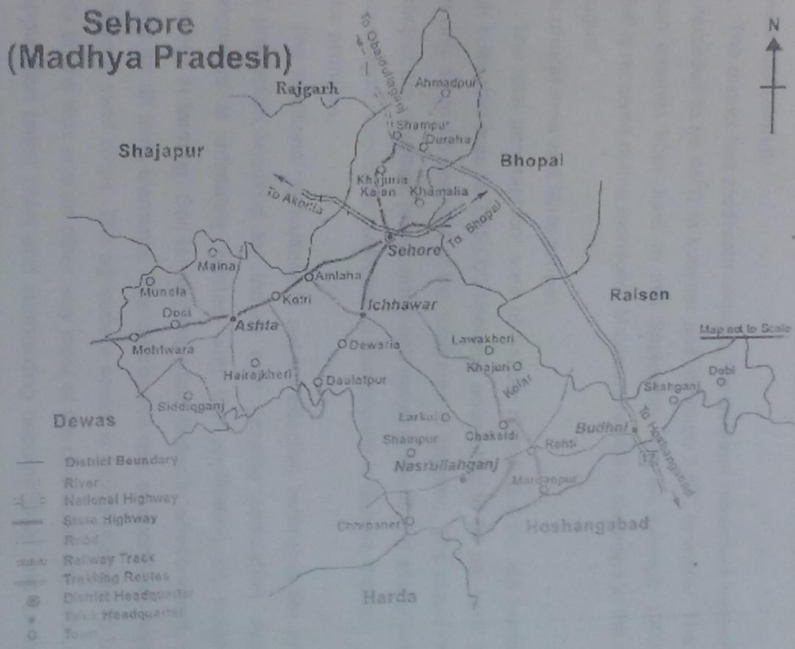
This chapter deals with the methods and procedures used for the selection of universe, collection and analysis of the data required for the study as per the stated objectives. It also illustrates the methods used for the analysis of data and tests applied for assessing the association between independent variables and dependents variables. In this chapter, the require matter was presented in various steps that were adopted in study process.

- I. Location of study
- II. The problem
- III. Variables and their measurements
- IV. Concept and operationalization
- V. Hypothesis
- VI. Sampling design
- VII. Selection of the respondents
- VIII. Method of data collection
- IX. Presentation of data
- X. Statistical analysis

I. Location of study:

Attempt has been made to discuss the background information about the district covered under this study. This is essential so that researchers can correlate the finding with the prevailing conditions under study. The study was conducted in Sehore district, Madhya Pradesh. There are five blocks in the district Sehore i.e. Sehore, Ichhawar, Ashta, Budhni, and Nasrullaganj. The district Sehore lies between latitude 22⁰46" to 23⁰40" North and longitude 76⁰22" to 78⁰57" East. The district is situated at 1500 feet above sea level.

Sehore (Madhya Pradesh)



It is surrounded by Dewas, Shajapur, Bhopal and Hoshangabad district respectively.

Physical features:

The district lies mostly in the Vindhyan Plateau which is slopping towards the south. The river Narmada separates Sehore from the Hoshangabad districts.

Climate and rainfall:

The district has moderate climate. The average maximum temperature was recorded to be 45⁰C in summer and minimum 2.8⁰C in winter. The rainy season extends from June to mid September. On an average 1000 mm. rainfall is received during monsoon. Maximum rainfall is recorded in the month of August.

Agricultural area and Main crops:

The total geographical area of Sehore district is 6,56,368 hectares of which cultivable area is 3,55,000 hectares accounting to 54 per cent, among them only 12 to 18 per cent of the total area is irrigated. The major crops of the district are soybean, jowar, arhar and maize in kharif and wheat and gram in rabi season. Vegetable cultivation is also popular in Sehore district.

II. The problem:

The traditional agriculture is not an effective technique for adequate food production required for India's ever growing population. Agriculture development is intimately related with the application of science and technology in farming. Soil is very important factor in environment, which is the sink for all toxic elements. The successive use of chemicals has led to decrease in yield crops. The agriculture sector is facing problem to boost soil fertility in one way and on other way most of the chemicals are toxic in nature on application entire plant and surrounding become toxic and contaminated with residue of used chemicals. Organic farming is the agricultural system which aims at cultivation of land in such a way that the soil is kept dynamic with its living activities in good health and at the same time keeping the environment clean, maintaining ecological balance and providing stability to

production level with out polluting the soil, water and air. Looking to benefits of organic farming, development agencies started to disseminate this technology to the farmer's field. It is therefore, felt necessary to investigate the level of knowledge and adoption as well as the factors related to adoption of organic farming system by the farmers in study area.

III. Variables and their measurements:

Keeping in view the objectives of the study and consultation with literature and experts, the following variables was selected.

A- Independent variables

I- Socio –personal variables

1. Age
2. Education status
3. Farming Experience

II-Economic variables

4. Farm size
5. Total annual income
6. Live stock possession

III-Communication variables

7. Information source utilization
8. Extension contact
9. Mass media exposure

B – Dependent variables:

1. Knowledge level of organic farming practices
2. Adoption of organic farming practices

IV. Concept and operationalization:

Independent variables:

Socio–personal variables

Socio personal variables included age, education stats and farming experience. The mesurment of these variables are as follows:

Age:

Age of the respondents was measured as the number of full years completed by the respondents at the time of data collection. The respondents

were grouped into three groups, as young age, middle and old age group on the basis of score allotted as follows.

S.No.	Category	Scores
1	Young (20-30)	1
2	Middle (31-40)	2
3	Old (41-50)	3

Education:

Education was operationalized as the number of years of formal schooling attained by respondents. The information pertaining to the formal education was collected by asking the respondents to state their level of education. The literacy status was considered as Illiterate, Primary education, Middle education, Higher secondary education and college level and accordingly score was allotted as 0, 1, 2, 3 and 4. According to educational level of respondents, the mean and S.D. were worked out and the respondent were grouped in three categories as low, medium and high on the based of Mean \pm S.D.

S.No.	Category	Scores
1.	Low	Mean – S.D.
2.	Medium	Mean \pm S.D.
3.	High	Mean +S.D.

Farming Experience:

Farming experience in present study was operationalization as the number of completed years of experience in farming. The actual number of years of experience was considered as the score 1 for each succeeding years. The respondents were classified in to three categories as low, medium and high with using Mean \pm S.D.

S.No.	Category	Scores
1.	Low	Mean – S.D.
2.	Medium	Mean ± S.D.
3.	High	Mean +S.D.

Economic variables

Economic variables included farm size, total annual income and livestock possession. The measurement of these variables are as follows:

Farm size:

Farm size means the total area cultivated by the respondent. It was measured by number of hectares of land cultivated by the respondents. The respondents were classified into three groups viz. small (upto 2 hectare), medium (2-5 hectare) and large (above 5 hectare).

S. No.	Category	Scores
1	Small size (up to 2 ha.)	1
2	Medium size (2-5 ha.)	2
3	Large size (above 5 ha.)	3

Total Annual Income:

Total annual income was operationalized as the total earning of the family in terms of money including farm and off-farm income per annum. It was measured by asking an open-ended question. The respondents were categorized on the basis of their income into three groups i.e. low (upto Rs. 50000), medium (Rs.50000 to Rs.100000) and high (above Rs.100000).

S. No.	Category	Scores
1	Low (upto Rs. 50000)	1
2	Medium (Rs.50000 to Rs.100000)	2
3	High (above Rs.100000)	3

Livestock possession:

The variable was operationally defined, as number of animals owned by the respondents. The number of animals possesses was given weighted 1 score for each animal and the total score computed to arrive at the livestock possession. The respondents were categorised into three groups as small, medium and large on the basis of Mean \pm S.D.

S. No.	Category	Scores
1	Small	Mean- S.D.
2	Medium	Mean \pm S.D.
3	Large	Mean+S.D.

Communication variables

Comunicational variables included information sources utilization, extension contant and mass media exposure. The mesurment of these variables are as follows:

Information source utilization:

For any action or behaviour of individual got inspiration first. It was thought essential to know the different types and number of sources from which farmers got inspiration for introducing new technology on their farm. This attribute have 11 statements. The responses of the respondents were obtained on 3 point continuum i.e. not at all, some times and always. The scoring was done in the order of 0,1 and 2 respectively for positive statement

and reverses for negative statement. On the basis of mean \pm SD it was categorized into three categories as below:

S. No.	Category	Scores
1	Low	Mean- S.D.
2	Medium	Mean \pm S.D.
3	High	Mean+ S.D.

Extension Contact:

The degree of extension contact was measured in terms of frequency of contact with various categories of extension personnel. This attribute have 6 statements. The responses of the respondents were obtained on 3 point continuum i.e. not at all, some times and always. The scoring was done in the order of 0,1 and 2 respectively for positive statement and reverses for negative statement. On the basis of mean \pm SD it was categorized into three categories as below:

S. No.	Category	Scores
1	Low	Mean- S.D.
2	Medium	Mean \pm S.D.
3.	High	Mean+ S.D.

Mass Media Exposure:

Mass media exposure is defined as the nature and frequency of farmers' involvement in different mass media such as agricultural magazines and pamphlet, radio, television and other personnel etc. This attribute have 8 statements. The responses of the respondents were obtained on 3 point continuum i.e. not at all, some times and always. The scoring was done in the order of 0,1 and 2 respectively for positive statement and reverses for negative statement. On the basis of mean \pm SD it was categorized into three categories

as below:

S. No.	Category	Scores
1.	Low	Mean- S.D.
2.	Medium	Mean± S.D.
3.	High	Mean+ S.D.

Dependent variables:

1. Knowledge level of organic farming practices:

Knowledge level of the farmers refers to the information they possess in respect of organic farming practices. To measure knowledge level of the farmers they were asked to reply different questions about concept of organic farming, use of organic manures and crop residues, bio-fertilizers, vermin-compost, weed management, pest management, diversification i.e. crop rotation, intercropping, trap cropping. The respondents were grouped in three categories viz. those with full knowledge, with partial knowledge, and those farmers having no knowledge are 2, 1 and 0 score was assigned respectively. On the basis of total score obtained, the respondents were categorized into three classes' i.e. low, medium and high level of knowledge on the basis Mean ± S.D.

S. No.	Category	Scores
1.	Low	Mean- S.D.
2.	Medium	Mean± S.D.
3.	High	Mean+ S.D.

2. Adoption of organic farming practices:

Rogers and Shoemaker (1971) conceptualized adoption, as decision to make full use of innovation as the best course of action available. In light of this, adoption, for the purpose of this study was operationally defined as adoption is the full scale use of package of practices of organic farming practices.

Measurement of adoption:-

The adoption level in respect of various prevailing organic farming practices in study area, the respondents were asked to tell the practices followed by them. The responses of the respondents were evaluated on the basis of correct and incorrect answers. The score of “2” were assigned to those respondents who adopt the particular practice completely. The partial adoption of practices were given “1” score while “0” score was given to those respondents who do not adopt the particular practice.

The total score which was obtained by the respondents on all the items of organic farming practices was adoption score. The raw score which were obtained by respondents and converted in adoption index score (AIS) by using the following formula.

$$\text{Adoption Index Score} = \frac{\text{Total score obtained by the respondent}}{\text{Maximum score that could be obtained}} \times 100$$

The range of adoption index score were divided into three group's viz. low, medium and high on the basis of Mean \pm S.D.

S. No.	Category	Scores
1.	Low	Mean- S.D.
2.	Medium	Mean \pm S.D.
3.	High	Mean+ S.D.

Prevailing organic farming practices in study area:

S.No.	Organic farming method
1.	For-in situ management
a.	Green manures
b.	Crop residues
c.	Poultry manure
d.	Urban and rural wastes
e.	Recycling the weed biomass
f.	Recycling the agro based industrial wastes
g.	Fish wastes
h.	Use of oil industry products
i.	Sewage farming
2.	Use of pre-digested /semi digested manure
a.	Farm yard manure
b.	Composting
c.	Other livestock wastes
d.	Biomass conversion of unconventional methods
3.	Bio-fertilizers
a.	N-fixing agents
b.	N-containing vegetation

c.	P-Solubilizing microbes
d.	Vermin-culture
e.	N-fixing crops and trees
4.	Cultural Methods
a.	Crop rotation with pulses for N-Fixation
b.	Intercropping with pulses for N- Fixation
c.	Minimum tillage for nutrient conservation
d.	Agro-forestry methods i.e. alley cropping
e.	Strip cropping and vegetative/live bunds
f.	Mulching cover crops.

Selected organic practices for the study:

- 1) Summer ploughing
- 2) Crop rotation
- 3) Inter culture
- 4) Seed inoculation
- 5) Use of insect resistant varieties
- 6) Application of FYM/NADEP compost
- 7) Use of light trap/pheromone trap
- 8) Installation of bird cage before flowering
- 9) Use of chilli/garlic
- 10) Use of neem leaf extract
- 11) Use of bio fertilizer
- 12) Use of hand weeding
- 13) Use of trichoderma S.P
- 14) Use of N.P.V.
- 15) Use of bio pesticide

V. Hypothesis:

General hypothesis:

There is an association between socio-personal, economic and communication variables of the farmers and their adoption behaviour.

Null hypotheses:

1. There is no association between age of farmers and their adoption behaviour.

2. There is no association between education of farmers and their adoption behaviour.
3. There is no association between farming experience of farmers and their adoption behaviour.
4. There is no association between farm size of farmers and their adoption behaviour.
5. There is no association between total annual income of farmers and their adoption behaviour.
6. There is no association between live stock possession of farmers and their adoption behaviour.
7. There is no association between information source utilization of farmers and their adoption behaviour.
8. There is no association between extension contact of farmers and their adoption behaviour.
9. There is no association between mass media exposure of farmers and their adoption behaviour.

VI. Sampling design:

The sample of the study has been selected through multi-stage random sampling technique. These are:-

Sehore district was selected purposively for the present study due to awareness and convenience of the researcher. There are total 5 blocks in Sehore district namely Sehore, Ashta, Ichhawar, Nasrullaganj and Budhani. Out of 5 blocks only one Sehore block was selected purposively for this study.

Selection of villages and respondents:

Sehore block comprises total 306 villages. Out of which a list of those villages where the organic farming programme has been adopted was prepared only five organic farming villages Jatakeda, Sonkach, Lalakedi, Sewaniya and Rafikganj were selected randomly. A village wise list of farmers adopting organic farming programme was prepared with the help of

information obtained from Department of Agriculture, Sehore and from each village 16 farmers were selected on the basis of random sampling method. The total respondents were 80 for this study.

VII. Method of data collection:

The primary data were collected with the help of interview schedule, which was prepared on the basis of objectives of the study. For the convenience of data collection, the interview schedule was prepared in Hindi. The interview schedule was pre-tested to sample of 10 farmers in non-sampled area before the actual collection of the data.

The secondary data were obtained from State Department of Agriculture and published journals and books. The data were collected through a well-structured and pre-tested interview schedule. The researcher personally met the respondents and explained to farmers about the purpose of this study. The data were collected and recorded in the interview schedule.

IX. Presentation of data:

The collected data were tabulated and presented in the form of tables, graphs and other needed form as per the stated objectives.

All the collected primary data will be related to the agricultural year 2011-12.

X. Statistical analysis:

The entire data was transformed into normal score for tabulation. The independence variables as well as dependent variables were categorized as low, medium and high or the term applicable so far on the basis of score obtained. Keeping in view the objectives of the study and to draw logical conclusion, statistical test i.e. frequency, percentage, mean and chi-square test was used for analyzing and interpreting the data.

i) Mean:

Mean will be obtained by dividing the sum of the scores by the total number of cases involved. The formula for determining mean is

$$\text{Mean} = \frac{\sum_{i=1}^n X_i}{n} \quad [i = 1, 2, 3, \dots, n]$$

Where,

- \bar{x} = mean
- $\sum X_i$ = sum of scores
- n = no. of cases

ii) Chi-square test:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Where,

- O = Observed frequency of respondents
- E = Expected frequency of same respondent
- \sum = Summation taken overall respondent

χ^2 is based on $(c-1) (r-1)$ degree of freedom and significantly tested at 5% level and 1% level.

CHAPTER IV

RESULT

The present chapter describes the results of the research, which has been organized according to the objectives of the study. In other words, this chapter deals with the empirical-statement of the objectives set fourth for the study. Organic farming can be called as sustainable agriculture. The main objective of organic farming is to develop and alternative strategy over chemical farming which would be guideline for working of biological process in natural echopractic, which may develop sustainable practices for guaranteed adequate food, production in the foreseeable future. The effects of organic farming practices looking after few years but farmers want to fetched higher remuneration at ones. That is reason the study of knowledge and adoption of organic farming practices is paramount important for future strategies.

For convenience of interpretation and presentation of findings it has been presented into following parts:

- A. Socio personal, economical and communication attributes of the farmers.
- B. Knowledge and adoption level of farmers regarding organic farming practices.
- C. Association between adoption level and independent variables of the respondents.
- D. Constraints in adoption of organic farming practices.
- E. Suggestions to over come the constraints.
- A. Socio personal, economical and communication attributes of the farmers.**

In the present study nine (09) independent attributes of the farmers in respect to adoption of organic farming practices have been taken into consideration. The data regarding socio personal, economical and communication attributes of the respondents were analyzed and their basic statistical values are presented as follows:

i. Socio-personal variables:

The socio-personal variables of the respondents include the characteristics of age, education status and farming experience. The socio-personal variables of the respondents are presented in table 4.1.

Table 4.1: Distribution of respondents according to their socio-personal variables.

S.No.	Attributes	Categories	No. of respondents (N=80)	Percentage
1	Age	Young (20-30)	22	27.50
		Middle (31-40)	30	37.50
		Old (41-50)	28	35.00
2	Education Status	Low	21	26.25
		Medium	22	27.50
		Higher	37	46.25
3	Farming experience	Low (5 year)	19	23.75
		Medium (10 year)	34	42.50
		High (above 10 year)	27	33.75

Age:

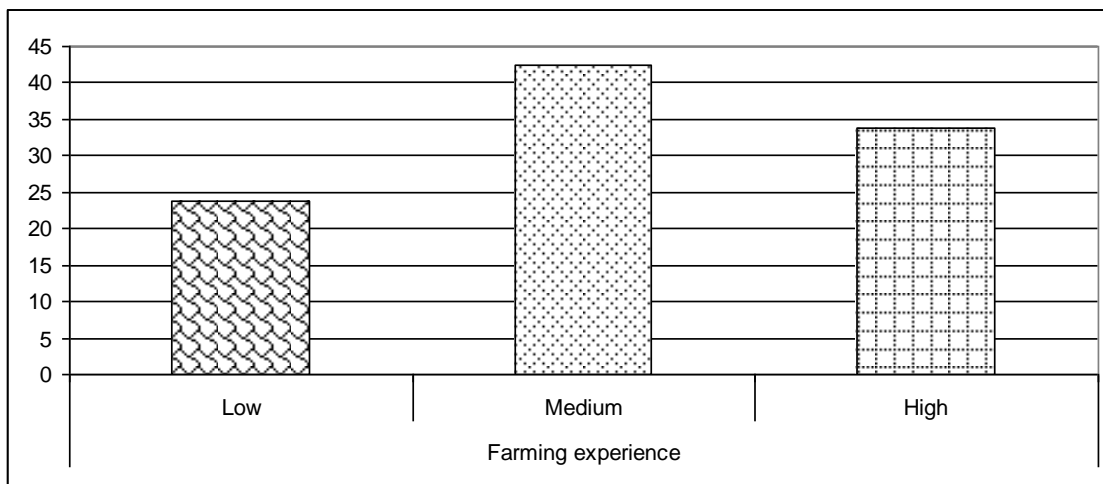
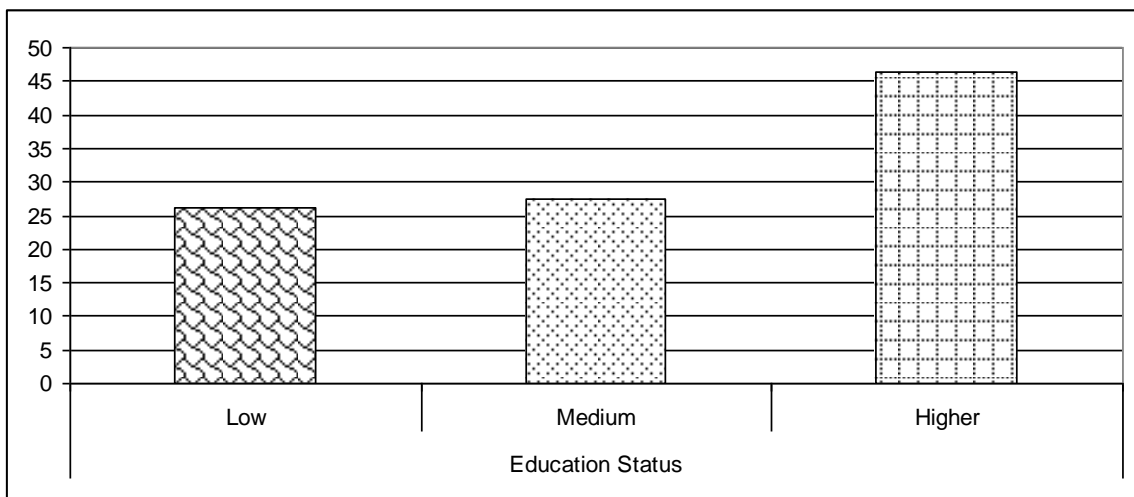
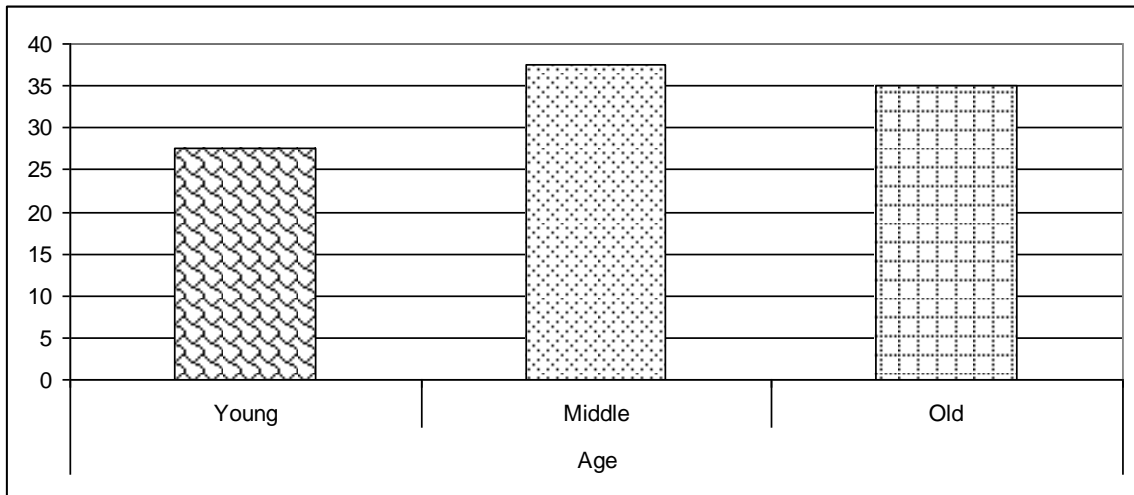
The age of respondents was considered as length or number of years passed away from birth. The data presented in Table 4.1 shows that out of the total respondents, the majority of respondents 37.50 per cent were of middle age group followed by old age group 35.00 per cent and young age group 27.50 per cent.

Thus, it can be concluded that in study area, the majority of respondents were in middle age group followed by old and young.

Education:

Education was considered as the number of years of formal education acquired by the respondents which may affect the adoption level. The data presented in Table 4.1 shows that out of the total respondents, the majority of respondents 46.25 per cent were of higher education group followed by medium education group 27.50 per cent and low education group 26.25 per cent. Thus, it can be concluded that in study area, the majority of respondents were found to higher education group followed by medium and low education.

Fig:1: Distribution of the respondents according to their socio personal variables



Farming experience:

Knowledge and adoption of respondents might be influenced by the experience of length of cultivation. The experience helps in developing maturity and ability to face varied situations. The data presented in Table 4.1 shows that out of the total respondents, the majority of respondents 42.50 per cent had medium farming experience followed by high 33.75 per cent and low farming experience 23.75 per cent.

Thus, it can be concluded that the majority of respondents had medium farming experience followed by high and low.

ii: Economical variables:

An economical variable of respondents includes farm size, total annual income and live stock possession. The economical variables of respondents are presented in table 4.2.

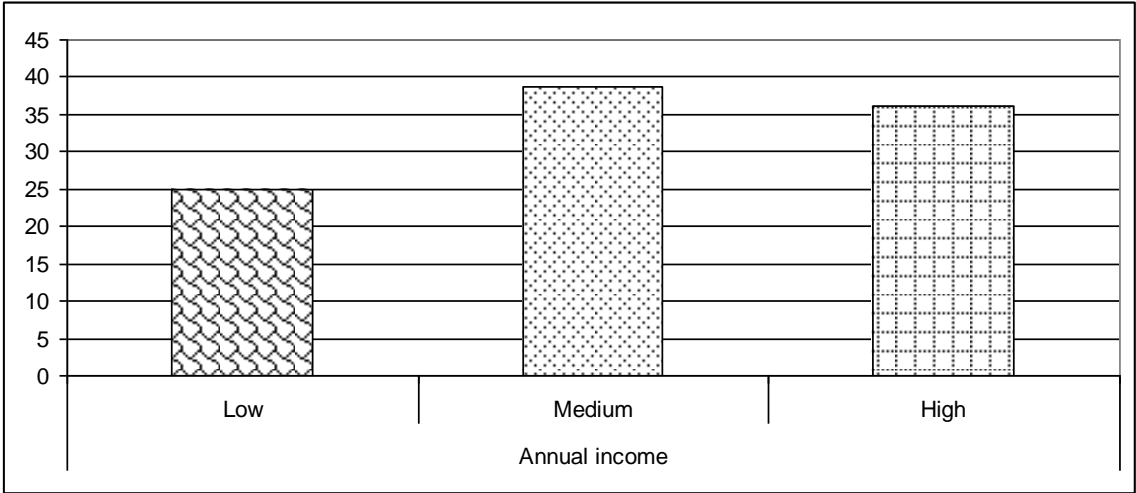
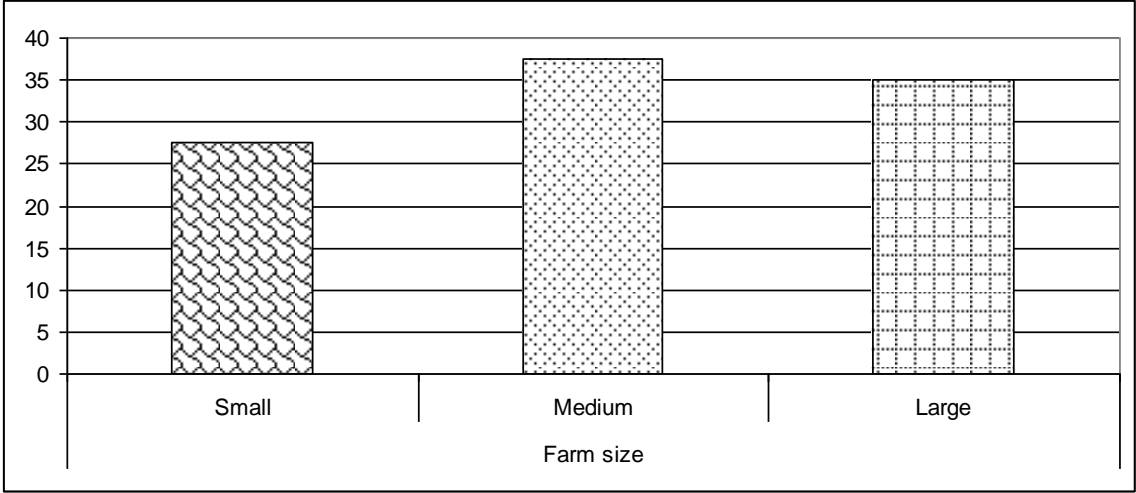
Table 4.2: Distribution of respondents according to their economical variables.

S.No.	Attributes	Category	No. of respondents (N=80)	Percentage
1.	Farm size	Small (2 ha.)	22	27.50
		Medium (2-5 ha.)	30	37.50
		Large (Above 5 ha.)	28	35.00
2.	Annual income	Low (upto Rs. 50000)	20	25.00
		Medium (Rs.50000 to Rs.100000)	31	38.75
		High (above Rs.100000)	29	36.25
3.	Livestock possession	Small (up to 5)	27	33.75
		Medium (5-10)	30	37.50
		Large (above 10)	23	28.75

Farm size:

Size of land holding is directly co-related with the size of land used in the production. The data presented in Table 4.2 shows that out of the total respondents, the majority of respondents 37.50 per cent had medium size of land holding followed by 35.00 per cent had large and 27.50 per cent had small size of land holding. Thus, it can be concluded that the majority of respondents had medium size farm followed by large and small size of farm.

Fig:2: Distribution of the respondents according to their Economic variables



Annual income:

For fostering and rapid acceptance of new technology, the respondents must inculcate the nature of annual income. The data presented in Table 4.2 shows that out of the total respondents, the majority of respondents 38.75 per cent had medium level of annual income followed by 36.25 per cent respondents were having high annual income and 25.00 per cent had low annual income.

Thus, it can be concluded that the majority of respondents were have medium annual income followed by high and low.

Livestock possession:

To enhance the organic farming practices in the field livestock rearing is must which are directly or indirectly may be concerned with the quantum of organic matter availability. The data presented in Table 4.2 shows that out of the total respondents, the majority of respondents 37.50 per cent had medium size of livestock herd followed by small herd 33.75 per cent and large livestock herd 28.75 per cent.

Thus, it may be concluded that the majority of respondents had medium size of livestock herd followed by small and large size of herd.

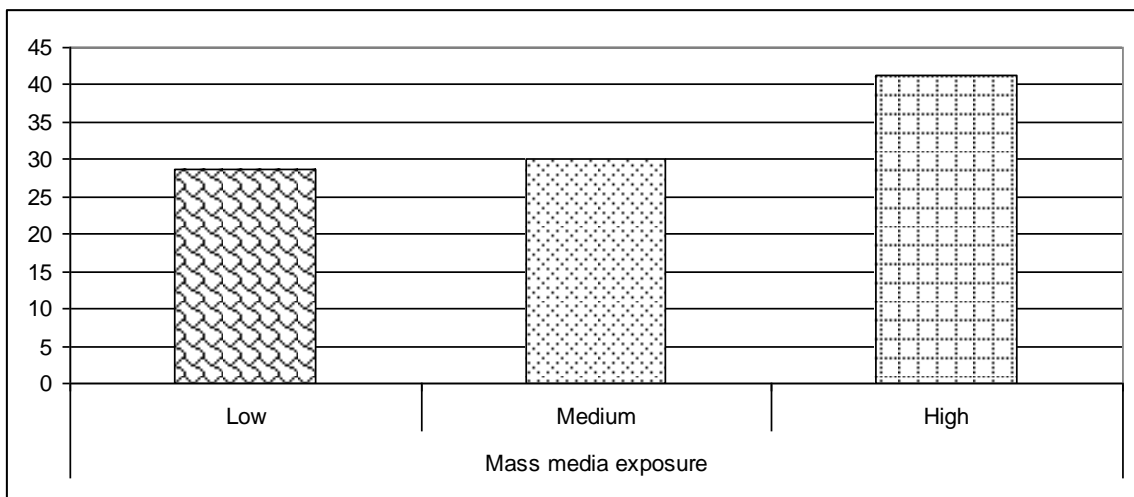
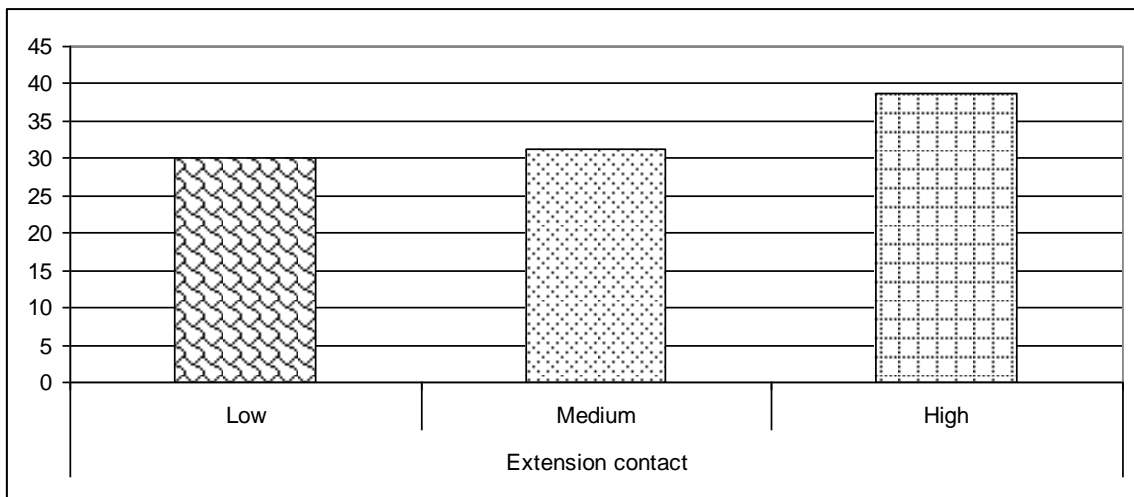
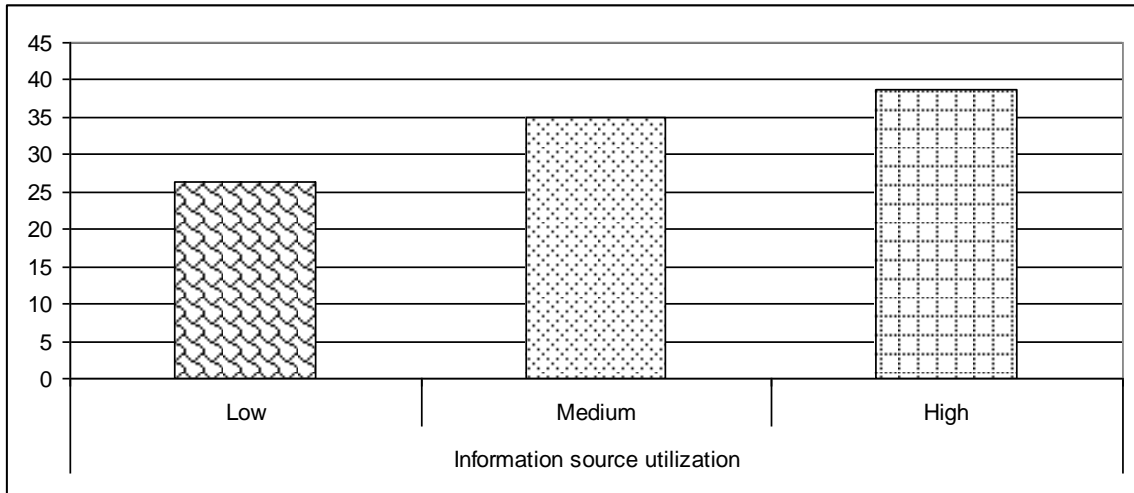
iii: Communication variables:

The communication variable of respondents includes information sources utilization, extension contact and mass media exposure. The communication variables of respondents are presented in table 4.3.

Table 4.3: Distribution of respondents according to their communication variables.

S.No.	Attributes	Category	No. of respondents (N=80)	Percentage
1.	Information source utilization	Low	21	26.25
		Medium	28	35.00
		High	31	38.75
2.	Extension contact	Low	24	30.00
		Medium	25	31.25
		High	31	38.75
3.	Mass media exposure	Low	23	28.75
		Medium	24	30.00
		High	33	41.25

Fig:3: Distribution of the respondents according to their Communication variables



Information sources utilization:

To taking decision or action an individual gets inspiration or share the knowledge and experiences first through many sources. The data presented in Table 4.3 shows that out of the total respondents, the majority of respondents 38.75 per cent have high information source utilization followed by medium 35.00 per cent and low information source utilization by 26.25 per cent.

Thus, it may be concluded that the majority of respondents had high information source utilization followed by medium and low.

Extension contact:

Extension contact may be considered as instrument for motivation to human being towards adoption of needed technology which required high decision making power. The data presented in Table 4.3 shows that out of the total respondents, the majority of respondents 38.75 per cent were found to high extension contact followed by medium extension contact category 31.25 per cent and low extension contact category 30.00 per cent.

Thus, it can be concluded that the majority of respondents were in high extension contact category followed by medium and low.

Mass media exposure:

Now days, the success of any programme or acceptance of new technology largely depends upon mass media exposure. The data presented in Table 4.3 shows that out of the total respondents, the majority of respondents 41.25 per cent were found in high mass media exposure category followed by medium category 30.00 per cent and low 28.75 per cent mass media exposure category .

Thus, it can be concluded that the majority of respondents were in high category of mass media exposure followed by medium and low.

This fulfils the objective No-1. Next part deals with knowledge and adoption level of farmers regarding organic farming practices.

B. Knowledge and adoption level of farmers regarding organic farming practices.

1. Knowledge level of organic farming practices:

Knowledge is generally understood as an intimate acquaintance of an individual with facts.

Table 4.4: Distribution of respondents according to their extent of knowledge in respect of organic farming practices.

S.No.	Components of organic farming practices	No. of respondents (N=80) (Extent of knowledge)			Mean score	Cumulative percentage	Rank
		Low	Medium	High			
1.	Summer ploughing	4 (5.00)	53 (66.25)	23 (28.75)	2.24	74.66	I
2.	Crop rotation	10 (12.50)	52 (65.00)	18 (22.50)	2.20	70.00	II
3.	Inter culture	8 (10.00)	48 (60.00)	24 (30.00)	2.20	73.33	III
4.	Seed inoculation	20 (25.00)	38 (47.50)	22 (27.50)	2.19	67.66	IV
5.	Use of insect resistant varieties	22 (27.50)	33 (41.25)	25 (31.25)	2.14	68.00	V
6.	Application of FYM/NADEP compost	10 (12.50)	45 (56.25)	25 (31.25)	2.10	73.00	VI
7.	Use of light trap/pheromone trap	8 (10.00)	48 (60.00)	24 (30.00)	2.06	73.33	VII
8.	Installation of bird cage before flowering	16 (20.00)	46 (57.50)	18 (22.50)	2.04	67.66	VIII
9.	Use of chilli/garlic	18 (22.50)	39 (48.75)	23 (28.75)	2.03	68.66	IX
10.	Use of neem leaf extract	18 (22.50)	48 (60.00)	14 (17.50)	2.03	65.00	IX
11.	Use of bio fertilizer	16 (20.00)	48 (60.00)	16 (20.00)	2.00	66.66	X
12.	Use of hand weeding	10 (12.50)	49 (61.25)	21 (26.25)	1.95	71.33	XI
13.	Use of trichoderma S.P	20 (25.00)	50 (62.50)	10 (12.50)	1.88	62.66	XII
14.	Use of N.P.V.	35 (43.75)	33 (41.25)	12 (15.00)	1.71	57.00	XIII
15.	Use of bio pesticide	40 (50.00)	30 (37.50)	10 (12.50)	1.63	54.33	XIV
16.	Overall (Average)	17 (21.25)	44 (55.00)	19 (23.75)	2.02	67.68	

(Figure in parenthesis shows the percentage of their respective total)

The data compiled the table 4.4 shows the extent of knowledge of respondents about the components of organic farming practices. There were components of organic farming practices and these are categorized in to low, medium and high knowledge categories.

It is evident from the table that regarding in summer ploughing the majority 66.25 percent respondents had medium knowledge, followed by 28.75 percent had high knowledge and 5.00 percent had low knowledge. The cumulative percentage knowledge of this particular practice was observed as

74.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding summer ploughing.

Crop rotation majority of the respondents 65.00 percent had medium knowledge, 22.50 percent had high knowledge and 12.50 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 70.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper crop rotation.

Inter culture majority of the respondents 60.00 percent had medium knowledge, 30.00 percent had high knowledge and 10.00 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 73.33 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper inter culture.

Seed inoculation most of the respondents 47.50 percent had medium knowledge, 27.50 percent had high knowledge and 25.00 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 67.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper seed inoculation.

Regarding use of insect resistant varieties most of the respondents 41.25 percent had medium knowledge, 31.25 percent had high knowledge and 27.50 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 68.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper insect resistant varieties.

Application of FYM/NADEP compost the majority of the respondents 56.25 percent had medium knowledge, 31.25 percent had high knowledge and 12.50 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 73.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium

extent of knowledge regarding proper application of FYM/NADEP compost.

Use of light trap/pheromone trap majority of the respondents 60.00 percent had medium knowledge, 30.00 percent had high knowledge and 10.00 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 73.33 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper use of light trap/pheromone trap.

Installation of bird cage before flowering majority of the respondents 57.50 percent had medium knowledge, 22.50 percent had high knowledge and 20.00 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 67.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper installation of bird cage before flowering.

Use of chilli/garlic most of the respondents 48.75 percent had medium knowledge, 28.75 percent had high knowledge and 22.50 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 68.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper use of chilli/garlic.

Use of neem leaf extract majority of the respondents 60.00 percent had medium knowledge, 22.50 percent had high knowledge and 17.50 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 65.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper use of neem leaf extract.

Use of bio fertilizer majority of the respondents 60.00 percent had medium knowledge, 20.00 percent had high knowledge and 20.00 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 66.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of

knowledge regarding proper use of bio fertilizer.

Use of hand weeding majority of the respondents 61.25 percent had medium knowledge, 26.25 percent had high knowledge and 12.50 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 71.33 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper use of hand weeding.

Use of trichoderma S.P. majority of the respondents 62.50 percent had medium knowledge, 25.00 percent had high knowledge and 12.50 percent had low knowledge. The cumulative percentage knowledge of the particular component was observed as 62.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of knowledge regarding proper use of trichoderma S.P.

Use of N.P.V most of the respondents 43.75 percent had low knowledge, 41.25 percent had medium knowledge and 15.00 percent had high knowledge. The cumulative percentage knowledge of the particular component was observed as 57.00 percent among the total respondents. Thus, it can be concluded that the respondents had low extent of knowledge regarding proper use of N.P.V.

Use of bio pesticide majority of the respondents 50.00 percent had low knowledge, 37.50 percent had medium knowledge and 12.50 percent had high knowledge. The cumulative percentage knowledge of the particular component was observed as 73.33 percent among the total respondents. Thus, it can be concluded that the respondents had low extent of knowledge regarding proper use of bio pesticide.

Further, the data of the above table shows that the average mean score of fifteen components of organic farming practices was 2.02. The mean score of summer ploughing 2.24 followed by inter-culture 2.20, use of light trap/pheromone trap 2.20, application of FYM/NADEP compost 2.19, use of hand weeding 2.14, crop rotation 2.10, use of chilli/garlic 2.06, use of insect resistant varieties 2.04, installation of bird cage before flowering 2.03, seed

inoculation 2.03 were higher than the average mean score i.e. 2.02. This means that the knowledge was higher in these ten practices as compared to other five practices which were use of bio fertilizer 2.00, use of neem leaf extract 1.95, use of trichoderma sp 1.88, use of NPV and use of biopesticide 1.63.

As per extent of knowledge of respondents ranked according to the components of practices, summer ploughing first ranked, Crop rotation second ranked, Inter culture third ranked, Seed inoculation fourth ranked, Use of insect resistant varieties fifth ranked, Application of FYM/NADEP compost sixth ranked, Use of light trap/pheromone trap seventh ranked, Installation of bird cage before flowering eighth ranked, Use of chilli/garlic and Use of neem leaf extract ninth ranked, Use of bio fertilizer tenth ranked, Use of hand weeding eleventh ranked, Use of trichoderma S.P twelfth ranked, Use of N.P.V. thirteenth rank and Use of bio pesticide fourteenth ranked.

The distribution of respondents according to their level of knowledge is presented in table 4.5.

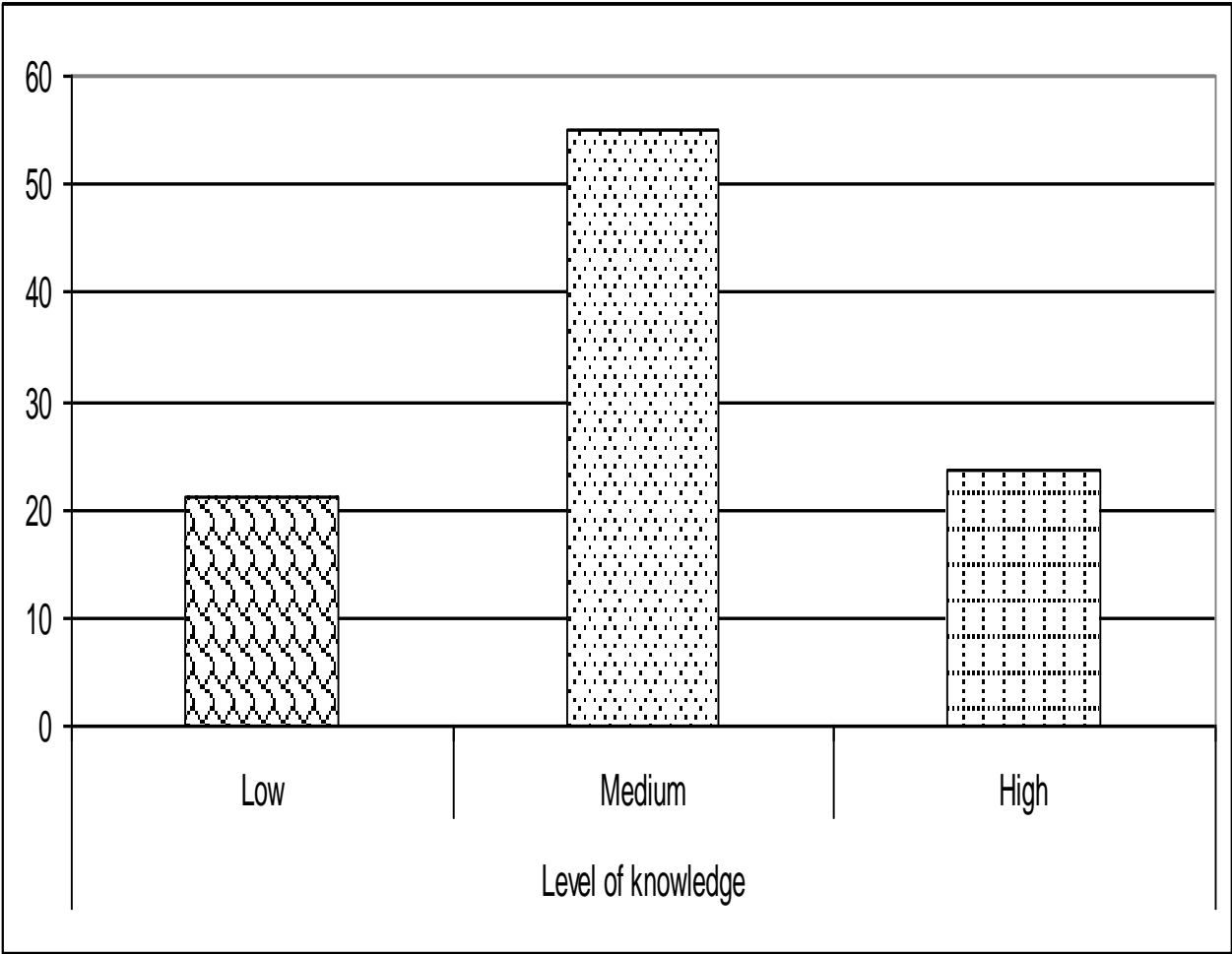
Table 4.5: Distribution of respondents according to their level of knowledge.

S.No.	Attributes	Category	No. of respondents (N=80)	Percentage
1.	Extent of knowledge	Low	17	21.25
		Medium	44	55.00
		High	19	23.75

The data presented in Table 4.5 shows that out of the total respondents, the majority of respondents 55.00 per cent had medium extent of knowledge followed by high knowledge 23.75 per cent and low knowledge 21.25 per cent.

Thus, it may be concluded that the majority of respondents were had medium level of knowledge followed by high and low knowledge.

Fig:4: Distribution of the respondents according to their extent of knowledge



2. Adoption level of farmers of organic farming practices.

Organic farming is constantly gaining momentum and contributing significantly towards the upliftment of the poor resources farmers as well as to general farm economy. Recognizing the importance of organic farming in farm economy and their contribution to protect from hazards it is necessary to motivate the farmers to adopt organic farming technology as well as maximum possible.

Table 4.6: Distribution of respondents according to their Extent of adoption of organic farming practices.

S.No.	Components of organic farming practices	No. of respondents (N=80) (Extent of adoption)			Mean score	Cumulative percentage	Rank
		Low	Medium	High			
1.	Summer ploughing	6 (7.50)	35 (43.75)	39 (48.75)	2.41	80.33	I
2.	Crop rotation	24 (30.00)	40 (50.00)	16 (20.00)	2.28	63.33	II
3.	Inter culture	12 (15.00)	34 (42.50)	34 (42.50)	2.28	76.00	III
4.	Seed inoculation	20 (25.00)	37 (46.25)	23 (28.75)	2.24	68.00	IV
5.	Use of insect resistant varieties	20 (25.00)	34 (42.50)	26 (32.50)	2.10	69.33	V
6.	Application of FYM/NADEP compost	10 (12.50)	38 (47.50)	32 (40.00)	2.08	76.00	VI
7.	Use of light trap/pheromone trap	28 (35.00)	36 (45.00)	16 (20.00)	2.06	61.66	VII
8.	Installation of bird cage before flowering	20 (25.00)	50 (62.50)	10 (12.50)	2.04	62.66	VIII
9.	Use of chilli/garlic	18 (22.50)	36 (45.00)	26 (32.50)	1.90	70.00	IX
10.	Use of neem leaf extract	15 (18.75)	45 (56.25)	20 (25.00)	1.88	68.66	X
11.	Use of bio fertilizer	38 (47.50)	39 (48.75)	3 (3.75)	1.85	52.00	XI
12.	Use of hand weeding	12 (15.00)	37 (46.25)	31 (38.75)	2.41	74.66	XII
13.	Use of trichoderma S.P	34 (42.50)	40 (50.00)	6 (7.50)	2.28	55.00	XIII
14.	Use of N.P.V.	43 (53.75)	28 (35.00)	9 (11.25)	2.28	52.66	XIV
15.	Use of bio pesticide	45 (56.25)	26 (32.50)	9 (11.25)	2.24	51.66	XV
16.	Overall (Average)	23 (28.75)	37 (46.25)	20 (25.00)	2.10	65.46	

(Figure in parenthesis shows the percentage of their respective total)

The data compiled in the table 4.6 shows the extent of adoption of respondents about the components of organic farming practices. There were components of organic farming practices and these are categorized in to low, medium and high adoption categories.

It is evident from the table that regarding in summer ploughing the majority 48.75 percent respondents had high adoption, followed by 43.75 percent had high adoption and 7.50 percent had low adoption. The cumulative percentage adoption of this particular practice was observed as 80.33 percent among the total respondents. Thus, it can be concluded that the respondents had high extent of adoption regarding summer ploughing.

Crop rotation majority of the respondents 50.00 percent had medium adoption, 30.00 percent had low adoption and 20 percent had high adoption. The cumulative percentage adoption of the particular component was observed as 70.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper crop rotation.

Inter culture majority of the respondents 42.50 percent had high adoption, 42.50 percent had medium adoption and 15.00 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 76.00 percent among the total respondents. Thus, it can be concluded that the respondents had high and medium extent of adoption regarding proper inter culture.

Seed inoculation most of the respondents 46.25 percent had medium adoption, 28.75 percent had high adoption and 25.00 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 68.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper seed inoculation.

Regarding use of insect resistant varieties most of the respondents 42.50 percent had medium adoption, 32.50 percent had high adoption and 25.00 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 69.33 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper insect resistant varieties.

Application of FYM/NADEP compost the most of the respondents 47.50

percent had medium adoption, 40.00 percent had high adoption and 12.50 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 76.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper application of FYM/NADEP compost.

Use of light trap/pheromone trap most of the respondents 45.00 percent had medium adoption, 35.00 percent had high adoption and 20.00 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 61.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper use of light trap/pheromone trap.

Installation of bird cage before flowering majority of the respondents 62.50 percent had medium adoption, 25.00 percent had high adoption and 12.50 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 62.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper installation of bird cage before flowering.

Use of chilli/garlic most of the respondents 45.00 percent had medium adoption, 32.50 percent had high adoption and 22.50 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 70.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper use of chilli/garlic.

Use of neem leaf extract majority of the respondents 56.25 percent had medium adoption, 25.00 percent had high adoption and 18.75 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 68.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper use of neem leaf extract.

Use of bio fertilizer most of the respondents 48.75 percent had medium adoption, 47.50 percent had low adoption and 03.75 percent had high

adoption. The cumulative percentage adoption of the particular component was observed as 52.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper use of bio fertilizer.

Use of hand weeding most of the respondents 46.25 percent had medium adoption, 38.75 percent had high adoption and 15.00 percent had low adoption. The cumulative percentage adoption of the particular component was observed as 74.66 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper use of hand weeding.

Use of trichoderma S.P. majority of the respondents 50.00 percent had medium adoption, 42.50 percent had low adoption and 7.50 percent had high adoption. The cumulative percentage adoption of the particular component was observed as 55.00 percent among the total respondents. Thus, it can be concluded that the respondents had medium extent of adoption regarding proper use of trichoderma S.P.

Use of N.P.V most of the respondents 53.75 percent had low adoption, 35.00 percent had medium adoption and 11.25 percent had high adoption. The cumulative percentage adoption of the particular component was observed as 52.66 percent among the total respondents. Thus, it can be concluded that the respondents had low extent of adoption regarding proper use of N.P.V.

Use of bio pesticide majority of the respondents 56.00 percent had low adoption, 32.50 percent had medium adoption and 11.25 percent had high adoption. The cumulative percentage adoption of the particular component was observed as 51.66 percent among the total respondents. Thus, it can be concluded that the respondents had low extent of adoption regarding proper use of bio pesticide.

Further, the data of the above table shows that the average mean score of fifteen components of organic farming practices was 1.96. The mean score of summer ploughing 2.41 followed by inter-culture 2.28, , application of

FYM/NADEP compost 2.28, use of hand weeding 2.24, , use of chilli/garlic 2.10, use of insect resistant varieties 2.08, use of neem leaf extract 2.06, seed inoculation 2.04 were higher than the average mean score i.e. 1.96. This means that the adoption was higher in these eight practices as compared to other seven practices which were crop rotation 1.90, installation of bird cage before flowering 1.88, use of use of light trap/pheromone trap 1.85, use of trichoderma sp 1.65, use of NPV bio fertilizer 1.58, and use of biopesticide 1.55.

As per extent of adoption of respondents ranked according to the components of practices, summer ploughing first ranked, Inter culture and Application of FYM/NADEP compost second ranked, Use of hand weeding third ranked, Use of chilli/garlic fourth ranked, Use of insect resistant varieties fifth ranked, Use of neem leaf extract sixth ranked, Seed inoculation seventh ranked, Crop rotation eighth ranked, Installation of bird cage before flowering ninth ranked, Use of light trap/pheromone trap tenth ranked, Use of trichoderma S.P eleventh ranked, Use of N.P.V. twelfth ranked, Use of bio fertilizer thirteenth rank and Use of bio pesticide fourteenth ranked.

Due to economic and safety point of view the great emphasis is being paid by both the scientists and extension workers to boost up agriculture production with the use of organic farming practices . The gain from organic farming is possible only when the farmers adopt this technology according to their preferences to develop self-sufficient agriculture practices which would relay as much as possible upon resources from within its own resources. The distribution of respondents according to their level of adoption of organic farming practices is presented in table 4.5.

Table 4.7: Distribution of respondents according to their level of adoption.

S.No.	Attributes	Category	No. of respondents (N=80)	Percentage
1.	Extent of adoption	Low	23	28.75
		Medium	37	46.25
		High	20	25.00

The data presented in table 4.7 indicated that the majority of respondents 46.25 per cent had medium extent of adoption of organic farming practices followed by 28.75 per cent had low and 25.00 per cent had high adoption level.

Thus, it may be concluded that the majority of respondents had medium adoption level of organic farming in study area followed by low and high.

This fulfill the objective No:2. Next part deals with association between adoption level and independent variables of the respondents.

4.3. Association between adoption level and independent variables of the respondents.

In order to study the influence of socio-personal, economical and communicational attributes of farmers on their over all adoption of organic farming practices, the values of X^2 were calculated for individual independent variable in relation to extent of adoption (dependent variable). These values are presented in respective tables.

Fig:5: Distribution of the respondents according to their extent of adoption

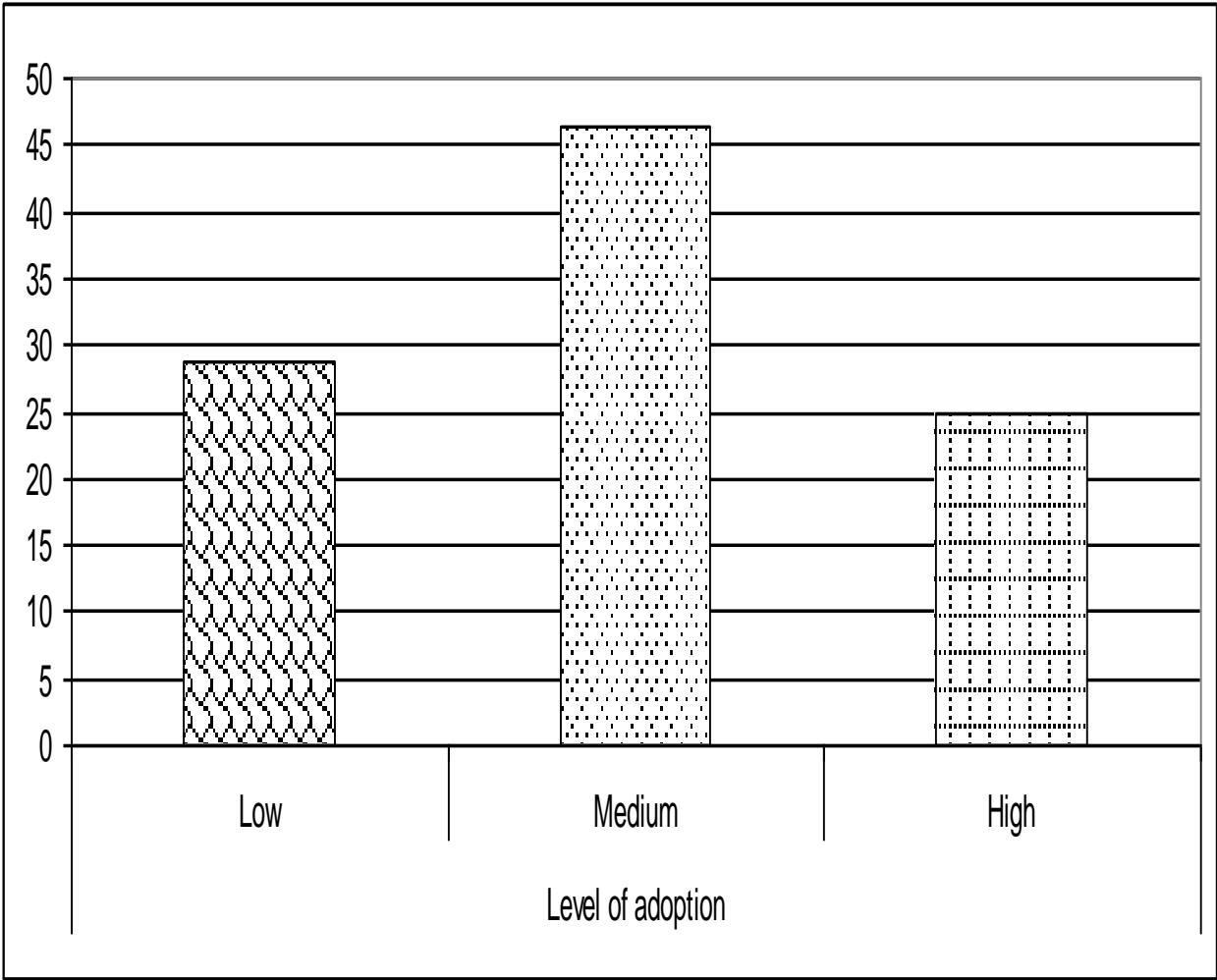


Table 4.8: Association between age and adoption of organic farming practices.

(No. of respondents)

Age categories	Level of adoption			Total
	Low	Medium	High	
Young	6 (27.27)	11 (50.00)	5 (22.73)	22 (100.00)
Middle	8 (26.67)	14 (46.67)	8 (26.67)	30 (100.00)
Old	9 (32.14)	12 (42.86)	7 (25.00)	28 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)
$X^2 = 9.6^*$				

Note:- Figure in parenthesis shows percentage to their relative total

* Significant at 5 per cent level of significance with 4 d.f.

The table 4.8 reveals that out of 22 respondents belongs to young age group, the maximum number of them 50.00 per cent found to medium level of adoption followed by 27.27 per cent found to low adoption and 22.73 per cent found to high adoption level of organic farming practices.

Out of 30 respondents belongs to middle age group, the maximum number of them 46.67 per cent found to medium level of adoption followed by 26.67 per cent found to low and high adoption level of organic farming practices.

Again out of 28 respondents belongs to old age group, the maximum number of them 42.86 per cent found to medium level of adoption followed by 32.14 per cent found to low adoption and 25.00 per cent found to high adoption level of organic farming practices.

The calculated chi-square value $X^2=9.6^*$ at 5 per cent level with 4 degree of freedom was found to be significant. This leads to the rejection of null hypothesis No.1. Hence, it may be concluded that age had an influence on adoption level of organic farming practices.

Table 4.9: Association between education and adoption of organic farming practices.

(No. of respondents)

Education categories	Level of adoption			Total
	Low	Medium	High	
Low	7 (33.33)	9 (42.86)	5 (23.81)	21 (100.00)
Medium	6 (27.27)	10 (45.45)	6 (27.27)	22 (100.00)
High	10 (27.03)	18 (48.65)	9 (24.32)	37 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)
$X^2 = 9.5^*$				

Note:- Figure in parenthesis shows percentage to their relative total

* Significant at 5 per cent level of significance with 4 d.f.

The table 4.9 reveals that out of 21 respondents belongs to low education group, the maximum number of them 42.86 per cent found to medium level of adoption followed by 33.33 per cent found to low adoption and 23.81 per cent found to high adoption level of organic farming practices.

Out of 22 respondents belongs to medium education group, the maximum number of them 45.45 per cent found to medium level of adoption followed by 27.27 per cent found to low and high adoption level of organic farming practices.

Again out of 37 respondents belongs to high education group, the maximum number of them 48.65 per cent found to medium level of adoption followed by 27.03 per cent found to low adoption and 24.32 per cent found to high adoption level of organic farming practices.

The calculated chi-square value $X^2=9.5^*$ at 5 per cent level with 4 degree of freedom was found to be significant. This leads to the rejection of null hypothesis No.2. Hence, it may be concluded that education had an influence on adoption level of organic farming practices.

Table 4.10: Association between farming experience and adoption of organic farming practices.

(No. of respondents)

Farming experience categories	Level of adoption			Total
	Low	Medium	High	
Low	6 (31.58)	8 (42.11)	5 (26.32)	19 (100.00)
Medium	9 (26.47)	16 (47.06)	9 (26.47)	34 (100.00)
High	8 (7.76)	13 (48.15)	6 (22.22)	27 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)

$\chi^2=9.5^*$

Note:- Figure in parenthesis shows percentage to their relative total

* Significant at 5 per cent level of significance with 4 d.f.

The table 4.10 reveals that out of 19 respondents belongs to low farming experience group, the maximum number of them 42.11 per cent found to medium level of adoption followed by 31.58 per cent found to low adoption and 26.32 per cent found to high adoption level of organic farming practices.

Out of 34 respondents belongs to medium farming experience group, the maximum number of them 47.06 per cent found to medium level of adoption followed by 26.47 per cent found to low and high adoption level of organic farming practices.

Again out of 27 respondents belongs to high farming experience group, the maximum number of them 48.15 per cent found to medium level of adoption followed by 29.63 per cent found to low adoption and 22.22 per cent found to high adoption level of organic farming practices.

The calculated chi-square value $\chi^2=9.5^*$ at 5 per cent level with 4 degree of freedom was found to be significant. This leads to the rejection of null hypothesis No.3. Hence, it may be concluded that farming experience had an influence on adoption level of organic farming practices.

Table 4.11: Association between farm size and adoption of organic farming practices.

(No. of respondents)

Farm size categories	Level of adoption			Total
	Low	Medium	High	
Small	6 (27.27)	11 (50.00)	5 (22.73)	22 (100.00)
Medium	8 (26.67)	14 (46.67)	8 (26.67)	30 (100.00)
Large	9 (32.14)	12 (42.86)	7 (25.00)	28 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)
$X^2 = 9.6^*$				

Note:- Figure in parenthesis shows percentage to their relative total

* Significant at 5 per cent level of significance with 4 d.f.

The table 4.11 reveals that out of 22 respondents belongs to small farm size group, the maximum number of them 50.00 per cent found to medium level of adoption followed by 27.27 per cent found to low adoption and 22.73 per cent found to high adoption level of organic farming practices.

Out of 30 respondents belongs to medium farm size group, the maximum number of them 46.67 per cent found to medium level of adoption followed by 26.67 per cent found to low and high adoption level of organic farming practices.

Again out of 28 respondents belongs to large farm size group, the maximum number of them 42.86 per cent found to medium level of adoption followed by 32.14 per cent found to low adoption and 25.00 per cent found to high adoption level of organic farming practices.

The calculated chi-square value $X^2=9.6^*$ at 5 per cent level with 4 degree of freedom was found to be significant. This leads to the rejection of null hypothesis No.4. Hence, it may be concluded that farm size had an influence on adoption level of organic farming practices.

Table 4.12: Association between annual income and adoption of organic farming practices.

(No. of respondents)

Annual income categories	Level of adoption			Total
	Low	Medium	High	
Low	5 (25.00)	9 (45.00)	6 (30.00)	20 (100.00)
Medium	9 (29.03)	15 (48.39)	7 (22.58)	31 (100.00)
High	9 (31.03)	13 (44.83)	7 (24.14)	29 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)

$$X^2 = 9.8^*$$

Note:- Figure in parenthesis shows percentage to their relative total

* Significant at 5 per cent level of significance with 4 d.f.

The table 4.12 reveals that out of 20 respondents belongs to low annual income group, the maximum number of them 45.00 per cent found to medium level of adoption followed by 30.00 per cent found to high adoption and 25.00 per cent found to low adoption level of organic farming practices.

Out of 31 respondents belongs to medium annual income group, the maximum number of them 48.39 per cent found to medium level of adoption followed by 29.03 per cent found to low and 22.58 per cent found to high adoption level of organic farming practices.

Again out of 29 respondents belongs to high annual income group, the maximum number of them 44.83 per cent found to medium level of adoption followed by 31.03 per cent found to low adoption and 24.14 per cent found to high adoption level of organic farming practices.

The calculated chi-square value $X^2=9.8^*$ at 5 per cent level with 4 degree of freedom was found to be significant. This leads to the rejection of null hypothesis No.5. Hence, it may be concluded that annual income had an influence on adoption level of organic farming practices.

Table 4.13: Association between livestock possession and adoption of organic farming practices.

(No. of respondents)

Livestock possession categories	Level of adoption			Total
	Low	Medium	High	
Small	8 (29.63)	13 (48.15)	6 (22.22)	27 (100.00)
Medium	9 (30.00)	13 (43.33)	8 (26.67)	30 (100.00)
Large	6 (26.09)	11 (47.83)	6 (26.09)	23 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)

$X^2 = 8.9$ N.S.

Note:- Figure in parenthesis shows percentage to their relative total
N.S.= Non significant

The table 4.13 reveals that out of 27 respondents belongs to small livestock possession group, the maximum number of them 48.15 per cent found to medium level of adoption followed by 29.63 per cent found to low adoption and 22.22 per cent found to high adoption level of organic farming practices.

Out of 30 respondents belongs to medium livestock possession group, the maximum number of them 43.33 per cent found to medium level of adoption followed by 30.00 per cent found to low and 26.67 per cent found to high adoption level of organic farming practices.

Again out of 23 respondents belongs to large livestock possession group, the maximum number of them 47.83 per cent found to medium level of adoption followed by 26.09 per cent found to low adoption and high adoption level of organic farming practices.

The calculated chi-square value **$X^2=8.9$ N.S.** at 5 per cent level with 4 degree of freedom was found to be non significant. This leads to the acceptance of null hypothesis No.6. Hence, it may be concluded that livestock possession had no influence on adoption level of organic farming practices.

Table 4.14: Association between information source utilization and adoption of organic farming practices.

(No. of respondents)

Information source utilization categories	Level of adoption			Total
	Low	Medium	High	
Low	7 (33.33)	9 (42.86)	5 (23.81)	21 (100.00)
Medium	8 (28.57)	13 (46.43)	7 (25.00)	28 (100.00)
High	8 (25.81)	15 (48.39)	8 (25.81)	31 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)

$X^2 = 7.7$ N.S.

Note:- Figure in parenthesis shows percentage to their relative total
N.S.=Non significant

The table 4.14 reveals that out of 21 respondents belongs to low information source utilization group, the maximum number of them 42.86 per cent found to medium level of adoption followed by 33.33 per cent found to low adoption and 23.81 per cent found to high adoption level of organic farming practices.

Out of 28 respondents belongs to medium information source utilization group, the maximum number of them 46.43 per cent found to medium level of adoption followed by 28.57 per cent found to low and 25.00 per cent found to high adoption level of organic farming practices.

Again out of 31 respondents belongs to high information source utilization group, the maximum number of them 48.39 per cent found to medium level of adoption followed by 25.81 per cent found to low adoption and high adoption level of organic farming practices.

The calculated chi-square value $X^2=7.7$ N.S. at 5 per cent level with 4 degree of freedom was found to be non significant. This leads to the acceptance of null hypothesis No.7. Hence, it may be concluded that information source utilization had no influence on adoption level of organic farming practices.

Table 4.15: Association between extension contact and adoption of organic farming practices.

(No. of respondents)

Extension contact categories	Level of adoption			Total
	Low	Medium	High	
Low	6 (25.00)	11 (45.83)	7 (29.17)	24 (100.00)
Medium	8 (32.00)	11 (44.00)	6 (24.00)	25 (100.00)
High	9 (29.03)	15 (48.39)	7 (22.58)	31 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)
$X^2 = 10.4^*$				

Note:- Figure in parenthesis shows percentage to their relative total

*Significant at 5 per cent level of significance with 4 d.f.

The table 4.15 reveals that out of 24 respondents belongs to low extension contact group, the maximum number of them 45.83 per cent found to medium level of adoption followed by 29.17 per cent found to high adoption and 25.00 per cent found to low adoption level of organic farming practices.

Out of 25 respondents belongs to medium extension contact group, the maximum number of them 44.00 per cent found to medium level of adoption followed by 32.00 per cent found to low and 24.00 per cent found to high adoption level of organic farming practices.

Again out of 31 respondents belongs to high extension contact group, the maximum number of them 48.39 per cent found to medium level of adoption followed by 29.03 per cent found to low adoption and 22.58 per cent found to high adoption level of organic farming practices.

The calculated chi-square value $X^2=10.4^*$ at 5 per cent level with 4 degree of freedom was found to be highly significant. This leads to the rejection of null hypothesis No.8. Hence, it may be concluded that extension contact had an influence on adoption level of organic farming practices.

Table 4.16: Association between mass media exposure and adoption of organic farming practices.

(No. of respondents)

Mass media exposure categories	Level of adoption			Total
	Low	Medium	High	
Low	7 (30.43)	10 (43.48)	6 (26.09)	23 (100.00)
Medium	6 (25.00)	12 (50.00)	6 (25.00)	24 (100.00)
High	10 (30.30)	15 (45.45)	8 (24.24)	33 (100.00)
Total	23 (28.75)	37 (46.25)	20 (25.00)	80 (100.00)

$X^2=8.2$ N.S.

Note:- Figure in parenthesis shows percentage to their relative total

N.S.=Non significant

The table 4.16 reveals that out of 23 respondents belongs to low mass media exposure group, the maximum number of them 43.48 per cent found to medium level of adoption followed by 30.43 per cent found to low adoption and 26.09 per cent found to high adoption level of organic farming practices.

Out of 24 respondents belongs to medium mass media exposure group, the maximum number of them 50.00 per cent found to medium level of adoption followed by 25.00 per cent found to low and high adoption level of organic farming practices.

Again out of 33 respondents belongs to high mass media exposure group, the maximum number of them 45.45 per cent found to medium level of adoption followed by 30.30 per cent found to low adoption and 24.24 per cent found to high adoption level of organic farming practices.

The calculated chi-square value $X^2=8.2$ N.S. at 5 per cent level with 4 degree of freedom was found to be non significant. This leads to the acceptance of null hypothesis No.9. Hence, it may be concluded that mass media exposure had no influence on adoption level of organic farming practices.

4.4. Constraints in adoption of organic farming practices.

The data regarding adoption level of organic farming practices by the sampled farmers depicted that the maximum respondents adopted medium level of organic farming practices followed by low and high. The adoption of medium and low level of organic farming practices was due to so many constraints. In farmer's views these constraints are presented in Table 4.17.

Table: 4.17. Constraints faced by respondents regarding adoption of organic farming practices.

S. No.	Constraints	Frequency (N=80)	Parentage	Rank
1.	Lack of technical information regarding organic farming practices.	53	67.50	III
2.	Lack of loaning facilities for organic farming practices.	43	53.75	V
3.	Lack of knowledge regarding organic farming practices.	54	72.50	II
4.	Higher cost of organic farming practices.	35	43.75	VIII
5.	Risk in adoption of organic farming practices.	29	36.25	IX
6.	Lack of fund in adoption of organic farming practices	46	57.50	IV
7.	Preferring adoption of traditional agricultural practices	42	52.50	VI
8.	Non adoption of new technology due to unavailability of material.	38	47.50	VII
9.	Lack of trust in adoption of organic farming practices.	55	73.75	I
10.	Problem in preparation of organic farming.	25	31.25	X
	Average	42	53.625	

The constraints analysis was reported based on the opinion survey of the sample farmers. Thus, the generalizations of data are the feedback through farmers adopting the organic farming practices in study area. The above table reveals that the major constraints as perceived by the respondents are as per the frequency level of respondents and ranked accordingly the views at the time of collecting data were lack of trust in adoption of organic farming practices. (First ranked) viewed by 73.75 per cent respondents followed by lack of knowledge regarding organic farming practices (Second ranked) viewed 72.50 per cent of respondents, lack of

technical information regarding organic farming practices (Third ranked) viewed 67.50 per cent of respondents, lack of fund in adoption of organic farming practices (Fourth ranked) viewed 57.70 per cent of respondents, lack of loaning facilities for organic farming practices. (Fifth ranked) viewed 53.75 per cent of respondents, preferring adoption of traditional agricultural practices (Sixth ranked) viewed 52.50 per cent of respondents, non adoption of new technology due to unavailability of material (Seventh ranked) viewed 47.50 per cent of respondent, higher cost of organic farming practices (Eighth ranked) viewed 43.75 per cent of respondent, risk in adoption of organic farming practices (Ninth ranked) viewed by 36.25 per cent of respondents and problem in preparation of organic farming (Tenth ranked) viewed by 31.25 per cent of respondents .

4.5. Suggestions to over come the constraints.

For removing constraints' expressed by the farmers under study following suggestion were made. The details of suggestions confronted by the farmers to remove the constraints are presented in Table 4.18.

Table 4.18: Suggestions confronted by the farmers for solving the constraints.

S.No.	Items	No. of farmers (N=80)	Percentage	Rank
1.	The loan should be easily provided at low interest level for particular organic farming practices.	63	78.75	II
2.	Organic farming material should be provided at low cost	67	83.75	I
3.	There should be organized training programme and demonstration regarding technical knowledge of organic farming practices.	61	76.25	III
4.	The extension workers should be provided proper guidance at time regarding organic farming practices.	38	47.50	VIII
5.	Extension facilities should be available on demonstration and visiting basis.	58	72.50	IV
6.	There should be proper motivation for adoption of organic farming practices.	55	68.75	V
7.	Marketing facilities should be available for organic farming materials.	48	60.00	VII
8.	Subsidy should be given by Government in organic farming practices	51	63.75	VI
	Average	55.13	68.91	

In the present study farmers were asked for minimizing the constraints regarding organic farming practices. The following suggestions were confronted by the farmers to overcome the constraints.

The majority (83.75%) of the farmers suggested that organic farming material should be provided at low cost followed by (78.75%) the loan should be easily provided at low interest level for particular organic farming practices, (76.25%) there should be organized training programme and demonstration regarding technical knowledge of organic farming practices, (72.50%) extension facilities should be available on demonstration and visiting basis, (68.75%) there should be proper motivation for adoption of organic farming practices, (63.75%) subsidy should be given by Government in organic farming practices, (60.00%) marketing facilities should be available for organic farming materials and (47.50%) the extension workers should be provided proper guidance at time regarding organic farming practices.

CHAPTER V

DISCUSSION

This chapter deals with the discussion of result in light of the objectives of the study, which has been established by review of established literature and presented in the following segment.

A. Socio –personal variables:

This attribute includes the age, educational status and farming experience of respondents. Study revealed from the present study that the higher percentage of respondents were found middle age group followed by old and young; High educational status followed by medium and low; Medium level of farming experience followed by high and low respectively. The similar results were reported by Kushwaha (2003), Kanel (2005) and Singh (2005).

B. Economic variables:

This attribute includes the farm size, total annual income and livestock possession of respondents. Study revealed from the present study that the higher percentage of respondents were found medium farm size followed by large and small; Medium annual income followed by high and low; Medium size of livestock possession followed by small and large. The similar results were reported by Kushwaha (2003), Kanel (2005) and Singh (2005).

C. Communication variables:

This attribute includes the information source utilization, extension contact and mass media exposure of respondents. Study revealed from the present study that the higher percentage of respondents were found high information source utilization followed by medium and low; High extension contact category followed by medium and low; High category of mass media exposure followed by medium and low. The similar results were reported by Kushwaha (2003), Kanel (2005) and Singh (2005).

D. Knowledge level of organic farming practices:

The result showed that out of the total respondents, the majority of respondents 55.00 per cent had medium level of knowledge followed by high knowledge 23.75 per cent and low knowledge 21.25 per cent respectively. Thus, it may be concluded that the majority of respondents were have medium level of knowledge followed by high and low knowledge. The similar results were reported by Juliana *et.al.* (1991), Bhairamkar *et.al* (1998), Chapke (2000), Naik *et.al.* (2009) and Osari (2011).

E. Adoption level of organic farming practices:

It is found in study that the cumulative adoption basis of organic farming practices were observed that the majority of respondents 46.25 per cent had medium level of adoption of organic farming practices followed by 28.75 per cent had low and 25.00 per cent had high adoption level. Thus, it may be concluded that the majority of respondents had medium adoption level of organic farming in study area followed by low and high. The similar results were reported by Rangantha (2000), Khan *et.al.* (2002) and Osari (2011).

F. Association between independent and dependent variables:

The study showed that except live stock possession, information source utilization and mass media exposure all others independent variables like age, educational status, farming experience, farm size, total annual income and extension contact showed positive and significant association between the adoption of organic farming practices.

Hence, the null hypothesis that there is no relationship between adoption of organic farming practices with these independent variables is rejected. These findings derive support from the finding of Julinana *et.al.* (1991), Kalaskar *et.al.* (1999), Chapke (2000), Saxena and Singh (2000), Ranganatha *et.al.* (2001), Rao and Mathur (2002) and Loganadhan and Singh (2003).

G. Constraints in adoption of organic farming practices:

The farmers' views were lack of trust in adoption of organic farming practices. (First ranked) viewed by 73.75 per cent respondents followed by lack of knowledge regarding organic farming practices (Second ranked) viewed 72.50 per cent of respondents, lack of technical information regarding organic farming practices (Third ranked) viewed 67.50 per cent of respondents, lack of fund in adoption of organic farming practices (Fourth ranked) viewed 57.70 per cent of respondents, lack of loaning facilities for organic farming practices. (Fifth ranked) viewed 53.75 per cent of respondents, preferring adoption of traditional agricultural practices (Sixth ranked) viewed 52.50 per cent of respondents, non adoption of new technology due to unavailability of material (Seventh ranked) viewed 47.50 per cent of respondent, higher cost of organic farming practices (Eighth ranked) viewed 43.75 per cent of respondent, risk in adoption of organic farming practices (Ninth ranked) viewed by 36.25 per cent of respondents and problem in preparation of organic farming (Tenth ranked) viewed by 31.25 per cent of respondents. These findings derive support from the finding of Saxena and Singh (2000) and Jain and Bhattacharya (2002).

H. Suggestions to over come the constraints.

In the present study farmers were asked for minimizing the constraints regarding organic farming practices. The following suggestions were confronted by the farmers to overcome the constraints. The majority (83.75%) of the farmers suggested that organic farming material should be provided at low cost followed by (78.75%) the loan should be easily provided at low interest level for particular organic farming practices, (76.25%) there should be organized training programme and demonstration regarding technical knowledge of organic farming practices, (72.50%) extension facilities should be available on demonstration and visiting basis, (68.75%) there should be proper motivation for adoption of organic farming practices, (63.75%) subsidy should be given by Government in organic farming practices, (60.00%) marketing facilities should be available for organic farming materials and

(47.50%) the extension workers should be provided proper guidance at time regarding organic farming practices. These findings derive support from the finding of Saxena and Singh (2000).

CHAPTER VI

SUMMARY, CONCLUSION AND SUGGESTIONS

SUMMARY:

Organic agriculture is production system that avoids or largely excludes the use of synthetic compounded fertilizers, pesticides, growth regulated etc. To maximum extent feasible organic farming system relay on crop rotation, crop residues, animal manures, legumes, green manures, off farm waste and other aspect of biologically pest control and mechanical cultivation to maintain soil productivity and tilth to support plant nutrients and to control weeds, insect and other pest, it has considerable economic, environmental and sustainability implications. On the basis of above points the Madhya Pradesh State Department of Agriculture has started advocating organic farming practices on major crops of the area, but it has been observed that farmers are not adopting the recommended organic farming practices. Hence, with this background the study, **“A study on knowledge and adoption of organic farming practices among the farmers in Sehore district of M.P.”** has been designed with the following objectives.

Objectives:

5. To study the socio-personal, economical and communication attributes of the respondents.
6. To find out the extent of knowledge and adoption of the respondents regarding organic farming practices.
7. To analyze the association between adoption of the respondents regarding organic farming practices and their socio personal, economical and communication attributes.
8. To determine the constraints experienced by the respondents in adoption of organic farming practices and suggest the ways to overcome them.

Sehore district has been selected purposively for the present study due

to awareness and convenience of the researcher. There are total 5 blocks in Sehore district namely Sehore, Ashta, Ichhawar, Nasrullaganj and Budhani. Out of 5 blocks only one Sehore block was selected purposively for this study. Sehore block comprises total 306 villages. Out of which a list of these villages where the organic farming programme has been adopted was prepared and 5 organic farming villages were selected randomly. A village wise list of farmers adopting organic farming programme was prepared with the help of information obtained from Department of Agriculture, Sehore and from each village 16 farmers were selected on the basis of random sampling method. The total respondents were 80 for this study.

A- Independent variables

1. Age, 2. Education status, 3. Farming Experience, 4. Farm size
5. Total annual income, 6. Live stock possession, 7. Information source utilization, 8. Extension contact and 9. Mass media exposure

B – Dependent variables:

1. Knowledge level of organic farming practices and 2. Adoption of organic farming practices

A well structured and pretested interview schedule was prepared for the purpose of collecting information from respondents. The data was collected through a well structured and pre tested interview schedule. The researcher was personally meet the respondents and explain to them about the purpose of the study. The data was collected and recorded in a free and frank atmosphere where the interviewer and interviewee have good rapport. All the collected primary data was related to the agricultural year 2011-12. The data collected was tabulated in the form of tables and figures.

The calculated data was analyzed by using statistical test viz. “t” test and

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

χ^2 test.

With d.f. (r-1) (c-1)

Where,

O_i = Observed frequency of respondents

E_i = Expected frequency of the same respondents

Similarly,

$$"t" = \frac{|\bar{x} - \bar{y}|}{\sqrt{\sigma_c^2 (1/n + 1/n_2)}}$$

Where,

$\bar{x} - \bar{y}$ = mean

σ_c^2 = combined variance

CONCLUSIONS:

The main conclusions are as follows:

1. Socio personal, economical and communication attributes of the farmers.

- The majority of respondents were in middle age group followed by old and young.
- The majority of respondents were found to higher education group followed by medium and low education.
- The majority of respondents had medium farming experience followed by high and low.

- The majority of respondents had medium size farm followed by large and small size of farm.
- The majority of respondents were have medium annual income followed by high and low.
- The majority of respondents had medium size of livestock herd followed by small and large size of herd.
- The majority of respondents had high information source utilization followed by medium and low.
- The majority of respondents were in high extension contact category followed by medium and low.
- The majority of respondents were in high category of mass media exposure followed by medium and low.

2. Knowledge and adoption level of farmers regarding organic farming practices.

- **The majority of respondents were had medium level of knowledge followed by high and low knowledge.**
- The majority of respondents had medium adoption level of organic farming in study area followed by low and high.

3. Association between adoption level and independent variables of the respondents.

- The calculated chi-square value $X^2=9.6^*$ was found to be significant. Hence, it may be concluded that age had an influence on adoption level of organic farming practices.
- The calculated chi-square value $X^2=9.5^*$ was found to be significant. Hence, it may be concluded that education had an influence on adoption level of organic farming practices.

- The calculated chi-square value $X^2=9.5^*$ was found to be significant. Hence, it may be concluded that farming experience had an influence on adoption level of organic farming practices.
- The calculated chi-square value $X^2=9.6^*$ was found to be significant. Hence, it may be concluded that farm size had an influence on adoption level of organic farming practices.
- The calculated chi-square value $X^2=9.8^*$ was found to be significant. Hence, it may be concluded that annual income had an influence on adoption level of organic farming practices.
- The calculated chi-square value $X^2=8.9$ **N.S** was found to be non significant. Hence, it may be concluded that livestock possession had no influence on adoption level of organic farming practices.
- The calculated chi-square value $X^2=7.7$ **N.S.** was found to be non significant. Hence, it may be concluded that information source utilization had no influence on adoption level of organic farming practices.
- The calculated chi-square value $X^2=10.4^*$ was found to be high significant. Hence, it may be concluded that extension contact had an influence on adoption level of organic farming practices.
- The calculated chi-square value $X^2=8.2$ **N.S.** was found to be non significant. Hence, it may be concluded that mass media exposure had no influence on adoption level of organic farming practices.

4. Constraints in adoption of organic farming practices.

The farmers' views were lack of trust in adoption of organic farming practices. (First ranked) viewed by 73.75 per cent respondents followed by lack of knowledge regarding organic farming practices (Second ranked) viewed 72.50 per cent of respondents, lack of technical information regarding organic farming practices (Third ranked) viewed 67.50 per cent of respondents, lack of fund in adoption of organic farming practices (Fourth ranked) viewed 57.70 per cent of respondents, lack of loaning facilities for

organic farming practices. (Fifth ranked) viewed 53.75 per cent of respondents, preferring adoption of traditional agricultural practices (Sixth ranked) viewed 52.50 per cent of respondents, non adoption of new technology due to unavailability of material (Seventh ranked) viewed 47.50 per cent of respondent, higher cost of organic farming practices (Eighth ranked) viewed 43.75 per cent of respondent, risk in adoption of organic farming practices (Ninth ranked) viewed by 36.25 per cent of respondents and problem in preparation of organic farming (Tenth ranked) viewed by 31.25 per cent of respondents .

Suggestions for adoption of organic farming practices:

1. Being natural friendly, low cost technique with minimum depended on outside input, organic farming has good scope for wider application. Promoting organic farming is not that smooth sailing. It is common experience that yields of crops decline in the initial few years once the farmer's switches over to organic, organic input may be difficult to be generated on the farm and the produce may not find an easy market. The success of organic farming is dependent on soil fertility and regular monitoring of soils and crop growth. The initial years, loss in crops yield is compensated by low cost of inputs, higher price recovery and pollution free environment. Above all, the poor farmers do not have to depend on high cost of external inputs. The promotion in adoption of organic farming practices, demonstration, on farm an adoptive research may be suggested.
2. As a part of organic farming, nutrients should be supplied from organic sources. It is difficult to produce large quantities of farm yard manure and other bulky organic material to meet the entire nutritional requirement. Hence it may be worth while to produce other farm of organic manure such as vermincompost and bio fertilizer to reduce the dependence on the chemical fertilizer.

3. Organic farming practices cannot be introduced in limited time, it will take long period. The whole farm, including livestock should be converted according to the standards over a period of time. The composition of a farm unit can vary widely according to local specific conditions, ownership structure and time span.
4. Each field of farmers contains given quantity of nutrients. Management should be used in such a way that optimal used is made of this finite amount. This means that nutrients should be recycled and used number of items in different forms.
5. Crop rotation takes place as the important principal of organic farming practices. Beside, the classical rotation involving one crop per field per season, inter cropping, mixed cropping and under sowing are other options to optimize interactions e.g. encouraging natural predators of crop pests.
6. In last it is suggested that, cyclic process and interaction in the agro ecosystem can be optimized like using crop residues in animal husbandry and manures for crop rotation.

CHAPTER VII

BIBLIOGRAPHY

- Barkar, Chothe and Lanjiwar (2000). Characteristics of farmers influencing their knowledge about use of bio fertilizer. *Maharashtra.J.Edu.* 130-131.
- Bhairamkar, Kadam and Mehta (1998). Knowledge level of farmers about integrated pest management programme. *Maharashtra.J.Extn.Edu*, **17**:373-376.
- Bhople and Borker (2002). Bio-fertilizers farmer attitude and adoption. *Agricultural Extn. Review*, **14**: 21-22.
- Chapke (2000). Knowledge and adoption of farmers about bio-fertilizer control measures. *Maharashtra.J.Extn.Edu.* **17**:41-47.
- Gyawati (1996) Assessment of indigenous knowledge in plant protection for possible integration into integrated pest management. *IAAS Res.Report*, pp:101-127.
- Jain,R.K. and Bhattacharya (2002). Farmer's involvement in bio fertilizer demonstration and promotion campaign. *Maharashtra J. Extn. Edu.* **19**:264-268.
- Jirili,R.K. and Gangadharappa,N.R. (1997). Psychometer domain of vegetable growers with respect t integrated pest management. *Mysore J.Agri.Sci.*, **31**(3):271-275.
- Juliana,C.S.; Annamalai,R. and Somasundaram.S (1991). Adoption of pest management practices. *Indian J. Extn. Edu.*, **27**(2-4).
- Kalaskar,A.P; Shibnde and Bhople,R.S.(1999) Correlation of adoption of integrated pest management technology by cotton growers. *Maharashtra. J. Extn. Edu.*, **18**: 92-96.
- Kanel,M.S. (2005). A study on knowledge about organic farming practices possessed by the farmers and their adoption in Dhar district, Madhya Pradesh. *M.Sc.(Ag.) Thesis, JNKVV. Jabalpur.*
- Karla, R. K. and S. S. Zinia Hundal, (2008) Adoption of vermiculture as a segment of organic farming: a case study. *Indian Journal of Ecology.* **35**(2): 143-145.
- Khan,Md.Suleman; Krishna,T. and Rao,P.Punna (2002). Adoption pattern of Eco-friendly technology by rice growers. *Agril.Extn.Review*, March-April, 22-25.

- Krishnamurthy,B. and Veerabhadraiah,V. (1990). Impact of farmers field on intergartes pest management in rice farmers in Karnataka, India. *Tropical Agri.Res.*, pp:174-189.
- Kushwaha,T.S. (2003). A study on knowledge and adoption of organic farming practices in Sehore District of M.P. *M.Sc.(Ag.) Thesis, JNKVV. Jabalpur.*
- Loganandhan,N. and Singh,P. (2003). Adoption of organic farming-profile and motive of farmers. *Indian.J.Extn.Edu.*, **39**(1&2):35-40.
- Naik Munir Hussain , S.R. Srivastava, A.K. Godara and V.S.P. Yadav (2009) Knowledge Level about Organic Farming in Haryana. *Indian Res. J. Extn Edu.* **9**(1):50-53.
- Nanadapurkar,G.G. (1980). A study of the entrepreneurial behaviour of small farmers. *Ph.D. Thesis, University of Agril.Sci.,Bangalore.*
- Osari,D (2011). A Study on Knowledge and Adoption of Organic Farming Practices by Farmers in Indore District of Madhya Pradesh. *M.Sc.(Ag.) Thesis, R.V.S.K.V.V. Gwalior.*
- Patel,G.P. (2007). A study on adoption of organic farming technology among the farmers of selected blocks of Damoh district (M.P.). *M.Sc.(Ag.) Thesis, JNKVV. Jabalpur.*
- Ranaganath,A.D.; Veerabhadraiah,V. and Lalitha,K.C. (2001). Adoption of organic farming practices by small farmers. *Agil.Extn. Review*, Nov-Dec. 3-6.
- Rao, Uma; Maheswara,D and Mathur,P.N. (2002). Prediction of extents of adoption of blue-green algae bio-fertilizers technology by rice growers. *Indian.J.Extn.Edu.*, **2**(1):101-105.
- Saxena,K.K and Singh,R.L. (1997). Training needs of agriculture and profitability in organic farming technology. *Crop Res.* **14**(1):173-178.
- Saxena,K.K and Singh,R.L. (2000). Adoption of organic farming practices by farmers of Malwa Region. *Maharashtra Journal of Extension Education.* **19**:53-55.
- Saxena,K.K and Kushwah,T.S. (2004). Adoption of organic farming practices. July 4, No.1&2:34.
- Sharma,V.K. (1986). A comparative study of the adoption of improved package of

practices of Rice and Wheat crop in panagar block. *M.Sc.(Ag.) Thesis, JNKVV. Jabalpur.*

Sharifi Omid, Seyed Abolhasan Sadati, Farahnaz Rostami Ghobadi, Seyed Abolghasem Sadati, Yaser Mohamadi and Parastoo Taher Tolou Del (2008). Barriers to conversion to organic farming A case study in Babol County in Iran. *African Journal of Agricultural Research*. **5**(16): 2260-2267.

Shinde,P.S; Bhople,R.S. and Vaidya,V.R. (1997). Adoption of integrated pest management practices of cotton growers. *Maharashtra.J.Extn.Edu.*, **168**: 167-174.

Singh,V.K. (2005). A study on behaviour of farmers in relation to organic farming practices in selected block of Rewa district, M.P. *M.Sc.(Ag.) Thesis, JNKVV. Jabalpur.*

Supe,S.V. (1969). Factors related to different degree of rationall in decision naking among farmers in Buldana district. *Ph.D. Thesis ,IARI, New Delhi.*

Tarde,V.J.; V.S.Shirke; S.S.Khandve and A.M.Chavai (2008) [Knowledge, adoption and constraints in organic farming in pomegranate cultivation.](#) *Journal of Maharashtra Agricultural Universities*. **3**(33):393-394.

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शोध अवधि 2011 – 2012
शोध का विषय

A Study on Knowledge and Adoption of Organic Farming Practices by the Farmers in
Sehore District of Madhya Pradesh.

खण्ड

सामान्य जानकारी (General information)

कृषक का नाम गाँव का नाम

विकासखण्ड का नाम जिला

1. उम्र (Age)(वर्ष में)

2. शिक्षा का स्तर (Education Status)

i. अशिक्षित

ii. प्राथमिक

iii. मिडिल स्तर तक

iv. हायर सेकेण्ड्री

v. कालेज स्तर तक

3 कृषि अनुभव (Farming Experience)वर्षों में

4 भूमि का रकबा (Farm Size)

(प) लघु कृषक (2 हे. तक) (पप) मध्यम कृषक (2 से 5 हे. तक) (पपप) दीर्घ कृषक (5 हे. से अधिक)

5 वार्षिक आय (Annual Income)

(i) रु 50000 तक

(ii) रु 50000 से 100000 तक

(iii) रु 100000 से अधिक

6 पशुओं की स्थिति (Live stock possession)

क्र.	पशु का नाम	पशु की संख्या
1	गाय	
2	भेस	
3	बकरी	
4.	अन्य	

7 जैविक खेती से संबंधी जानकारी प्राप्त करने के लिए किस किस माध्यम को अपनाते हैं।

(Information source utilization)

आपने कृषि से संबंधित जानकारी किन-किन स्रोतों से प्राप्त की है और कितना उपयोग करते हैं।

क्र	स्रोत व माध्यम का नाम	उपयोग की दर
-----	-----------------------	-------------

		हमेशा	कभी-कभी	कभी नहीं
1.	पड़ोसी / मित्र / रिश्तेदार			
2.	उन्नत कृषक			
3.	ग्राम सेवक			
4.	विस्तार सहायक			
5.	कृषि वैज्ञानिक			
6.	उन्नत कृषक			
7.	कृषि महाविद्यालय से			
8.	रेडियो / टेलीविजन			
9.	समाचार पत्र / पत्रिका			
10.	प्रदर्शन / प्रक्षेत्र			
11.	अन्य			

8ª जैविक खेती से संबन्धित जानकारी हेतु आप किससे और कब मिलते हैं । (Extension Contact)

क्र.	स्रोत	हमेशा	कभी-कभी	कभी नहीं
1.	मित्र / पड़ोसी / रिश्तेदार			
2.	स्थानीय प्रगतिशील कृषक			
3.	कृषि प्रसार अधिकारी			
4.	कृषि प्रशिक्षण अधिकारी			
5.	गैर सरकारी संस्था			
6.	अन्य			

9 जन संचार माध्यम (Mass Media Exposure)

निम्न मे से आपने जैविक खेती सम्बन्धित सूचनाएं किस संचार माध्यम से प्राप्त करते हैं—

क्र.	जनसंचार माध्यम	हमेशा	कभी-कभी	कभी नहीं
1.	रेडियो			
2.	टेलीविजन			
3.	समाचार पत्र			
4.	प्रदर्षनी			
5.	प्रक्षेत्र भ्रमण			
6.	किसान मेला			
7.	इन्टरनेट			
8.	चर्चाएं			

खण्ड ब

ज्ञान संबन्धी जानकारी (Knowledge Level)

1. क्या आप ग्रीष्म कालीन गहरी जुताई के बारे में जानते हैं?

हाँ / नहीं

यदि हाँ तो जानकारी दें

क्र	जुताई के प्रकार	जुताई का समय	विधि
1			
2			

2. क्या आप फसल चक्र के बारे में जानते हैं?

हाँ/नहीं

यदि हाँ तो जानकारी दें

- 1
- 2.....
- 3.....

3. क्या आप अन्तः-सस्य के बारे में जानते हैं?

हाँ/नहीं

यदि हाँ तो जानकारी दें

- 1
- 2.....
- 3.....

4. क्या आप बीज उपचार के बारे में जानते हैं?

हाँ/नहीं

यदि हाँ तो जानकारी दें

क्र	बीज उपचार के प्रकार	मात्रा
1		
2		

5. क्या आप कीट रोधी किस्मों के बारे में जानते हैं?

हाँ/नहीं

यदि हाँ तो जानकारी दें

क्र	किस्म	कीट
1		
2		

6 क्या आपको अधिक पैदावार लेने हेतु अनुसंशित जैविक खाद की मात्रा के बारे में जानकारी है ?

हाँ/नहीं

यदि हाँ तो जानकारी दीजिए ।

- 1.....
- 2

7 क्या आप कीट नियंत्रण के लिए टेप के उपयोग के बारे में जानते हैं?

हाँ/नहीं

यदि हाँ तो जानकारी दें

क्र	टेप का नाम	अवधि	उपयोग करने का समय
1			
2			

8 क्या आप इल्लियो के नियंत्रण के लिए खेत में पक्षियों के बैठने के लिए लकड़ियों के उपयोग के बारे में जानते हैं?

हाँ/नहीं

यदि हाँ तो जानकारी दें

अ आकार.....

ब मात्रा.....

स उपयोग करने का समय

9 क्या आप जानते हैं कि मिर्च/लहसुन के द्वारा फसलों में कीटों की रोकथाम की जाती है?

हाँ/नहीं
यदि हाँ तो जानकारी दें
विधि.....

10. क्या आप जानते हैं कि नीम के पत्तियों के द्वारा फसलों में कीटों की रोकथाम की जाती है?

हाँ/नहीं
यदि हाँ तो जानकारी दें
विधि.....

11. क्या आपको अधिक पैदावार लेने हेतु अनुसंधित जैविक उर्वरक की मात्रा के बारे में जानकारी है ?

हाँ/नहीं

यदि हाँ तो जानकारी दीजिए ।

क्र.	जैविक उर्वरक का नाम	मात्रा किलोग्राम/हेक्टेयर	देने की विधि या समय
1			
2			
3			
4			

12. क्या आप खरपतवार नियंत्रण के बारे में जानते हैं?

हाँ/नहीं
यदि हाँ तो जानकारी दें

क्र	खरपतवार नियंत्रण विधि	विधि का समय
1		
2		

13. क्या आप कीट नियंत्रण के लिए टाईकोग्रमा एस. पी. के बारे में जानते हैं?

हाँ/नहीं
यदि हाँ तो जानकारी दें
मात्रा.....
देने की विधि और समय.....

14. क्या आप कीट नियंत्रण के लिए एन. पी. वी. के बारे में जानते हैं?

हाँ/नहीं
यदि हाँ तो जानकारी दें

15. क्या आप कीट नियंत्रण के लिए जैविक कीटनाशी के बारे में जानते हैं? हाँ/नहीं

यदि हाँ तो जानकारी दें

क्र	जैविक कीटनाशी का नाम	मात्रा	देने की विधि और समय
1			
2			

खण्ड स
अंगीकरण संबंधी जानकारी
(Adoption of organic farming practices)

1. क्या आप ग्रीष्म कालीन गहरी जुताई करते हैं?

हाँ/नहीं

यदि हाँ तो जानकारी दें.....

- यदि नहीं तो कारण बताये.....
- 2 क्या आप फसल चक्र को अपनाते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
1
2.....
3.....
- यदि नहीं तो कारण बताये
- 3 क्या आप अन्तः-फसल को अपनाते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
1
2.....
3.....
- यदि नहीं तो कारण बताये
4. क्या आप बीज उपचार का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
यदि नहीं तो कारण बताये
5. क्या आप कीट रोधी किस्मों को अपनाते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
यदि नहीं तो कारण बताये
- 6 क्या आपको अधिक पैदावार लेने हेतु अनुसंशित जैविक खाद की मात्रा को उपयोग करते हैं ? हाँ/नहीं
यदि हाँ तो जानकारी दीजिए ।
यदि नहीं तो कारण बताये ।
- 7 क्या आप कीट नियंत्रण के लिए टेप का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
यदि नहीं तो कारण बताये
- 8 क्या आप इल्लियो के नियंत्रण के लिए खेत में पछियों के बैठने के लिए लकड़ियों का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
अ. आकार.....
ब. मात्रा.....
स. उपयोग करने का समय
- यदि नहीं तो कारण बताये
- 9 क्या आप अपनी फसलों में कीटों की रोकथाम हेतु मिर्च/लहसुन का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
विधि.....
फसल का नाम.....
10. क्या आप अपनी फसलों में कीटों की रोकथाम हेतु नीम के पत्तियों का उपयोग करते हैं? हाँ/नहीं
हाँ/नहीं
यदि हाँ तो जानकारी दें
विधि.....
फसल का नाम.....
11. क्या आपको अधिक पैदावार लेने हेतु अनुसंशित जैविक उर्वरक की मात्रा का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दीजिए ।
यदि नहीं तो कारण बताये ।
12. क्या आप कीट नियंत्रण के लिए टाईकोग्रमा एस. पी. का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
मात्रा.....
देने की विधि और समय.....

- यदि नहीं तो कारण बताये ।
13. क्या आप खरपतवार नियंत्रण का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
यदि नहीं तो कारण बताये
14. क्या आप कीट नियंत्रण के लिए एन. पी. वी. का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
यदि नहीं तो कारण बताये
15. क्या आप कीट नियंत्रण के लिए जैविक कीटनाशी का उपयोग करते हैं? हाँ/नहीं
यदि हाँ तो जानकारी दें
यदि नहीं तो कारण बताये

खण्ड द
सामस्याएँ (Constraints)

जैविक खेती के अंगीकरण में आने वाली बाधाएँ

1. जैविक खेती के विषय में जानकारी का अभाव।
2. जैविक खेती के लिए ऋण का अभाव।
3. जैविक खेती का ज्ञान का अभाव।
4. जैविक खेती की अधिक कीमत होना।
5. जैविक खेती अंगीकरण में जोखिम।
6. धन की कमी से जैविक खेती अंगीकरण न करना।
7. परम्परागत खेती तकनीकी अंगीकरण करना।
8. जैविक आगतो की अनुपलब्धता।
9. जैविक खेती पर विष्वास की कमी।
10. जैविक खेती में कठिनाई होना।

VITA

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*The author continued his post graduation from College of Agriculture, Sehore (M.P.), to specialize in “**Department of Extension Education and Rural Sociology**” and partial fulfillment of the requirements for the award of the same, he allotted with interesting problem as “**A Study on Knowledge and Adoption of Organic Farming Practices among the farmers in Sehore District (M.P.)**” for thesis work which has been duly completed by him and presented in this thesis.*

His achievement in the sports is praiseworthy. He actively participated in all the cultural activities of the college. Now, he is going to complete his master’s degree programme by submission of this thesis.....