ENTREPRENEURIAL BEHAVIOUR OF SAFED MUSLI GROWERS OF AKOLA AND BULDANA DISTRICTS

THESIS

Submitted to
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola
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(EXTENSION EDUCATION)

BY
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Enrolment Number - GG-354 **2014**

DECLARATION OF STUDENT

I here by declare that the experimental work and its interpretation of the thesis entitled **"ENTREPRENEURIAL BEHAVIOUR OF SAFED MUSLI GROWERS OF AKOLA AND BULDANA DISTRICTS"** or part there of has neither been submitted for any other degree or diploma of any University, nor the data have been derived from any thesis / publication of any University or Scientific Organization. The source of materials used and all assistance received during the course of investigation have been duly acknowledged.

Dutonde

Place : Akola

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Date: 31/05/ 2014

Enrolment No.GG-354

CERTIFICATE

This is to certify that the thesis entitled **"ENTREPRENEURIAL BEHAVIOUR OF SAFED MUSLI GROWERS OF AKOLA AND BULDANA DISTRICTS"**, submitted in partial fulfilment of the requirements for the degree of **"Master of Science in Agriculture (Extension Education)"** of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola is a record of bonafide research work carried out by **Dutonde Shweta Sakharam** under my guidance and supervision.

The subject of thesis has been approved by the Student's Advisory Committee.

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Date:31/05/ 2014 **(Shweta S. Dutonde)**

Place: Akola Enrolment Number – GG-354

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%	-	per cent
Agri.	-	Agriculture
Agril.	-	Agricultural
Educ.	-	Education
et al.	-	et alia (all others)
etc	-	Etcetera
Extn.	-	Extension
Fig.	-	Figure
ha.	-	Hectare
i.e.	-	That is
J.	-	Journal
Res.	-	Research
Rev.	-	Review
Rs.	-	Rupees
Sci.	-	Science
Std.	-	Standard
Univ.	-	University
Unpub.	-	Unpublished
viz.	-	Namely

Thesis Abstract

E) THESIS ABSTRACT

a.	**Title of the thesis**	:	**"ENTREPRENEURIAL BEHAVIOUR OF SAFED MUSLI GROWERS OF AKOLA AND BULDANA DISTRICTS"**
b.	**Full name of student**	:	**Dutonde Shweta Sakharam**
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d.	**Degree to be awarded**	:	M. Sc. (Agriculture)
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ABSTRACT

The present study entitled "Entrepreneurial Behaviour of Safed Musli Growers of Akola and Buldana Districts" was conducted in Akot Panchayat Samiti of Akola District and Jalgaon jamod Panchayat Samiti of Buldana District of Maharashtra state.

For present study, 100 farmers were selected from ten villages by using random sampling. The main objectives of the study were to study the personal, socio-economic and psychological characteristics of safed musli growers, to study the entrepreneurial

behaviour of safed musli growers, to find out relationship of selected characteristics with entrepreneurial behaviour of safed musli growers and to identify constraints in safed musli cultivation as perceived by the respondents by using exploratory design of social research Data were collected by personally interviewing with help of pretested and well structured interview schedule and data were subjected to appropriate statistical analysis.

The salient findings of the present study revealed that more than half of the respondents belonged to middle age group and nearly half of the respondents were educated upto high school level. Majority of the safed musli growers possessed medium category of land holding (2.01 to 04.00 ha). Majority of the respondents had medium level of annual income. Relatively higher percentage of respondents (81.00%) had well/tube well as their source of irrigation. Near about half of the respondents are having medium level of experience in cultivation of safed musli. Nearly half of the respondents having medium level of sources of information. More number of the respondents had 0.51 to 1.50 ha area under cultivation of safed musli. Majority of respondents are having moderate extension contact with agencies for seeking information. Majority of respondents had medium level of scientific orientation. More than half of the respondents are having medium level of knowledge about recommended cultivation practices of safed musli.

Further, it was observed that, two third of safed musli growers belonged to medium entrepreneurial behaviour. Whereas, in case of entrepreneurial behaviour components majority of respondents had medium level of innovativeness, achievement motivation, decision making ability, risk orientation, leadership ability and management orientation. More than half of the respondent (52.00%) belongs to medium category of economic motivation. In case of entrepreneurial behaviour two third (73.00%) of safed musli growers belonged to medium category.

From relational analysis it was inferred that, age, education, land holding, occupation, area under cultivation, experience of cultivation of safed musli, sources of information and knowledge about cultivation of safed musli shows positively significant relationship with entrepreneurial

behavior, whereas sources of irrigation, annual income, extension contact and scientific orientation did not establish significant relationship with their entrepreneurial behavior.

The findings on the constraints faced by thesafed musli growers as perceived by the respondents are the safed musli growers encountered the problem of lack of storage facility, non availability of labour (62.00%) and high labour charges (72.00%). With regard to other problems non-availability of FYM and manures (95.00%), irregular supply of electricity (82.00%), expensive nature of the plant protection chemicals and non-availability of fertilizer at required time were also faced by the safed musli growers. With respect to constraints in marketing of safed musli, high transportation charges were the important constraints. Non availability of local market was the other and most important problem for the safed musli growers.

Chapter I

Introduction

CHAPTER I

INTRODUCTION

Medicinal plants are the local heritage with global importance. World is endowed with a rich wealth of medicinal plants. Medicinal plants constitute a group of industrially important crops which are of great value for domestic use and for export. Plant- based drugs are being increasingly preferred in medicinal science. The use of various parts of several drug plants to cure specific ailments has been in vogue from ancient time in our indigenous medicine.

The World Health Organization (WHO) has compiled a list of 20,000 medicinal plants used in different parts of the globe. Amongst these, over 100 botanicals are reported to have consistently large demand and are in major medicinal drug markets in the world. Among these the Safed musli (*Chlorophytum species*) belongs to *liliaceae* family it is also called as wonder hurb. Roots are the economic parts and having aphrodisiac properties due to presence of steroidal saponins viz., neotegogenin, stegmasterol, tokoregenin (Tondon and Shukla, 1992). It is commercially important medicinal plant in India. It is being used as anti arthritic and anti cancer drug because of its aphrodisial properties. It is found in tropical moist and dry deciduous forest. It is widely distributed in India in Southern Rajasthan, Western Madhya Pradesh, North Gujrat, few parts of Karnataka and Maharashtra.

Dried roots of safed musli contains: carbohydrates (42%), protein (80%), fibre (3-4%), saponin(2-17%) It increases energy, provide healthy hormone function enhances muscle movement and widely used in Ayurvedic medicine. More than 175 species of safed musli have been reported in the world out of which 13 species of safed musli have been reported in India. In Maharashtra farmers raised safed musli.

The average production is 343kg/acre. The world's demand of safed musli is over 50,000 tons and is much higher than present production which is less than 5,000 tons in various farm lands in India. The demand of safed

musli is all over world which has made it famous by such names as Indian Viagra, Roots of Gold, Herbal Viagra, Wonder Crop etc.

Concept of Entrepreneurship

The entrepreneurs are key persons of any country for promoting economic growth and technological change. The appearance of their activities i.e. development of entrepreneurship is directly related to socio-economic development of the society.

Entrepreneurship is the capacity for innovation and caliber to introduce to innovative techniques in business operations. The activity of an individual to decide adopting certain enterprises to make profit is regarded as entrepreneurial behaviour. The future looks for innovative entrepreneurs who possess the skill and experience needed for the challenges of enterprise ownership. It is only the innovative entrepreneur who has the power to dream, to transform new situation into thoughts and resolve them into action. Hence, an entrepreneur is an integral part of economic development. Entrepreneurship is the persuit of an opportunity irrespective of existing resources. For instance, it is the risk taking ability of the individual broadly coupled with rational decision making to increase production in agriculture, business, industry and other allied fields.

Entrepreneurship is influenced by various socio-economic and personal factors either individually or in combination, and the supporting system and the social environment determines to some extent the success of entrepreneurship. Keeping this in view, the present study was under taken to determine the socio-economic and personal factors influencing directly as well as indirectly the entrepreneurship of safed musli growers.

1.2 Importance and need of the study

The present study was conducted in Akot Panchayat Samiti of Akola district and Jalgaon Jamod Panchayat Samiti of Buldana district.

In these Panchayat Samities safed musli farms are maintained on commercial basis or subsidiary business to agriculture. This study was helpful to know entrepreneurial behaviour of safed musli growers. This study could also be useful to extension workers to know the extent of knowledge possess by the safed musli growers and to what extent subsidy and technology needed to these farming communities.

This study would be important to know socio-personal, psychological characteristics of safed musli growers and to the extension workers to solve the problems of safed musli enterprise development.

1.3 Objectives of the study

1. To study the personal, socio-economic and psychological characteristics of safed musli growers.
2. To study the entrepreneurial behaviour of safed musli growers.
3. To find out the relationship of selected characteristics with entrepreneurial behavior of safed musli growers.
4. To identify constraints in safed musli cultivation, production, storage and marketing as perceived by the respondents.

1.4 Hypothesis or assumptions

Considering the findings of various research studies, the assumed nature of relationship between variables were worked out and following research hypothesis were framed on various aspects of study in the accordance with the objectives of the study. The hypothesis framed was presented in null form (H_0) as below.

H_0 = There is no significant relationship between the selected profile of safed musli growers with their entrepreneurial behavior.

1.5 Scope and limitations of the study

During 1970's entrepreneurship was recognized as a vehicle for economic growth and industrial development and a potential solution to problems of underemployment and unemployment. However, in today's changing scenario, skills in entrepreneurial development have transformed and have become important. Many entrepreneurial opportunities are emerging in various fields such as computers, electronics, medicine, agriculture, food technology, fashion designing etc. It also assumes greater significance in the field of safed musli growing. Entrepreneurship is the central force driving economic activity and prime catalyst in development. Hence, it forms an essential component in the development. The findings of this study may help the administrators and policy makers to know the entrepreneurial behaviour of farmers, the relationship between socio-economic characteristics with entrepreneurial behaviour and reasons for growing safed musli and may help them to come out with the suitable

policies and programmes. The study may also help in further investigations on entrepreneurial behaviour of safed musli growers.

Limitations

Being student research project the study suffered from following limitations:-

The study was conducted in the villages of Akot Panchayat Samiti of Akola district and Jalgaon jamod Panchayat samiti of Buldana district in Maharashtra. This being student study time, money and other resources do not permit the researcher to cover the large area that would be taken for the study. Hence findings were applicable to this area or at other places where social and agro climatic conditions are similar.

Chapter II

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

Research is a continuous process for any scientific investigation, previous findings provide basis to the research. The review of literature is one of the important aspects in the research process. It helps the researcher to keep his work going in right and appropriate direction. Hence, an attempt has been made to review the researches and the same have been presented in the following sequence. Similarly, conceptual model developed have also been delineated, as below:

2.1 Profile of safed musli growers.

2.2 Entrepreneurial behaviour of safed musli growers.

2.3 Constraints faced by safed musli growers

2.4 Conceptual model

2.1 PROFILE OF SAFED MUSLI GROWERS

A. Independent Variables

2.1.1 Age

Vijay Kumar (2001) reported that majority of the respondents (50.83%) belonged to middle age category, followed by 30.84 per cent of young age category and 18.33 per cent old age category.

Bhagyalaxmi *et al.* (2003) found that majority (66.67%) of the respondents belonged to middle age group followed by young age (22.22%) and old age (11.11%).

Murali and Jhamtani (2003) reported negative significant relationship between age and entrepreneurial behaviour.

Subramanyeswari (2003) observed that majority of the respondents (52.50%) were middle aged, followed by young (29.00%) and old age (18.50%) categories.

Anitha (2004) observed that there is positive significant relationship between age and entrepreneurial behaviour of respondents.

Suresh (2004) observed that 64.58 per cent of respondents belonged to middle age group, followed by 17.92 per cent in young age group and 17.50 per cent in old age group.

Sadanshiv (2006) observed that most of the floriculturists in study area were in age group of 36 to 50 years.

Thakare (2013) found that nearly half of the respondents (46.67%) belonged to middle age group, followed by 31.67 per cent in young age group and 21.67 per cent in old age group.

2.1.2 Education

Goud (1990) reported that 25.40 per cent of farmers were illiterate, followed by 24.3 per cent of respondents who had education upto primary school level.

Baswarajaiah (2001) reported that education status among the farm families of Mahaboobnagar district 70.00 per cent, primary school (11.67%), middle school (8.33%), high school (4.17%) and college education (4.17%).

Vijay Kumar (2001) observed that majority of the respondents (31.66%) had education upto primary school level and the illiteracy level among the respondents was only 11.66 per cent.

Wase (2001) showed that relatively higher proportion of respondents were primary school educated (29.17%), followed by 25.83 per cent respondents having college education and only 5.84 per cent respondents were illiterate.

Murali and Jhamtani (2003) reported that entrepreneurship behaviour was significantly and positively related to education.

Anitha (2004) observed that education had a negatively significant relation with entrepreneurial behaviour of farm women.

Sadanshiv (2006) noted that majority of the floriculturists were having education either up to college or high school level.

Thakare (2013) reported that nearly one third of the respondents (30.00%) were educated up to high school level.

2.1.3 Land holding

Patil *et al.* (1999) observed that size of the land holding was non-significantly related with entrepreneurial behaviour of the littlegourd growers.

Nomesh Kumar and Narayanaswamy (2000) indicated that there were significant differences in the entrepreneurial behaviour of farmers having different sizes of land holding.

Subramanyeswari and Veeraraghava Reddy (2003) reported that land holding was found to have significant relationship with their entrepreneurial behavior.

Suresh (2004) conducted a study on entrepreneurial behavior of milk producers in Andhra Pradesh and observed that majority of the respondents (68.75%) were having medium size of land holding followed by large (19.17%) and small (12.08%) size of land holding.

Sadanshiv (2006) found that majority of the floriculturists were in semi medium (2.01 to 4.00 ha.) category of land holdings.

Thakare (2013) found that maximum number of the respondents (44.17%) possessed semi medium category of land holding (2.01 to 4.00 ha).

2.1.4 Sources of irrigation

Narayanmurthy (2006) reported that coverage of irrigation in vidarbha region is only 14.00 per cent to total cropped area.

Naik (2006) reported that the proportion of gross irrigated area to gross cropped area was only 16.40 per cent against 38.20 per cent at national level.

Patil (2006) stated that though the number of irrigation projects increased in Vidarbha and Maharashtra they were mostly incomplete and hence the irrigation potential could not be exploited.

Sadanshiv (2006) reported that sources of irrigation were found to have significant relationship with adoption of improved cultivation practices for gaillardia.

Talati (2007) reported that India's 75.00 per cent of net irrigation area were severed by ground water wells.

Mohanty (2009) revealed that the large region of vidarbha remained agriculturally backward owning to the absence of any irrigation and due to erratic monsoon, as compared to western Maharashtra.

Thakare (2013) reported that sources of irrigation were found to have negative and non significant relationship with entrepreneurial behavior

of floriculture farmers also reported that relatively higher percentage of the respondents (72.50%) had well or tube well as their source of irrigation.

2.1.5 Occupation

Karpagam (2000) reported that majority of the respondents (71.66%) had only agriculture as their occupation, while others followed agriculture + dairy (11.67%) and agriculture + business (16.67%).

Anitha (2004) reported that 3.33 per cent of farm women were practicing agriculture and subsidiary enterprises in addition to other professions for income. Great majority (92.50%) of farm women were practicing agricultural and subsidiary enterprises while 4.17 per cent of farm women were dependent only on agriculture and further observed that occupation of respondents did not show significant relationship with their entrepreneurial behaviour.

Pandeti (2005) revealed that there was no significant relationship between occupation and entrepreneurial behaviour of farmers.

Deshmukh et al (2007) observed that majority of respondents (96.52%) having agriculture as main occupation.

Thakare (2013) reported that occupation was found to have significant relationship with entrepreneurial behavior of floriculture farmers also reported that maximum number of household (44.17%) were engaged in agriculture occupation.

2.1.6 Area under cultivation of safed musli

Wase (2001) concluded that majority of the respondents were having up to 2.00 ha area under chilli crop.

Deshmukh (2002) noted that majority of the paddy growers had assigned upto 1.00 acre area under paddy.

Dhande (2003) concluded that majority of paddy growers (71.33%) belonged to 1.51 to 3.00 ha. of area under rice.

Shinde (2004) showed that majority of the soybean growers possessed area under soybean from 2.68 to 4.34 acres.

Sadanshiv (2006) observed that area under floriculture did not shown any significant relationship with adoption of improved cultivation practices of marigold also found that majority of the floriculturists in study

area had 0.50 ha to 1.50 ha of land under cultivation of different flower crops.

Thakare (2013) showed that maximum number of the floriculturists (48.33%) had 0.51 to 1.50 ha area under floriculture.

2.1.7 Experience of cultivation of safed musli

Shinde et al. (2000) have found that higher proportion of farmers had farming experience between 21 to 30 years.

Ramshetwad (2001) reported that, majority of the banana growers (39.16%) had experience of 6-10 years.

Gangurde (2003) found that, maximum number of the farmers (41-56%) growing banana had experience of 5 to 8 years in banana cultivation.

Bhosale (2003) revealed that, 58.13 per cent of the pomegranate growers had experience of 7 to 11 years, while 21.25 per cent of them had experience below 6 years and the 20.62 per cent of the pomegranate growers had experience of over more than 12 years.

2.1.8 Annual income

Vijay Kumar (2001) reported that 45.84 per cent of respondents were under medium income group, followed by 27.50 per cent in low and 26.66 per cent in high income groups.

Subramanyeswari and Veeraraghava Reddy (2003) reported that there was a positive significant relationship between entrepreneurial behaviour of dairy women and dairy income.

Suresh (2004) reported that most of respondents belonged to medium income group with 80.33 per cent, followed by high and low income groups *i.e.*, 15.00 and 4.17 per cent, respectively.

Patil et al. (1999) reported that annual income of farmers and their entrepreneurial behaviour are non significantly related.

Bhopale et al (2002) observed that about 40.00 per cent respondents had an annual income upto 50,000 and above75000 annually.

Deshmukh et al. (2007) releaved that, majority of respondent (81.59%) fall under medium level of income having Rs.1001 to 87,000 per annum.

Thakur (2007) reported that majority of respondents 37.33 per cent had their annual income ranging from Rs.50000 to 2,00,000.

Thakare (2013) reported that maximum number of the respondents (30.83%) had high level of annual income.

2.1.9 Sources of information

Mahajan (2000) noted that, maximum numbers of banana growers 64.70 per cent were having medium level of exposure to different sources of information about cultivation practices of banana.

Marimuth (2000) found that, more than fifty per cent (53.54%) of banana respondents belong to low level information sources utilization.

Ramshetwad (2001) observed that, maximum number of banana growers (62.51%) had an access to the various sources of information at middle level.

Karale (2006) observed that, majority of the respondents 61.67 per cent were having medium level of exposure to different sources of information about grape cultivation. More than one fourth 28.33 per cent of the respondents were having lower exposure to different sources of information. Only 10.00 per cent of the respondents had high exposure to various sources of information for seeking information about grape cultivation.

Jadhav (2008) showed that the two third of the respondents 66.67 per cent have utilized the medium level of source of information, followed by 20.00 per cent of the respondents had utilized high level of sources of information,13.33 per cent of respondents had utilized low levels of sources of information.

Thakare (2008) observed that majority of the respondents 75.34 per cent were having high level of sources of information, while 23.33 per cent of the respondents were having medium level of sources of information. Only 1.33 per cent of the respondents were having low level of sources of information about grape cultivation.

Pal et al. (2009) revealed that the access to the different cosmopolite sources was low as compared to inter personal localite sources. The farmers relied more on neighbourers and private companies, dealers for information access.

2.1.10 Extension contact

Angadi (1999) found that majority of the respondents *i.e.*, 65.62 per cent had contact with Agricultural Assistant whenever there was a problem, while 62.50 per cent of the respondents had no contact with Agricultural Officer. Only 13.12 per cent had contact with Scientists whenever there was a problem.

Patil *et al.* (1999) reported that there was a non-significant relationship between extension contact and the entrepreneurial behaviour of farmers.

Ramanna *et al.* (2000) revealed that 70.00 per cent of the respondents had medium level extension agency contact and 30.00 per cent of the respondents had maximum level extension agency contact.

Nagesha (2005) conducted a study on entrepreneurial behaviour of vegetable seed growers and reported a non- significant relationship between extension contacts and entrepreneurial behaviour of farmers.

Ambhore (2006) found that majority of respondents (47.33%) kept extension contact to a moderate extent.

Kale et al (2011) reported that the cent per cent of selected farmer having low extension contact level in poorna command area in Vidharbha of Maharashtra.

Thakare (2013) reported that maximum number of the respondents (40.00%) having moderate extension contact, followed by 36.67 per cent of the respondents having low extension contact and only 23.33 per cent of the respondents having high extension contact.

2.1.11 Scientific orientation

Karpagam (2000) reported that majority of the respondents (75.00%) were in medium category followed by low category 13.33 per cent and high category 11.67 per cent with respect to scientific orientation.

Bhosale (2003) concluded that above half (50.67%) of the respondent orange grower had medium level of scientific orientation, while 25.37 per cent and 24.00 per cent of respondent possessing low and high level of scientific orientation respectively.

Patel (2005) revealed that half of the respondents had medium level of scientific orientation.

Kadam et al (2010) observed that, the majority (68.66%), of the respondents had medium scientific orientation to cultivate the sugarcane crop.

Thakare (1013) reported that annual scientific orientation of respondents was having non significant relationship with entrepreneurial behavior also found that maximum number of the respondents (40.00%) belonged to medium level of scientific orientation.

2.1.12 Knowledge about cultivation of safed musli

Mahajan (2000) reported that, majority of the banana growers (64.00%) found to have knowledge about recommended practices of banana upto medium extent.

Wane (2000) revealed that 56,66 per cent respondents had the knowledge about recommended package of practices for soybean crop to moderate extent followed by low level (22.67%) and 20.67 per cent in high level knowledge.

Asane (2003) revealed that majority of the respondents (62.50%) possess medium level of knowledge, followed by 21.67 per cent had high level and 15.83 per cent had low level knowledge about soybean cultivation practices.

Gawande (2005) observed that majority of the respondents (71.33%) were in medium category of the knowledge, this was followed by high category, which comprised 15.34 per cent and remaining 13.33 per cent of respondents were found in low category.

Kadam et al (2010) observed that, the majority (61.33%), of the respondents had medium level of knowledge of sugarcane cultivation.

2.2 ETREPRENEURIAL BEHAVIOUR OF SAFED MUSLI GROWERS

B. Dependent Variables

Entrepreneurial behavior

Vijay Kumar (2001) indicated that 47.50 per cent of respondents had low entrepreneurial behaviour, followed by 31.66 per cent with medium and 20.84 per cent with high entrepreneurial behaviour, respectively.

Thakare (2013) observed that about two third (64.34%) of the floriculturists belonged to medium category of entrepreneurial behaviour, followed by 20.83 per cent of floriculturists belonged to high level of

entrepreneurial behaviour, where as 15.83 per cent of floriculturists belonged to low entrepreneurial behaviour.

Thakare (2013) revealed that among the selected variables sources of irrigation, annual income, extension contact and scientific orientation were non significantly correlated with the entrepreneurial behaviour, whereas age, education, occupation, land holding and area under floriculture were positively and significantly correlated with the entrepreneurial behaviour.

Components of entrepreneurial behaviour of safed musli growers

2.2.1 Innovativeness

Bhagyalaxmi *et al.* (2003) observed that majority (69.44%) of the respondents had medium innovativeness while 15.56 and 15.00 per cent of respondents had high and low innovativeness, respectively.

Suresh (2004) on entrepreneurial behaviour of milk producers indicated that the milk producers in the district had medium, high and low innovativeness in the order of 55.00, 24.58 and 20.42 per cent, respectively.

Thakare (2013) observed that half of the respondents (50.00%) had medium level of innovativeness, followed by 44.00 per cent of respondents had high level of innovativeness and only 6.00 per cent of the respondents had low level of innovativeness.

2.2.2 Achievement motivation

Vijay Kumar (2001) reported that 44.16 per cent of respondents had medium achievement motivation, followed by 28.34 and 27.50 per cent of respondents with low and high achievement motivation, respectively.

Suresh (2004) indicated that 61.25 per cent of the respondents had medium achievement motivation, followed by 20.42 per cent and 18.33 per cent with low and high achievement motivation respectively.

Nagesha (2005) found that majority (71.70%) of the respondents had medium achievement motivation, followed by 15.00 and 13.30 per cent of respondents having low and high achievement motivation, respectively.

Thakare (2013) reported that majority of floriculturists (74.17%) had medium level of achievement motivation, followed by 15.00 per cent of

floriculturists had high level of achievement motivation whereas, only 10.83 per cent of floriculturists had low level of achievement motivation.

2.2.3 Decision making ability

Vijay Kumar (2001) observed that near about fifty per cent (46.66%) of the respondents had medium decision making ability, followed by low (27.50%) and high (25.84%) decision making categories.

Suresh (2004) observed that majority of milk producers had medium level of decision making ability (65.83%), followed by low and high with 21.67 and 12.50 per cent, respectively.

Nagesha (2005) found that majority (74.20%) of the respondents belonged to intermediate decision making ability, followed by 13.30 and 12.50 per cent, having less rational and rational decision making abilities, respectively.

Thakare (2013) found that majority of the respondents (65.00%) fell in to medium category of decision making ability, followed by 20.00per cent of respondents fell into low category and only 15.00 per cent of respondents fell into high category of decision making ability.

2.2.4 Economic motivation

Chauhan and Patel (2003) reported that slightly less than half (48.47%) of the poultry entrepreneurs had medium level of economic motivation while 31.25 per cent and 20.00 per cent had high and low level of economic motivation, respectively.

Sadanshiv (2006) found that the majority of the floriculturists in study area were medium in respect of their level of economic motivation.

Tilekar (2010) reported that majority of the soybean growers (72.00%) belonged to medium category of economic motivation.

Thakare (2013) reported that more than half of the floriculturists (57.50%) fell under medium category of economic motivation, followed by 23.33 per cent and 19.17 per cent of respondents fell under low and high of economic motivation, respectively.

2.2.5 Risk orientation

Subramanyam (2002) revealed that 75.00 per cent of the trained farmers had medium risk preference, followed by high (13.34%) and low (11.66%) levels of risk preference.

Bhagyalaxmi *et al.* (2003) revealed that majority of the respondents (70.56%) had medium risk orientation, followed by low (15.56%) and high (13.33%) risk orientation categories.

Suresh (2004) inferred that majority of respondents had medium level of risk orientation, followed by low and high level at the rate of 62.02, 24.58 and 13.34 per cent, respectively.

Thakare (2013) revealed that majority of the floriculturists (63.33%) had medium level of risk orientation, followed by 24.17 per cent of respondents had high risk orientation whereas, 12.50 per cent of the respondents had low level of risk orientation.

2.2.6 Leadership ability

Vijay Kumar (2001) reported that 36.66, 32.60 and 30.84 per cent of total respondents fell under low, medium and high leadership ability categories, respectively.

Suresh (2004) conducted a study on entrepreneurial behaviour of milk producers in Andhra Pradesh and reported that among the respondents, 67.92 per cent had medium level of leadership ability, 16.25 per cent had low and remaining 15.83 per cent had high level of leadership ability.

Nagesha (2005) found that, 49.20 per cent of the respondents belonged to medium level of leadership ability, followed by 25.80 and 25.00 per cent of the respondents having low and high level of leadership ability, respectively.

Thakare (2013) found that majority of respondents (72.50%) belonged to medium level leadership ability, followed by 15.83 and 11.67 per cent of the respondents having low and high leadership abilities, respectively.

2.2.7 Management orientation

Chauhan and Patel (2003) reported that 71.25 per cent of the poultry entrepreneurs had medium to high degree of management orientation.

Nagesha (2005) found that 66.70 per cent of the respondents belonged to medium category of management orientation, followed by 19.20 per cent of the respondents having low level management orientation

and 14.2 per cent of respondents having high level management orientation.

Thakare (2013) reported that majority of the respondents (70.00%) had medium management orientation, followed by equal percentage (15.00%) of the respondents having high and low management orientation, respectively.

2.3 Constraints faced by safed musli growers

Rameshetwad (2001) found that, lack of information about appropriate insecticide/ pesticide (81.00%) and lack of information sources (36.66%) were the major constraints faced by the banana growers.

Kavaskar and santha (2003) revealed that, lack of technical guidance was the constraints faced by 78.33 per cent of the banana growers, lack of enthusiossum in extension personnel to provide latest information on cultivation practices were another constraints experienced by the banana growers in utilizing information sources.

Thakare (2013) stated that although there is good scope for export of flowers and live plants, India does not have peripheral presence in global trade and infrastructure is inadequate for the production of floral for export. This leads to inadequate surplus, which may otherwise be exported. Apart from this lack of appropriate planting material, production technology and lack of basic inputs were observed as their problems.

Kaid et al (2005) found that the major constraints faced by the fennel growers were lack of technical guidance (49.17%), more problem of disease and insect (48.33%),non getting remunerative price of the produce (47.50%),long duration crop (43.33%),higher charge and irregular supply of electricity (39.17%).

Nagesha (2005) found that majority of the respondents faced problem such as high cost for fertilizers, manures and FYM, high wages of labour, non-availability of skilled labour and lack of transportation and storage facilities were faced by 87.5, 80.8 and 61.6 per cent of respondents, respectively.

Sadanshiv (2006) found that among the different categories of constraints high cost of seeds of improved variety (87.50%), frequent load shading and power cuts (84.61%), lack of knowledge about packaging of flowers for marketing (76.92%), non availability of FYM in village (75.00%) and lack of constant water supply for irrigation throughout the year (73.07%) were the major constraints encountered and reported by the respondents in adoption of improved cultivation practices for marigold and gaillardia flower crops.

Singh et al. (2006) concluded that, agriculture supervisor make very less visits to farmers field and not available whenever needed by the farmers, lack of proper knowledge about information agencies, irregularity of information about farm practices were the most perceived constraints by the farmers in using various sources and channels of information.

2.4 Conceptual model

Any systematic study is based on sound theoretical model. A researcher develops conceptual model for the purpose of his study, since, it helps in rational thinking about research problem and represents the conceptualization of the concepts used in research study.

Based on the discussion on forgoing review of the past research studies, a conceptual model has been developed for the present investigation in Fig.1.

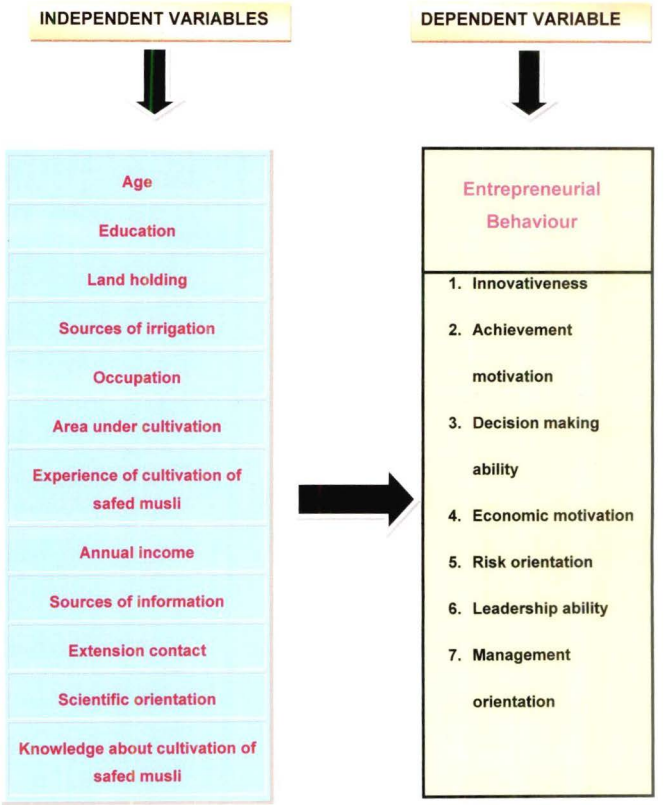


Fig.1. Conceptual model of study

Chapter III

Methodology

CHAPTER III

METHODOLOGY

The main purpose of this chapter was to describe the research methods and techniques used in present study. The various aspects included in this chapter have been described with relevant details under following heads.

3.1 Research design used in study

3.2 Locale of the study

3.3 Variables and their measurements

3.4 Preparation of interview schedule

3.5 Sampling procedure

3.6 Collection of data

3.7 Constraints faced by safed musli growers

3.8 Analysis of data and statistical techniques used

3.1 Research design used in study

An exploratory design of social research was used for present study aims at assessing the entrepreneurial behaviour of safed musli growers.

3.2 Locale of the study

The present study was conducted in Akot tahsil of Akola district and in Jalgaon jamod tahsil of Buldana district of Western vidarbha region of Maharashtra state, where cultivation of safed musli crop is a regular practice followed since long by large number of farmers.

3.3 Variables and their measurement

3.3.1 Study of Variables, Operational Definitions, Empirical Measurements and their Categorization

A. Independent variables

3.3.1.1 Personal, socio-economic and psychological characteristics

1) Age

It is referred to the chronological age of the respondents in completed years at the time of investigation. The categorization was done on the basis of actual age of farmers at the time of data collection.

Age	Years
Young	Up to 35
Middle	36-50
Old	Above 50

2) Education

It refers to the formal schooling of an individual from school to University degree. Categorized as follows:-

Sr.No.	Education	Standard passed
1	Illiterate	No school
2	Primary school	1^{st} to 4^{th}
3	Middle school	5^{th} to 7^{th}
4	High school	8^{th} to 10^{th}
5	College	Above 10^{th}

3) Land holding

It refers to the number of hectares of land possessed by the farmer. Using the criteria prescribed by the Government of Maharashtra, the respondents were categorized as below.

Sr. No.	Category	Land holding (in hectares)
1	Marginal farmers	Up to 1.00
2	Small farmers	1.01 to 2.00
3	Semi-medium farmers	2.01 to 4.00
4	Medium farmers	4.01 to 10.00
5	Big farmers	Above 10.00

4) Sources of Irrigation

It refers to irrigation facilities available with selected respondents.

It was ascertained and the categorization and scoring procedure developed by Thakare (2004) in his socio-economic status scale was used for measurements of irrigation facilities as follows.

Sr. No.	Sources of Irrigation	Score
1	No source	0
2	River	1
3	Well / Tube well	2
4	Canal	3

5) Occupation

It is operationalized as the activities in which the farmer and his family are regularly engaged and get major income out of them. The scoring procedure given by Thakare (2004) was used as given below.

Sr. No.	Occupation	Scores
1	Agriculture	1
2	Agriculture + Labour	2
3	Agriculture + Subsidiary occupation	3
4	Agriculture + Services	4

6) Area under cultivation of safed musli

It is operationally defined as the land put under cultivation of safed musli crop by the individual respondents. The actual area put up (in hectares) under safed musli by individual respondent was considered as score and then the respondents were grouped into the categories on the basis of obtained score as follows.

Sr. No.	Category	Area under cultivation of safed musli (ha)
1	Low	Up to 0.50 ha
2	Medium	0.51 to 1.50 ha
3	High	Above 1.50 ha

7) Experience of cultivation of safed musli

It has been operationally defined as number of years an individual is engaged in farming as his main occupation on his farm and other farms. Number of years of experience was considered for relational analysis. Respondents as per the farming experience were categorized on the basis of obtained score as follows.

Sr. No.	Category	Experience of cultivation of safed musli
1	Low	Up to 5 yrs
2	Medium	6 to 10 yrs
3	High	11 to 15 yrs

8) Annual income

Annual income of the family of the respondents was determined by considering the total income of the family from all the sources in one year and expressed in terms of rupees. Based on the total annual income of the respondents were categorized into groups by equal interval method as given below.

Sr. No.	Annual income levels (Rs.)
1	Up to 75000
2	75001 to 150000
3	150001 to 225000
4	225001 to 300000
5	Above 300000

9) Sources of information

The sources of information are operationally defined as degree of different information sources consulted by the safed musli growers for seeking technical information.

Scoring was done on the basis of their response to the sources of information. A score of 2 to regular, 1 to occasional and zero for never responses for seeking the information thus, total score for each individual was calculated and this was considered as individual score for information. On the basis of equal interval method the respondents were categorized into three groups viz. low, medium and high.

Sr. No.	Category	Score range
1	Low	Up to 13
2	Medium	14 to 26
3	High	Above 26

10) Extension contact

It is operationalized as the awareness of the respondents about various extension agencies and their frequency of contact with them to acquire information or seek advice related to farming.

This variable was quantified by adopting the procedure followed by Sakharkar (1995). It was carried out as follows.

Sr. No.	Category	Score range
1	Low	0 to 8
2	Medium	9 to 16
3	High	Above 16

11) Scientific orientation

Scientific orientation is operationalized as the degree to which farmer is oriented to the use of scientific methods in decision making in farming.

It was measured with the help of a scale developed by Supe (1969). The scale is of six statements amongst which the second statement alone was negative. The respondents for each statement was rated over a five point continuum viz. strongly agree, agree, undecided, disagree, strongly disagree. The minimum and maximum score range from 6 and 30. Higher score indicated better orientation towards scientific farming.

Respondents were further grouped into different categories on the basis of mean and standard deviation.

Sr. No.	Category	Score range
1	Low	(Up to 17)
2	Medium	(18 to 21)
3	High	(Above 22)
	Mean = 19.76	**SD = 2.77**

12) Knowledge about cultivation of safed musli

Knowledge is operationally defined as the body of awareness and information possessed by an individual safed musli grower about cultivation practices of safed musli.

It was measured with the help of teacher made knowledge test, which was develop in consultation with scientist, research articles and scientific publications. A teacher made knowledge test consist of improved cultivation practices for safed musli crop. The knowledge test composed of items as questions. The score of 1 for yes response and 0 for no response were given. The obtained knowledge score was converted into Knowledge index with the help of following formula.

$$\text{Knowledge index} = \frac{\text{Obtained knowledge score}}{\text{Maximum obtainable knowledge score}} \times 100$$

The respondents were categorized as indicated below.

Sr. No.	Knowledge level	Index
1	Low	Up to 33.33
2	Medium	33.34 to 66.66
3	High	Above 66.67

B. Dependent variable

3.3.1.2 Entrepreneurial Behaviour

Entrepreneur – Definitions

Joshi and Kapur (1973) described farm entrepreneur as the person or a group of persons who organize and operate the business and is responsible for the results *i.e.*, losses and gains from the business. He is pioneer in organizing and developing the farm.

Porchezhian (1991) defined farm entrepreneur as one who maintains one or more enterprises like poultry, dairy and sericulture apart from the main occupation of crop husbandry.

Concept of Entrepreneurship

Vijayalakshmi (1992) reported that entrepreneurship is the ability to co-ordinate and organize, manage and maintain and reap the best out of even the worst situations.

Ganeshan (2000) stated that entrepreneurship is the capacity for innovation and caliber to introduce innovative techniques in the business operations.

Thus, entrepreneurship is composite of skills which results in ability to co-ordinate, capacity to innovative and caliber to introduce innovative techniques and finally to achieve predetermined goals, which leads to reap the final benefits.

Entrepreneurial Behaviour

Entrepreneurial behavior is the result of an interaction of individual, situational, psychological, social and experimental factors (Rao, 1985)

Rao (1999) Entrepreneurial behavior is the package of personality characteristics/dimension and environmental factors related to dynamic agent of change for transforming physical, natural and human resources into corresponding production possibilities.

According to Misra (2000) entrepreneurial behavior is the constellation of functions, activities and actions involved in the opportunities and the creation of organization.

For the present study, entrepreneurial behaviour of safed musli growers is operationally defined as cumulative outcome of seven selected components of entrepreneurial behaviour *viz.* ,innovativeness, achievement motivation, decision making ability, economic motivation, risk orientation, leadership ability and management orientation was measured by using the following methods:-

3.3.1.3 Methods used for measurement of dependent variable

1) Innovativeness

This refers to the behaviour pattern of an individual who has interest and desire to seek changes in farming techniques and is prepared to introduce such changes into his operations wherever practical and feasible.

For quantifying the innovativeness characters of the respondents Moulik's (1965) self rating innovativeness scale as used by Sakharkar (1995) was followed.

The original scale consists of three sets of statements. Each set of statements contained three statements with weightages 2, 1 and 0 indicating high, medium and low degree of innovativeness.

After obtaining the responses as "most like" and "least like" choices as in original scale for each of the three sets of statements the scoring was done by assigning score "2" to "most like" and score "1" for "least like".

The final scoring was arrived by summing up the scores of the weightage of the "most like" statements and the weightage of the "least like" statements. As there were three sets of statements for innovativeness scale, the sums of scores for the three sets were considered for each respondent. Self rating score for innovativeness ranged from 18 to 54. The respondents were then categorized into three categories based on equal interval method as the measure of check. High score of the respondent reveals his more innovative nature.

Sr. No.	Category	Score Range
1	Low	Up to 18
2	Medium	19 to 36
3	High	Above 36

2) Achievement motivation

It was operationalized as the desire for excellence to attain a sense of personal accomplishment. It was measured with the help of procedure adopted by Chandrapaul (1998).

The instrument consisted of five statements and responses were obtained on two point continuum. A weightage of 2 and 1 respectively were assigned to the response categories in the case of positive statements and the scoring was reversed for negative statements. The total score of the respondents on their achievement motivation was arrived by summing up the weightages of responses for each statement. Thus, the total score for each farmer on his achievement motivation ranged from 5 to 10.

Based on the total score obtained by respondents on achievement motivation, they were grouped into the following three categories, by using equal interval method.

Sr. No.	Category	Score Range
1	Low	Up to 3.33
2	Medium	3.34 to 6.66
3	High	Above 6.66

3) Decision making ability

The decision making ability of a farmer is operationally defined as the degree of weighing the available alternatives in terms of their desirability and their likelihoods and choosing the most appropriate one for achieving maximum profit on his farming.

The scale developed by Supe (1969), which was also adopted by Rao (1999) with suitable modifications was found to be more appropriate to measure decision making ability of farmers. Hence, it was used in the present study with suitable modification.

The original scale of Supe (1969) contained eight items on package of practices for cotton crop. These items were modified for measuring the decision making in choosing the different alternatives of package of practices in general.

The weightages of 3, 2 and 1 as suggested by Supe (1969) were assigned to the three rationality levels namely 'rational', 'inter mediate' and 'less rational', respectively. Thus, the possible score for each farmer on his decision making ability ranged from 7 to 21.

Based on the total score obtained by respondents on decision making, they were grouped into following three categories, on equal interval basis.

Sr. No.	Category	Score Range
1	Low	Up to 7
2	Medium	8 to 14
3	High	Above 14

4) Economic motivation

It refers to the values or attitudes which attach greater importance to profit maximization with the ends and means.

This variable was measured with the help of scale developed by Supe (1969). It consists of six statements of which first five statements are positive and last one is negative. The responses for each statements was rated on a five point continuum namely strongly agree, agree, undecided,

disagree and strongly agree. With the scores of 5, 4, 3, 2 and 1 for positive statements and 1, 2, 3, 4, and 5 for negative statements, respectively.

Maximum and minimum score, an individual could obtain on this scale were 30 and 6 respectively. Higher score revealed that the respondent is motivated towards profit maximization to a greater degree.

Based on the total score obtained by respondents on economic motivation, they were grouped into following three categories, on the basis of equal interval method.

Sr. No.	Category	Score Range
1	Low	Up to 10
2	Medium	11 to 20
3	High	Above 20

5) Risk orientation

Risk orientation was operationalized as the degree to which the farmer is oriented towards risk and uncertainty in facing problems in farming.

In the present study, risk orientation of respondents was measured with the help of a scale developed by Supe (1969). The scale contained five statements. Modification in the scoring procedure was made by giving a weightage of 3 for the 'agree' response 2 for 'undecided' response and 1 for 'disagree' response in case of positive statements. This was reversed in case of negative statements. The aggregate of weights over five statements was the total score of a respondent on this variable. The possible score range was from 5 to 15.

Based on the total score obtained by the respondents on risk orientation, they were grouped into three categories with the help of equal interval method.

Sr. No.	Category	Score Range
1	Low	Up to 5
2	Medium	6 to 10
3	High	Above 10

6) Leadership ability

Leadership ability was operationalized as the degree to which an individual initiates or motivates the action of others.

Scale developed by Nandapurkar (1980) with suitable modifications was used to measure leadership ability.

In the present study, leadership ability was measured along a three point rating scale "Always", "Sometimes" and "never" with decreasing score from 2, 1 and 0 respectively. The total score was computed for each respondent by summing up the scores record.

Based on the total scores obtained, the respondents were classified into three categories with the help of equal interval method.

Sr. No.	Category	Score Range
1	Low	Up to 3.33
2	Medium	3.34 to 6.66
3	High	Above 6.66

7) Management orientation

It refers to the degree to which a farmer is oriented towards scientific farm management comprising planning, production and marketing functions on his farm.

In order to know the respondents management orientation, the scale developed by Samanta (1977) was used. The scale consists of 16 statements representing planning, production and marketing aspects. In each group, positive and negative statements were mixed retaining more or less a psychological order of statements.

The positive statements were given scores of 5, 4, 3, 2 and 1 for strongly agree, agree, undecided, disagree and strongly disagree, respectively. The scoring was reversed in case of negative statements. Thus, the maximum and minimum scores each respondent could obtain were 80 and 16, respectively.

Based on the total score obtained by the respondents on management orientation, they were grouped into following three categories, on equal interval basis.

Sr. No.	Category	Score Range
1	Low	Up to 26.66
2	Medium	26.67 to 53.32
3	High	Above 53.32

3.3.1.4 Overall Entrepreneurial Behaviour

Operational Definition

For the present study, entrepreneurial behaviour of safed musli growers is operationally defined as cumulative outcome of seven selected components of entrepreneurial behaviour *viz., innovativeness*, achievement motivation, decision making ability, economic motivation, risk orientation, leadership ability and management orientation was measured.

Entrepreneurial behaviour was measured with the help of entrepreneurial behaviour index by addition of scores of seven attributes namely innovativeness, achievement motivation, decision making ability, economic motivation, risk orientation, leadership ability and management orientation. The total obtained score was converted into entrepreneurial behaviour index. The entrepreneurial behaviour index was calculated by the following formula.

$$\text{Entrepreneurial Behaviour Index (EBI)} = \frac{\text{Sum of obtained score on seven entrepreneurial components}}{\text{Maximum obtainable score on seven entrepreneurial components}} \times 100$$

The respondents were component wise classified into three categories viz. low, medium and high, respectively on the basis of equal interval method as given below.

Sr. No.	Category	Index Range
1	Low	Up to 33.33
2	Medium	33.34 to 66.66
3	High	Above 66.66

3.4 Preparation of interview schedule

Taking into consideration the objectives of the study a detailed interview schedule was prepared with help of technical guidance from the extension experts of Department of Extension Education, horticulturists and available literature. While preparing the schedule, attention was given to make the questions simple, self explanatory with clarity, so that the respondents could understand the same and give the responses more accurately.

3.5 Sampling procedure, sample, techniques of data collection used

3.5.1 Selection of Panchayat Samiti and villages

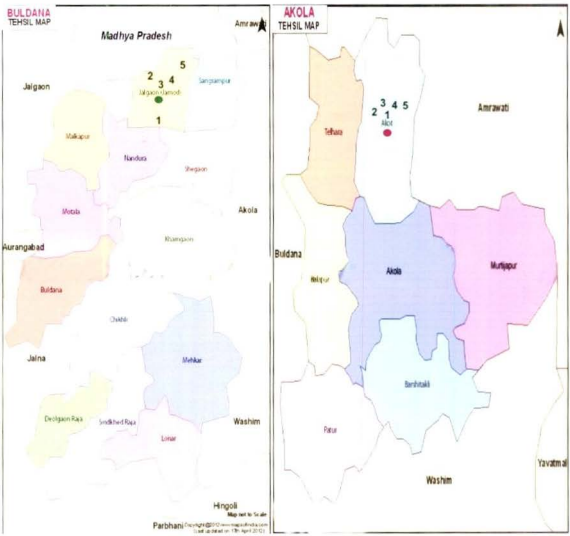
Akot Panchayat Samiti from Akola district and Jalgaon jamod Panchayat samiti from Buldana district which occupy first place in terms of safed musli growing area hence these were selected purposively.

3.5.2Selection of villages

Villages were selected on the basis of more number of safed musli growers. Five villages from Akot panchayat samiti and five villages from Jalgaon jamod panchayat samiti were selected randomly listed in table 1.

Table1. Villages selected for the study

Sr .No.	Name of villages	Respondents
A	**Akot**	
1	Bordi	10
2	Sukali	10
3	Nagapur	10
4	Ramapur	10
5	Ladegaon	10
	Total A	**50**
B	**Jalgaon jamod**	
1	Sungaon	10
2	Wayal	10
3	Jamod	10
4	Khamkhed	10
5	Wadgaon	10
	Total B	**50**
	Grand Total	**100**



Jalagaon Jamod (Taluka)

1. Wadgaon
2. Wayal
3. Sungaon
4. Khamkhed
5. Jamod

Akot (Taluka)

1. Nagapur
2. Ladegaon
3. Bordi
4. Ramapur
5. Sukali

Fig.2. Map of Akola and Buldana districts

3.5.3Selection of respondents

A list of safed musli growers living in these ten villages was obtained from Talathi office of the village. Ten respondents were selected from each village by random sampling method, making a sample size of 100 in total.

3.6 Collection of data

The data were collected through face to face contact method by contacting selected farmers. The farmers were contacted at their home or on their farm as per their convenience.

3.7 Constraints faced by the safed musli growers

Constraints refer to the difficulties faced by safed musli growers in production and management aspects of safed musli production. Difficulties expressed by safed musli growers were listed out. The frequency and percentages of each constraint was worked out for interpretation.

3.8 Statistical methods and formulae used for analysis of the data

Following statistical techniques were used in the present study for analysis of data

1. Arithmetic mean (X)

It was calculated by summing all the score and dividing it by number of respondents.

$$\overline{X} = \frac{\Sigma X}{N}$$

Where,

$\overline{X}$ = Arithmetic mean

ΣX = Sum of respondent score

N = Number of respondents

2. Standard deviation

It is measured of variability calculated around mean. The formula as under

$$\sigma = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n}}$$

Where,

s - Standard deviation

SX^2 - Sum of square of X series

$(SX)^2$ - Square of sum of X series

n - No. of respondents

3. Coefficient of correlation

The relationship between independent and dependent variables was calculated with the help of following given formula.

$$r = \frac{SXY - (SX)(SY)}{\sqrt{[NSX^2 - (SX)^2][NSY^2 - (SY)^2]}}$$

Where, r = Coefficient of correlation

SX = Sum of the score of variable X

SY = Sum of the score of variable Y

SXY = Sum of products of 'X' and 'Y' variables

SX^2 - Sum of the square of 'X' variable

SY^2 = Sum of the square of 'Y' variable

N = Total number of respondents

Plate 1. Field of safed musli

Plate 2. Safed musli crop at flowering

Plate 3. Harvested roots of safed musli

Plate 4. Safed musli roots after washing and peeling

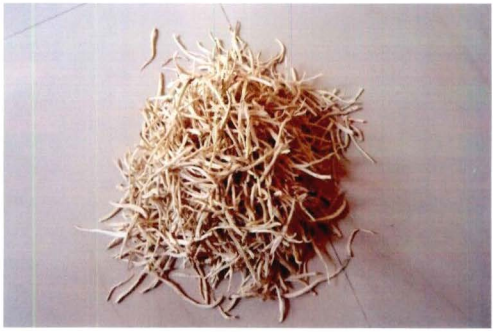


Plate 5. Dried roots of safed musli

Plate 6. Interaction with the farmers at the time of data collection

Chapter IV

Socio-economic status of Akola and Buldana Districts

CHAPTER IV

SOCIO-ECONOMIC STATUS OF AKOLA AND BULDANA DISTRICTS

The finding of any field research study in agriculture at the micro level can not be generalized at the national level. However, finding of each study can be taken for granted as relevant for those areas having similar condition with regards to other factors. The finding therefore, must follow a clean mention about the socio-economic features of study area to facilitate better understanding of the observation and also to apply same in other areas with similar features. The present chapter is therefore devoted to discus in brief some of the socio-economic features of Akola and Buldana districts, just to facilitate comparison and to get better idea of the economy.

Maharashtra state has six revenue divisions viz., Mumbai, Pune, Nasik, Aurangabad, Amravati and Nagpur. Vidarbha area includes Amravati and Nagpur revenue division comprising eleven districts viz., Buldana, Akola, Washim, Yevatmal, Wardha, Nagpur, Bhandara, Gondia, Chandrapur and Gadchiroli. Nagpur division includes Bhandara, Gondia, chandrapur, Gadchiroli and Wardha are the eastern district of Vidarbha. The western districts are Buldana, Akola, Amravati, Yevatmal and Washim. The western districts are known for its cotton crop and the eastern region is for good quality of rice. Vidarbha as a whole contributes cotton, rice, jowar, millets, oilseeds, soybean, citrus, forest timber etc.

The present study is confined to Akola and Buldana districts of Western Vidarbha. The agro-climatic conditions differ from place and even in close vicinity also.

4.1 Location of districts

Akola district falls in Vidarbha region of Maharashtra. It comprises of 7 tehsils. It lies between 20^0 17' and $21^0$18' north latitudes and 76^0 17' and 77^0 14' east latitudes. It covers area of 5417 sq.km. accounting for 1.76 % of the total area of Maharashtra. Akola district is surrounded by Amravati district in North, part of Amravati district and Yevatmal district in the East, Washim and Yawatmal district to the South and Buldhana district toward West.

Buldana district lies between 19^0 51' and 21^0 17' north latitutes and 76^0 38' and 76^0 43' east longitudes and it is to north corner of Maharashtra. It is surrounded by Khandwa district of M.P. in north, Jalna district of Marathwada region in south, Akola and Amravati in east and Jalgaon in west.

4.2 Topography and soil

The northern part of the Akola district lies in Purna valley which itself is a part of Tapi river basin. River Purna has formed fertile basin in Akola, Balapur and Murtizapur tehsils of Akola. Akola district is divided into 7 tehsils for smooth administration. The district ranks fourth in respect of size and fifth in respect of population among the eleven districts of Vidarbha regions of Maharashtra. The soil of the district is basically derived from volcanic trap rock and it is quite fertile. It is classified into categories as coarse soil found in south, medium black soil in the plain and deep black soil found in river valley.

The north porsion of Buldana district consists of Satpuda mountain ranges. Similarly the west portion perticularly Chikhali and Mejkar tahsil consist of Ajanta mountain ranges. It is at 360 meter high from mean sea level. The soils are varied in structure and texture. Black soils found in Chikhali and Mehkar, deep black cottan soil in Malkapur, Jalgaon jamod and Khamgaon tahsils. Other region generally consists of murmad type of soil which are considered as less fertile.

4.3 Climate and rainfall

Being away from the sea, the Akola district is extreme in climate. The weather during winter is too cool, while in summer it is to hot. The average minimum and maximum temperature extremities observed throughout the year was 10^0 C and 46.5^0 C, respectively. Akola district falls is assured rainfall zone of Maharashtra state having on an average rainfall between 750 to 1000 mm.

The climate of Buldana district is hot and dry although this city is cold and have healthy atmosphere. Some of the tahsils like Malkapur, Nandura, Jalgaon jamod, Sangrmpur, Shegaon, Khamgaon are very hot in summer. This district having annual rainfall ranges between 750-800 mm.

There were wide variations in average rainfall and number of rainy days within different tahsils of district.

4.4 Land use pattern

The details of land use pattern of Akola and Buldana district are presented in Table 2.

Table 2. Land use pattern of Akola and Buldana districts

(In oo' ha)

Sr. No.	Content	AKOLA		BULDANA	
		Area	Percentage	Area	Percentage
1	Total geographical area	5429	100.00	9671	100.00
2	Area under forest	299	5.51	83	9.13
3	Barren and uncultivable land	115	2.12	483	4.99
4	Land put on non Agricultural use	300	5.52	511	5.28
5	Culturable waste land	31	0.57	263	2.72
6	Permanent pasture and other grazing land	167	3.08	13392	138.47
7	Land under miscellaneous tree crops and groves not included in net area sown.	12	0.22	10	0.10
8	Current fallows	100	1.84	174	1.80
9	Other fallows	56	1.03	272	2.81
10	Net area sown	4349	80.11	6684	69.11
11	Area sown more than once	911	16.78	1695	17.53
12	Gross cropped area	5260	96.89	8379	86.64
13	Cropping intensity		120.95		125.36

(Source: Agricultural statistical information Maharashtra state, 2006)

4.5 Crop season and crop rotation

There are two important crop season i.e. *Kharif* and *Rabi* where as in summer season land generally remains fallow and preparatory tillage operations are under taken.

Cotton, soybean and jawar are important crops grown in *Kharif* season on large scale. Tur, mung, udid, are also grown in *Kharif* on large scale. Wheat and gram are important *Rabi* crops grown in the area. Linseed, sunflower, safflower, some spices and vegetable, fruit crop are also grown in *Rabi* season wherever the sources of irrigation is mostly through wells and cannel. The manners in which crop rotation are commonly followed is presented in Table 3.

Table 3. Crop season and crop rotation

Sr. No.	*Kharif*	*Rabi*
1	Cotton	-
2	Cotton + tur + jowar	-
3	Soybean	Gram
4	Soybean + tur	Wheat
5	Jowar	Gram
6	Cotton+ mung / udid	Safflower / wheat
7	Cotton + tur	Safflower
8	Cotton+ tur + jowar +mung	Sunflower
9	Mung	Safflower
10	Cotton + mung	-

4.6 Input supply

Agricultural inputs like seed, manure, fertilizers, insecticides, pesticides etc. are required by the farmers and made available to them through number of agricultural service centers established at district level and block level.

Maharashtra State Seed Corporation Ltd., Dr. PDKV, Akola and other private seed companies supply the quality seeds to the farmers. The farm inputs are made available to the farmers by co-operative societies and nationalize banks functioning at block level, panchayat samiti also provide inputs to the farmers. Co-operative society supply input against the loan sanctioned by the District Central Co-operation Bank to individual cultivator.

4.7 Markets

For the marketing of agricultural produce, agricultural produce market committees are functioning in the district. All tahsils are having facilities of regulated markets functioning in the district. These sub-markets are connected with roads and having facilities of banking, electricity etc.

Chapter V

Results and Discussion

CHAPTER V

RESULTS AND DISCUSSION

The data collected by adopting the procedure presented earlier in the methodology. The results obtained from the analysis of the data in accordance of the study objectives along with logical discussion have been given to interpret the observed phenomena. With the help of findings of the research studies conducted earlier in the field also been taken into account to defend the interpretation given here. The results of the study are presented under the following suitable sub-headings.

5.1 Profile of safed musli growers

5.2 Entrepreneurial behaviour of safed musli growers

5.3 Relational analysis

5.4 Constraints

5.5 Empirical model

5.1 Profile of safed musli growers

The study of profile of safed musli growers was made with reference to age, education, land holding, sources of irrigation, occupation, area under cultivation of safed musli, experience of cultivation of safed musli, annual income, sources of information, extension contact, scientific orientation and knowledge about cultivation of safed musli. The data have been furnished as below.

5.1.1 Age

The data in Table 4-, revealed that more than half of the respondents (62.00%) belonged to middle age group, followed by 26.00 per cent of safed musli growers from young age category and only 12.00 per cent of the respondents observed in old age categories. Thus, it was concluded that majority of respondents were middle age group.

Table 4. Distribution of respondents according to their age

Sr. No.	Categories	Age	Respondents (n=100)	
			Frequency	Percentage
1	Young	Upto 35 years	26	26.00
2	Middle	36 to 50 years	62	62.00
3	Old	Above 50 years	12	12.00
Total			100	100.00

The reason for the above result may be due the fact that growing of safed musli is a recurrent income generating enterprise. It adds significantly to the family income. The income from safed musli is assured source unlike agriculture, which is uncertain one. Therefore, more number of middle age safed musli growers are taking up safed musli as subsidiary occupation. The results are in the line with the findings of Suresh (2004) who reported that majority of the dairy entrepreneurs were of middle age group.

5.1.2 Education

The data presented in Table 5- shows that, above one third of the respondents (38.00%) were educated upto high school level, followed by about one fifth of respondents (19.00%) were educated upto middle and primary school level. Further, it was observed that very less i.e. 05.00 per cent were found college level education. Thus, it is concluded that majority of the respondents educated upto high school level and only 6.00 per cent were found illiterate.

Table 5. Distribution of respondents according to their education

Sr. No.	Categories	Standard	Respondents (n=100)	
			Frequency	Percentage
1	Illiterate	No schooling	06	06.00
2	Primary	Up to 4^{th} std.	19	19.00
3	Middle school	5^{th} to 7^{th} std.	19	19.00
4	High school	8^{th} to 10^{th} std.	38	38.00
5	Higher secondary	11^{th} to 12^{th}	13	13.00
6	College	Above 12^{th}	05	05.00
Total			100	100.00

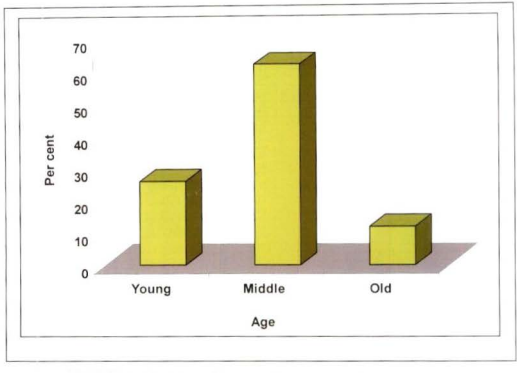


Fig.3. Distribution of respondents according to their age

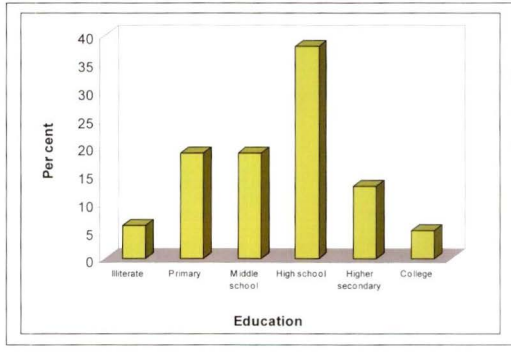


Fig.4. Distribution of respondents according to their education

The reason for this could be that, higher level of the formal schooling helps the safed musli growers to gather new information required for safed musli enterprise which in turn might create outlook to manage the enterprise. It is a well known fact that an educated person turns to be rational in his thinking and imagination which in turn develops entrepreneurial competencies. The trends was in line with the findings of Goud (1990), Vijay Kumar (2001), Wase (2001) and Sadanshiv (2006).

5.1.3 Land holding

The data furnished in Table 6- indicates that about 44.00 per cent of the safed musli growers possessed semi medium category of land holding i.e. 2.01 to 4.00 ha, followed by medium (21.00%), marginal (19.00%) and small (13.00%) land holding. Only 03.00 per cent of safed musli growers possessed large category of land holding i.e. above 10.00 ha.

Table 6. Distribution of respondents according to their land holding

Sr. No.	Categories	Area (ha)	Respondents (n=100)	
			Frequency	Percentage
1	Marginal	Upto 1.00	19	19.00
2	Small	1.01 to 2.00	13	13.00
3	Semi-medium	2.01 to 4.00	44	44.00
4	Medium	4.01 to 10.00	21	21.00
5	Large	Above 10.00	03	03.00
Total			**100**	**100.00**

The reason for possession of higher percentage of respondents in semi medium land holding category could be due to fragmentation of land because of separation of families. Medium and small safed musli growers usually needs subsidiary occupation for their better living, since uncertainty and risk are there in farming therefore farming has been considered as gambling. In order to sustain the losses occurred to the small and medium farmers due to vagaries of nature ,safed musli growers goes for safed musli as subsidiary agro-based enterprise in the study area Sadanshiv (2006) found that majority of the floriculturists were possessed semi medium (2.01 to 4.00 ha.) category of land holdings.

5.1.4 Sources of Irrigation

The sources of irrigation are quite useful to increase the productivity, hence it is included in the study and results have been presented in Table 7 -.

Table 7. Distribution of the respondents according to the sources of irrigation

Sr. No.	Sources of Irrigation	Respondents (n=100)	
		Frequency	Percentage
1	No source	00	00.00
2	River	11	11.00
3	Well / Tube well	81	81.00
4	Canal	08	08.00
Total		**100**	**100.00**

It could be noticed from the Table -, that relatively higher percentage of the respondents (81.00%) had well/tube well as their source of irrigation, followed by (11.00%) possessed river as a source of irrigation while only few (08.00%) of the respondents possessed canal as a source of irrigation. Thus this study concludes that, maximum numbers of the respondents have well or tube well as source to access the irrigation and no respondent were found without any source of irrigation.

Patil et al.(1999), Patil (2001),and Talati (2007) revealed similar findings and stated that lack of irrigation facilities was most important factor influencing the adoption of improved farm practice.

5.1.5 Occupation

The data presented in Table 8 - shows that 40.00 per cent of the respondents main occupation was found agriculture, it was followed by 29.00 per cent and 23.00 per cent agriculture + subsidiary occupation and agriculture + labour as their occupation respectively, very few i.e. 8.00 per cent having agriculture + services as the main occupation.

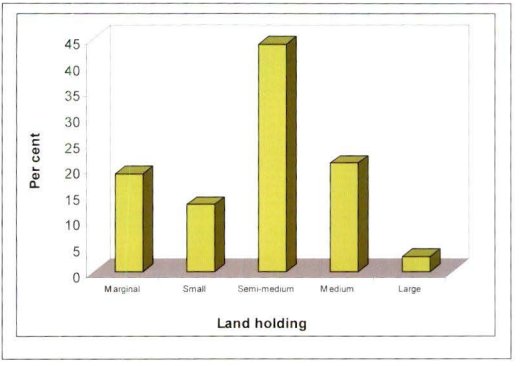


Fig.5. Distribution of respondents according to their land holding

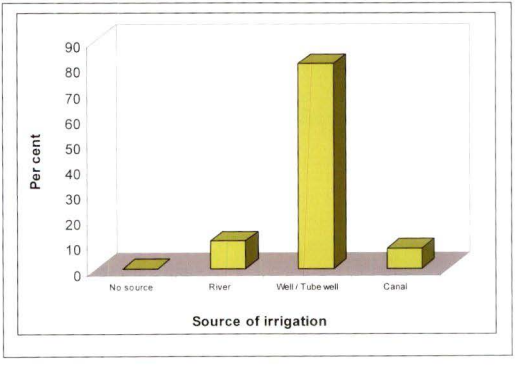


Fig.6. Distribution of respondents according to their source of irrigation

Table 8. Distribution of respondents according to their occupation

Sr. No.	Occupation	Respondents (n=100)	
		Frequency	Percentage
1	Agriculture	40	40.00
2	Agriculture + labour	23	23.00
3	Agriculture + Subsidiary occupation	29	29.00
4	Agriculture+ Services	08	08.00
Total		**100**	**100.00**

Almost all were engaged in agriculture and allied occupation.

5.1.6 Area under cultivation of safed musli

The distributions of the respondents according to area under cultivation of safed musli have been presented in Table 9 -.

Table 9. Distribution of respondents according to area under Cultivation of safed musli

Sr. No.	Area under cultivation of safed musli (ha)	Respondents (n=100)	
		Frequency	Percentage
1	Up to 0.50 ha	15	15.00
2	0.51 to 1.50 ha	63	63.00
3	Above 1.50 ha	22	22.00
Total		**100**	**100.00**

It is evident from Table - that majority (63.00%) of the safed musli growers had 0.51 to 1.50 ha area under cultivation of safed musli while 22.00 per cent of them having above 1.50 ha of area under cultivation of safed musli whereas, 15.00 per cent of the respondents put only upto 0.50 ha area under cultivation of safed musli. It may be said that higher percentage of the safed musli growers (63.00%) had put 0.51 to 1.50 ha area of land under safed musli cultivation.

5.1.7 Experience of cultivation of safed musli

Experience was the important factor in influencing the respondents in terms of knowledge and adoption. The results obtained have been presented in Table 10 -. The respondents were categorized as below -

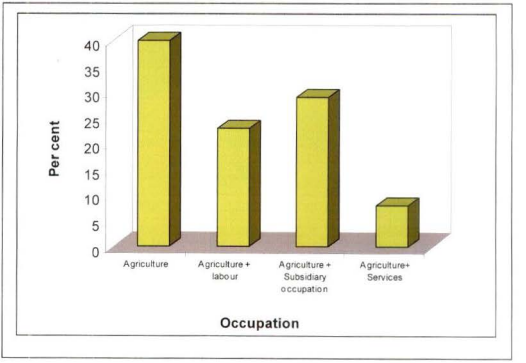


Fig.7. Distribution of respondents according to their occupation

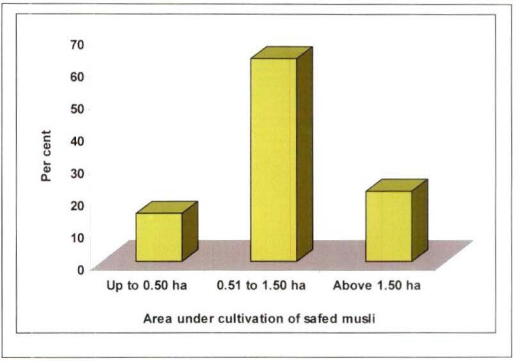


Fig.8. Distribution of respondents according to their area under cultivation of safed musli

Table 10. Distribution of the respondents according to their experience of cultivation of safed musli

Sr. No.	Experience of cultivation of safed musli	Respondents (n=100)	
		Number	Percentage
1.	Low	39	39.00
2.	Medium	52	52.00
3.	High	09	09.00
	Total	**100**	**100.00**

From the Table 10 - it was apparent that most of the respondents (52.00%) had experience of 8 to 13 years in cultivation of safed musli. It was followed by 39.00 per cent respondents, who had experience up to 6 years and 09.00 per cent of the respondents had experience above 13 years in cultivation of safed musli. It could be therefore concluded that, most of the respondents had medium level of experience in cultivation of safed musli.

5.1.8 Annual income

The data presented in Table 11- revealed that, majority of the respondents (34.00%) had annual income of Rs.75001/- to Rs.150000/-, followed by one fourth of them (23.00%) had annual income up to Rs.75000/-, whereas 14.00 per cent of them had annual income range of Rs.225001/- to 300000/- and only 14.00 per cent of respondents had annual income above Rs.300000/-. Thus, it is concluded that, maximum 34.00 per cent of the respondents belonged to Rs.75000/- to Rs.150000/- of annual income category.

Table 11. Distribution of respondents according to their annual income

Sr. No.	Annual income (Rs.)	Respondents (n=100)	
		Frequency	Percentage
1	Up to 75000	23	23.00
2	75001-150000	34	34.00
3	150001-225000	15	15.00
4	225001-300000	14	14.00
5	Above 300001	14	14.00
Total		**100**	**100.00**

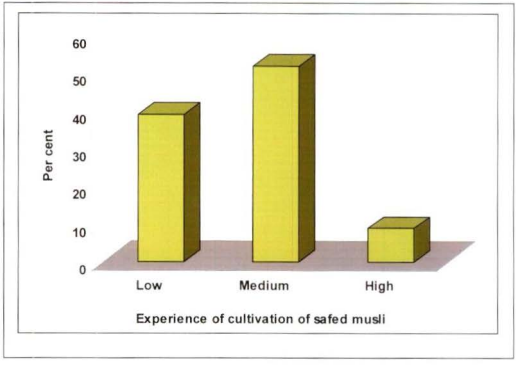


Fig.9. Distribution of respondents according to their experience in cultivation of safed musli

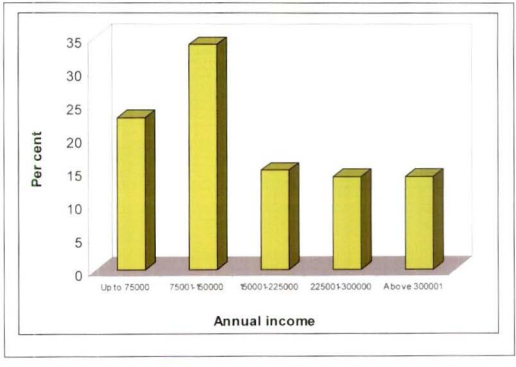


Fig.10. Distribution of respondents according to their annual income

5.1.9 Sources of information

The individual is likely to use different sources for getting information about safed musli.

Table 12. Distribution of respondents according to sources of information

Sr. No.	Sources of information	Respondents (n=100)	
		Number	Percentage
1.	Low	35	35.00
2.	Medium	47	47.00
3.	High	18	18.00
	Total	**100**	**100.00**

It is observed from Table 12- that majority of the respondents (47.00%) were having medium sources of information, while 35.00 per cent of the respondents were having low sources of information. Only 18.00 per cent of the respondents were having high sources of information about safed musli.

It can be concluded from the above findings that most of the respondents utilized moderate source of information.

5.1.10 Extension contact

Extension contact may play important role for awareness point of view. It is presumed that the farmers having more contacts with extension workers and other agencies may derive more benefits from developmental agencies and hence it was necessary to study in the present study.

Table 13. Distribution of the respondents according to their level of extension contact

Sr. No.	Category	Respondents (n=100)	
		Frequency	Percentage
1	Low	37	37.00
2	Medium	43	43.00
3	High	20	20.00
Total		**100**	**100.00**

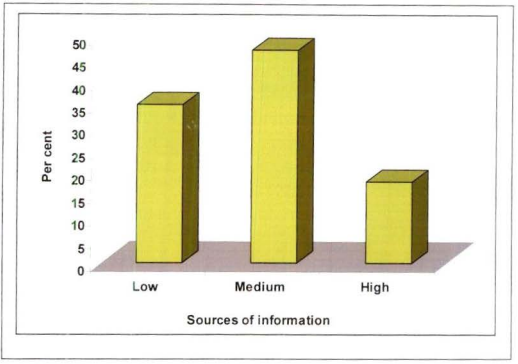


Fig.11. Distribution of respondents according to their sources of information

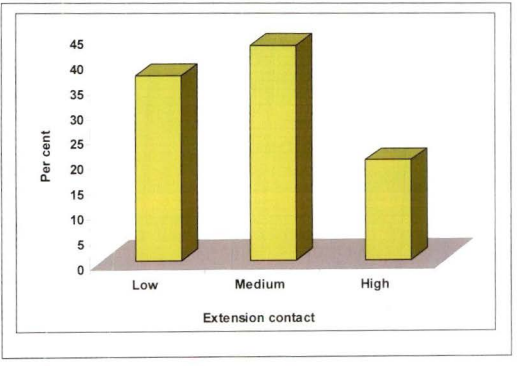


Fig.12. Distribution of respondents according to their extension contact

Result presented in the Table 13-, indicates that 43.00 per cent of the respondents having moderate extension contact with extension agencies for seeking information, followed by 37.00 per cent and 20.00 per cent of the respondents having low and high extension contact with extension agencies respectively. Therefore, it was inferred that, majority of the respondents had moderate extension contact.

Similar findings were observed by Angadi (1999) and Ramanna *et al.* (2000) and stated that majority of the respondents had medium extension contact.

5.1.11 Scientific orientation

It is clear from Table 14- up to fifty per cent (48.00%) of respondents having medium level of scientific orientation, followed by 29.00 per cent and 23.00 per cent having high and low scientific orientation category. Thus, it is concluded that majority of respondents had medium level of scientific orientation. This trend was in the line with the findings of Sakharkar (1995), Karpagam (2000) and Patel (2005) who reported that majority of floriculturists had medium level of scientific orientation.

The probable reason for moderate scientific orientation of the safed musli growers might be due to the fact that high school and college level education of safed musli growers together constituted more than fifty per cent, alongwith this respondents having moderate level of sources of information and extension contact. Hence higher formal sources of information help the respondents to apply scientific practices in cultivation of safed musli.

Table 14.Distribution of respondents according to their scientific orientation

Sr. No.	Category	Respondents (n=100)	
		Frequency	Percentage
1	Low (Up to 17)	23	23.00
2	Medium (18 to 21)	48	48.00
3	High (Above 22)	29	29.00
Total		**100**	**100.00**
Mean = 19.76			**SD = 2.77**

5.1.12 Knowledge about cultivation of safed musli

Adequate and relevant knowledge of recommended cultivation practices of safed musli is very important for safed musli growers. The knowledge of safed musli growers were studied and presented in Table 15.

Table 15. Distribution of respondents according to their practice wise knowledge about recommended cultivation practices of safed musli

Sr. No.	Cultivation practices of safed musli	Frequency (n=100)	Percentage
A.	Land preparation (ploughing, harrowing)	85	85.00
B.	Seed bed preparation (raised beds along the slope or ridges and furrows method)	39	39.00
C.	Manure application (FYM, Green manuring, Neem cake, Vermicompost)	95	95.00
D.	Soil type (sandy loam and well drained)	45	45.00
E.	Recommended variety	07	07.00
F.	Seed treatment (Humicil@5ml/literof water and Diathane-M 45@ 5mg/liter of water)	51	51.00
G.	Planting material used per hectare (Only roots 3-5 qt/ha)	63	63.00
H.	Time of sowing (June – July)	72	72.00
I.	Method of sowing/ propagation method (by hand)	55	55.00
J.	Spacing (30x15 cm)	40	40.00
K.	Intercultural operations (weeding, hoeing)	42	42.00
L.	Irrigation schedule (once in month)	59	59.00
M.	Plant protection		
1.	Major diseases (leaf blight and red spot)	48	48.00
2.	Control measures for diseases (spray bavistin solution @1g/liter at 25 days interval , 2 times)	48	48.00
N.	Harvesting		
1.	Method of harvesting (by hand / mechanical)	75	75.00
2.	Time of harvesting (Dec - Jan)	69	69.00
O.	Peeling (By hand / mechanical)	61	61.00
P.	Drying (By hand / mechanical)	60	60.00

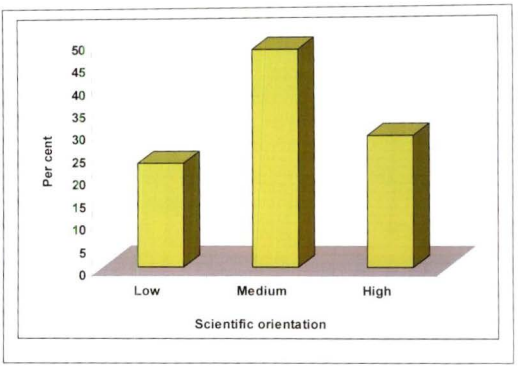


Fig.13. Distribution of respondents according to their scientific orientation

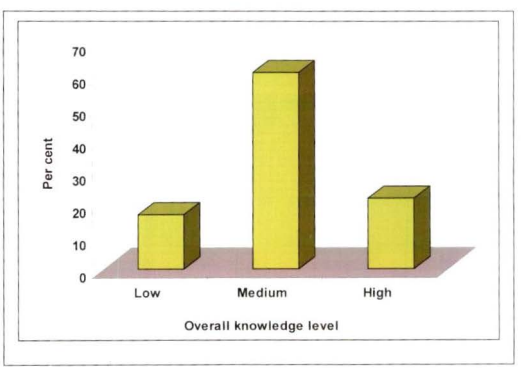


Fig.14. Distribution of respondents according to their knowledge about cultivation of safed musli

A critical look towards practice wise knowledge about the recommended cultivation practices of safed musli revealed that 95.00 per cent of the growers having knowledge about manure application, it was followed by land preparation (85.00%), 75.00 per cent of the respondents having knowledge about method of harvesting. It was followed by time of sowing (72.00%), time of harvesting (69.00%). Planting material used per hectare (63.00%), method of drying (60.00%) and peeling (61.00%). It is also noticed that 59.00 per cent knowledge about plant protection, method of sowing (15.00%) and seed treatment by 51.00 per cent of the respondents.

While in case of rest of the practices respondents have less than fifty percent knowledge about the recommended package of practices. There are 48.00 per cent for knowledge about major diseases and control for it. It was followed by soil type for safed musli 45.00 per cent, interculture operation (42.00%), spacing (40.00%) and seed bed preparation (39.00%)

Table 16.Distribution of respondents according to overall knowledge levels

Sr. No.	Overall knowledge level	Index	Respondents (n=100)	
			Frequency	Percentage
1.	Low	Up to 33.33	17	17.00
2.	Medium	33.34 to 66.66	61	61.00
3.	High	Above 66.66	22	22.00
	Total		**100**	**100.00**

The results regarding knowledge about cultivation of safed musli indicates that the majority of safed musli growers (61.00%) having medium level of knowledge about cultivation practices of safed musli. It was followed by 22.00 per cent of the respondents having high level of knowledge and only (17.00%) of the respondents were found in low level of knowledge category.

These findings were in conformity with the findings of Suryawanshi (2002) and Shinde (2004).

Thus, it can be inferred that majority of the respondents were having medium level of knowledge about cultivation practices of safed musli.

5.2 Entrepreneurial behaviour of safed musli growers

5.2.1 Components of entrepreneurial behaviour of safed musli growers

The entrepreneurial behaviour of safed musli growers comprised of seven selected components of entrepreneurial behavior such as innovativeness, achievement motivation, decision making ability, economic motivation, risk orientation, leadership ability and management orientation. In this section with regards to the component wise entrepreneurial behaviour of safed musli growers have been furnished in Table 17 -. The same have been interpreted and discussed, as follows.

5.2.1.1 Innovativeness

The data in Table 17 revealed that 68.00 per cent of the respondents had medium level of innovativeness, followed by 19.00 per cent respondents had low level of innovativeness and only 13.00 per cent of respondents had high level of innovativeness.

A considerable percentage of safed musli growers were found in medium and high categories of innovativeness. The possible reason might be due to higher education and higher utilization of sources of information and extension contact helped the safed musli growers to put the new safed musli technology into practice. These results are in accordance with the findings of Suresh (2004) who stated that more than half of milk producer (55.00%) had medium innovativeness.

5.2.1.2 Achievement motivation

It is observed from Table 17 that, 71.00 per cent of safed musli growers had medium level of achievement motivation, followed by 18.00 per cent of safed musli growers had high level of achievement motivation. Whereas, only 11.00 per cent of safed musli growers had low level of achievement motivation. It is concluded that majority of safed musli growers belonged to medium achievement motivation. The probable reason for medium followed by high achievement motivation might due to, their enthusiasm and zeal to become economically sound. It is assumed

that achievement motivation forces the goals, which one has set for oneself.

The higher annual income might have encouraged them to set the higher goals. The findings are in line with the findings of Vijay Kumar (2001), Suresh (2004) and Nagesha (2005) who reported that majority of respondents had medium level of achievement motivation.

Table 17. Distribution of safed musli growers based on components of entrepreneurial behaviour of safed musli grower

Sr. No.	Components	Categories	Respondents (n=100)	
			Frequency	Percentage
1	Innovativeness	Low	19	19.00
		Medium	68	68.00
		High	13	13.00
		Total	**100**	**100.00**
2	Achievement motivation	Low	11	11.00
		Medium	71	71.00
		High	18	18.00
		Total	**100**	**100.00**
3	Decision making ability	Low	20	20.00
		Medium	65	65.00
		High	15	15.00
		Total	**100**	**100.00**
4	Economic motivation	Low	24	24.00
		Medium	52	52.00
		High	24	24.00
		Total	**100**	**100.00**
5	Risk orientation	Low	12	12.00
		Medium	66	66.00
		High	22	22.00
		Total	**100**	**100.00**
6	Leadership ability	Low	16	16.00
		Medium	74	74.00
		High	10	10.00
		Total	**100**	**100.00**
7	Management orientation	Low	15	15.00
		Medium	70	70.00
		High	15	15.00
		Total	**100**	**100.00**

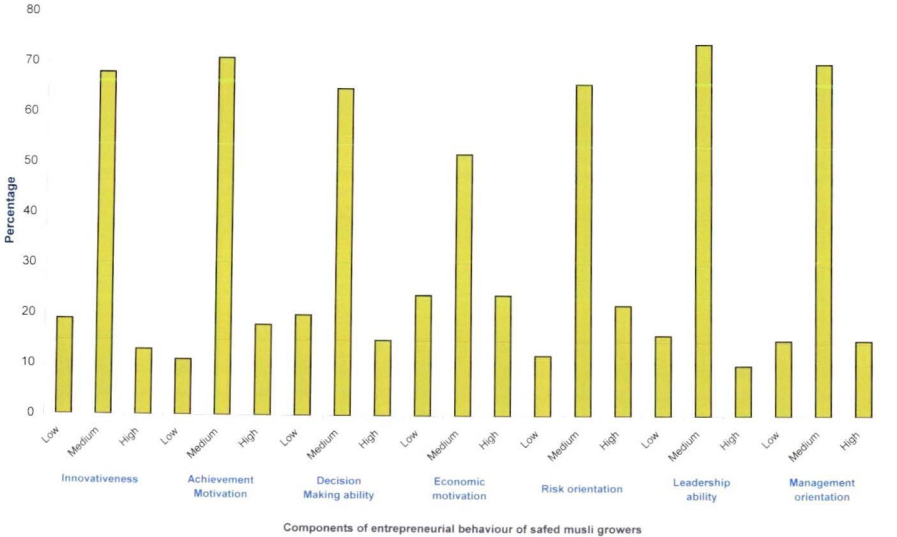


Fig.15. Distribution of safed musli growers based on components of entrepreneurial behaviour of safed musli growers

5.2.1.3 Decision making ability

A glance of Table 17 - shows that majority of the respondents (65.00%) found in medium category of decision making ability, followed by 20.00 per cent of respondents observed into low category and only 15.00 per cent of respondents in high category of decision-making ability. Thus, it is concluded that, majority of respondents had medium level decision-making ability.

The logical reason behind having medium, followed by high decision making ability might be due to their medium to higher level scientific orientation of safed musli growers and size of land holding of safed musli growers.

The findings are in line with the findings reported by Vijay kumar (2001) and Suresh (2004) who reported majority of respondents had medium level of decision making ability.

5.2.1.4 Economic motivation

The data in Table 17 indicated that, more than half of respondents (52.00%) found under medium category of economic motivation, followed by 24.00 per cent under low and 24.00 per cent in high category of economic motivation. Thus, it is concluded that majority of safed musli growers had medium level of economic motivation. The findings were in line with the findings of Chauhan and Patel (2003) and Sadanshiv (2006) who reported that majority of respondents had medium level of economic motivation.

5.2.1.5 Risk orientation

It could be inferred from Table 17- it is revealed that 66.00 per cent of the safed musli growers had medium level of risk orientation, followed by (22.00%) of respondents had high risk orientation whereas, (12.00%) of the respondents had low level of risk orientation.

Thus, it is concluded that majority of respondents had medium level of risk orientation. The probable reason for medium, followed by, high risk orientation might be due to ability of safed musli growers under medium land holding category to face risk as they were financially sound, highly educated and middle age and medium scientific orientation could sustained the risk involved in safed musli enterprises . The similar findings had

reported by Bhangyalaxmi *et al.* (2003) and Suresh (2004) who reported that majority of dairy farmers had medium level of risk orientation.

5.2.1.6 Leadership ability

With respect to leadership ability from Table17 - it is seen that majority of the respondents (74.00%) belonged to medium level of leadership ability, followed by 16.00 per cent and 10.00 per cent of the respondents having low and high leadership abilities, respectively. The results are in consonance with the findings of Nagesha (2005).

5.2.1.7 Management orientation

With regard to management orientation from Table 17- it is observed that 70.00 per cent of the respondents had medium management orientation, followed by equal percentage (15.00%) of the respondents having high and low management orientation, respectively. The probable reason for medium level of management orientation might be their medium extension contacts. These interactions might have helped the farmers to reorient their current management practices. Exposure of the farmers to various professional situations like extension meetings, exhibitions, field days, Krishimela etc., also might have contributed to develop their medium level of management orientation in comparison to other safed musli growers.

The findings are in accordance with the studies conducted by Chauhan and Patel (2003).

5.2.1.8 Overall Entrepreneurial behaviour

Entrepreneurial behaviour is the composite measure of seven components such as innovativeness, achievement motivation, decision making ability, economic motivation, risk orientation, leadership ability and management orientation. An index was developed to measure the entrepreneurial behaviour of safed musli growers by considering the score and scale values of the components. The data in this regard have been presented in Table 18 .

Table 18.Distribution of respondents according to their entrepreneurial behaviour level

Sr. No.	Categories	Index range	Respondents (n=100)	
			Frequency	Percentage
1	Low	Up to 33.33	17	17.00
2	Medium	33.34 to 66.66	73	73.00
3	High	Above 66.66	10	10.00
	Total		**100**	**100.00**

It could be observed from Table 18- that above two third (73.00%) of safed musli growers belonged to medium category of entrepreneurial behaviour, followed by 17.00 per cent of safed musli growers observed in low level of entrepreneurial behaviour, whereas, 10.00 per cent of safed musli growers found in high entrepreneurial behaviour category.

The possible reasons of medium entrepreneurial behaviour might be due to all the major seven components of entrepreneurial behaviour of safed musli growers which together reflect their medium entrepreneurial behaviour. The findings of present study are in agreement with the findings of Suresh (2004) who stated that two third of milk producers (66.67%) had medium entrepreneurial behavior.

5.3 Relational analysis

A relational analysis was carried out to find out whether the selected characteristics had any association with entrepreneurial behaviour of safed musli growers. The coefficients of correlation of the personal, socio-economic and psychological variables with entrepreneurial behavour of safed musli growers have been furnished in Table- 19.

5.3.1 Relationship between selected characteristics of respondents with their entrepreneurial behaviour

The perusal of the data displayed in Table 19 - clearly indicates that the variables age, occupation, land holding, area under cultivation of safed musli, experience of cultivation of safed musli, sources of information and knowledge about cultivation of safed musli were found to be positively and significantly correlatedwith entrepreneurial behaviour at 0.05 level of

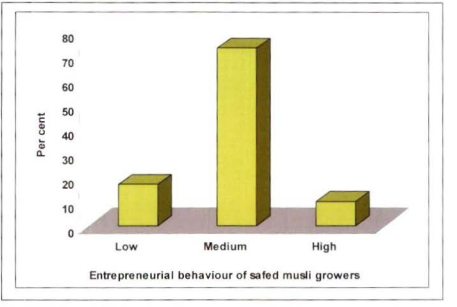


Fig.16. Distribution of respondents according to entrepreneurial behaviour

probability. However, the variable namely education was found to be positively and significantly correlated with the dependent variable entrepreneurial behavior at 0.01 level of probability. Hence, the null hypothesis was rejected for these characteristics and concluded that these characteristics were correlated with entrepreneurial behaviour.

Further, remaining characteristics of safed musli growers such as source of irrigation, annual income, extension contact and scientific orientation did not establish significant relationship with their entrepreneurial behaviour. Hence, the null hypothesis was accepted with respect to these characteristics and concluded that these characteristics were not correlated with entrepreneurial behavior.

Table 19.Correlation between personal, socio-economic and psychological characteristics of the respondents and their entrepreneurial behaviour

Sr. No.	Variables	'r' values
1.	Age	0.2042*
2.	Education	0.3486**
3.	Land holding	0.2017*
4.	Sources of irrigation	-0.0826
5.	Occupation	0.1973*
6.	Area under cultivation of safed musli	0.2670*
7.	Experience of cultivation of safed musli	0.1981*
8.	Annual income	-0.1423
9.	Sources of information	0.2205*
10.	Extension contact	0.0439
11.	Scientific orientation	0.1488
12.	Knowledge about cultivation of safed musli	0.2256*

** = Significant at 0.01 level of probability
* = Significant at 0.05 level of probability

The similar results have reported by Vijay Kumar (2001), Bhagyalaxmi *et al.* (2003), Subramanyeswari (2003), Suresh (2004) and Sadanshiv (2006) who stated that age of respondents had positively significant relationship with their entrepreneurial behaviour.

The findings are in accordance with the findings of Goud (1990), Baswarajaiah (2001), Vijay Kumar (2001), Wase (2001) and Sadanshiv (2006) who also reported that there was positively significant relationship between education and entrepreneurial behaviour.

The findings are in line with the findings of Subramanyeshwari and Veeraraghava reddy (2003) who reported that there was positive and significant relationship between land holding and area under cultivation with their entrepreneurial behaviour.

The findings are accordance with the findings of Karpagam (2000), Anitha (2004) and Pandeti (2005) who also reported that there was positively significant relationship between occupation and entrepreneurial behavior.

The similar findings were reported by Talati (2007), Manjula (1995), Angadi (1999), Sakharkar (1995) and Karpagam (2000) who noticed the source of irrigation, annual income, extension contact and scientific orientation was having non-significant relationship with entrepreneurial behaviour.

5.4 Constraints faced by safed musli growers with regards to safed musli cultivation

The findings on the constraints faced by the safed musli growers as perceived by the respondents are given in Table 20.

A perusal of the Table 20 reveals that cent per cent of the safed musli growers encountered the problem of low price for produce. It was followed by non availability of manures and fertilizers (95.00%), load shading (82.00%), high cost of transportation (78.00%), variation in market prices (75.00%), high labour cost (72.00%), non availability of labour (62.00%), lack of knowledge about prices of various markets (59.00%) and non availability of other inputs (54.00%) were the major constraints expressed by majority of the respondents.

Table 20. Distribution of the respondents according to the constrains faced by safed musli growers in cultivation, production, storage and marketing

Sr. No.	Constraints	Frequency* (n=100)	Percentage
1.	**Cultivation**		
	a. Land preparation	25	25.00
	b. Non availability of good quality suckers or planting material	24	24.00
	c. Non availability of manures and fertilizers	95	95.00
	d. Irregular supply of electricity	82	82.00
	e. Non availability of other inputs	54	54.00
	f. High cost of harvesting	41	41.00
2.	**Production**		
	a. Higher Investment	39	39.00
	b. Required more working capital	34	34.00
	c. High labour cost	72	72.00
	d. Lack of skilled labour	18	18.00
	e. Non-availability of labour	62	62.00
	f. Non availability of bank loan	25	25.00
	g. Non availability of subsidy for the crop	37	37.00
3.	**Storage**		
	a. Non availability of warehouses	20	20.00
	b. High cost of storage charges by the warehouses	20	20.00
	c. Lack of knowledge of proper storage methods by the farmers	35	35.00
4.	**Marketing**		
	a. High cost of transportation	78	78.00
	b. Low price for the produce	100	100.00
	c. Lack of knowledge of price of various markets	59	59.00
	d. Exploitation by middlemen	40	40.00
	e. Variation in the market prices	75	75.00

*Multiple responses obtained

Whereas, high cost of harvesting expressed 41.00 per cent of the respondents. It was followed by exploitation by middleman (40.00%), higher investment (39.00%), non availability of bank loan(37.00%), lack of knowledge about proper storage methods by the farmers (35.00%), required more working working capital (34.00%), land preparation (25.00%), non availability of good quality planting material (24.00%), high cost of storage houses and non availability of warehouses (20.00%) and lack of skilled labour mentioned by 13.00 per cent of the respondents.

Some of the similar findings of above constraints have identified by Singh (2004) and Sadanshiv (2006) respectively.

5.5 Empirical model

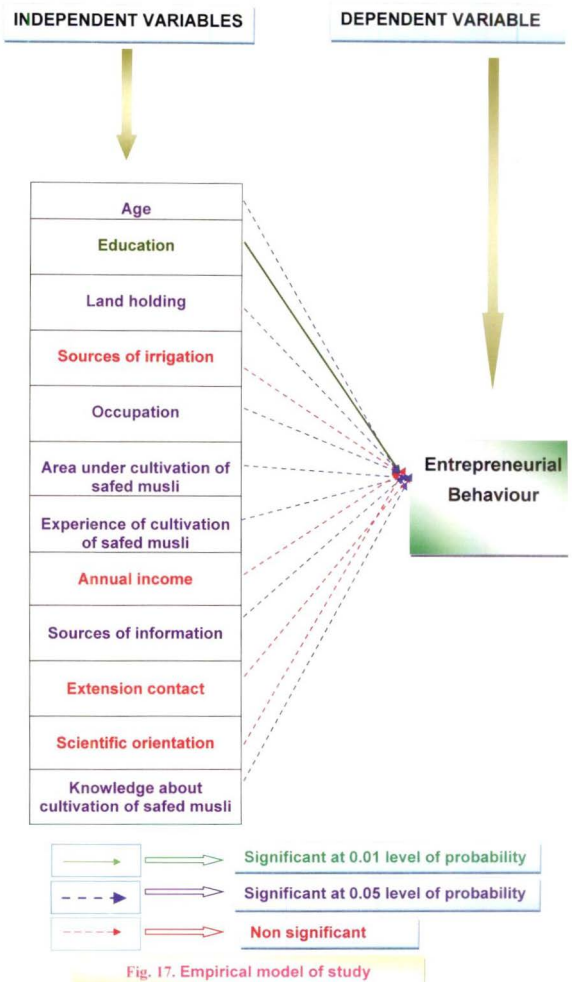


Fig. 17. Empirical model of study

Chapter VI

Summary and Conclusions

CHAPTER VI

SUMMARY AND CONCLUSIONS

Medicinal plants are the local heritage with global importance. World is endowed with a rich wealth of medicinal plants. Medicinal plants constitute a group of industrially important crops which are of great value for domestic use and for export. Plant- based drugs are being increasingly preferred in medicinal science. The use of various parts of several drug plants to cure specific ailments has been in vogue from ancient time in our indigenous medicine.

The Safed musli (*Chlorophytum species*) belongs to *liliaceae* family it is also called as wonder hurb. It is commercially important medicinal plant in India. It is being used as anti arthritic and anti cancer drug Because of its aphrodisial properties. It is found in tropical moist and dry deciduous forest. It is widely distributed in India in Southern Rajasthan, Western Madhya Pradesh, North Gujarat, few parts of Karnataka and Maharashtra. India is bestowed with several agro-climatic zones conducive for production of sensitive and delicate crops.

Twenty first century is the century of entrepreneurship and every individual can be agent for innovation and change. Entrepreneurship is regarded as one of the most crucial factors in economic development of every region of the country. It widens the horizons of economic development even in the socially and industrially backward regions. Dynamic entrepreneurs are considered to be the agent of change in a society. Entrepreneurship plays an important role in generating new employment and setting up new business. The problem of poverty, inequality and regional imbalances can be tackled with development of entrepreneurship. However in all economic development activities more and more focus is being centered on entrepreneurship of the people.

Keeping the above facts in view, the present study was designed to analyze the entrepreneurial behaviour of safed musli growers. The following specific objectives were formulated for the study.

Objectives of the study

1. To study the personal, socio-economic and psychological characteristics of safed musli growers.
2. To study the entrepreneurial behaviour of safed musli growers.
3. To find out relationship of selected characteristics with
4. entrepreneurial behaviour of safed musli growers.
5. To identify constraints in safed musli cultivation as perceived by the
6. respondents.

The study was conducted in Akot Panchayat Samiti of Akola district and Jalgaon jamod Panchayat Samiti of Buldana district in Maharashtra state during 2013-2014. From these Panchayat Samities, 10 villages were selected from each village ten safed musli growers were randomly selected as respondents. Thus, 100 safed musli growers constituted the sample for this study. The data were collected by personally interviewing the respondents with help of pretested structured interview schedule in an informal atmosphere, collected data were tabulated, mean, standard deviation and correlation were employed for interpretation of the findings.

The characteristics of the safed musli growers namely, age, education, land holding, sources of irrigation, occupation, area under cultivation of safed musli, experience of cultivation of safed musli, annul income, sources of information, extension contact, scientific orientation and knowledge about cultivation of safed musli were studied as independent variables. However, the entrepreneurial behaviour was studied as the dependent variable.

6.2 Findings

The salient finding of the present study were summarized in succeeding paragraphs.

6.2.1 Distribution analysis

6.2.1.1 Characteristics of respondents

1. More than half of the respondents (62.00%) belonged to middle age group.
2. Nearly one third of the respondents (38.00%) were educated upto high school level.

3. About 44.00 per cent of the respondents possessed semi medium category of land holding (2.01 to 4.00 ha).
4. Relatively higher percentage of the respondents (81.00%) had well/tube well as their source of irrigation.
5. In case of occupation 40.00 per cent of the respondents were engaged in agriculture as the main occupation.
6. Majority of the safed musli growers (63.00%) had 0.51 ha to 1.50 ha area under cultivation of safed musli.
7. More than half of the respondents (52.00%) had medium level of experience of cultivation of safed musli.
8. Regarding annual income 34.00 per cent respondents having medium 75001-150000 per year annual income.
9. More than fifty per cent of the respondents (47.00%) had medium level of sources of information.
10. Majority of the respondents (43.00%) having moderate extension contact.
11. Maximum number of respondents (48.00%) belonged to medium level of scientific orientation.
12. More than half of the safed musli growers (61.00%) having medium level of knowledge about cultivation of safed musli.

6.2.1.2 Entrepreneurial behaviour

In overall near about three fourth (73.00%) of safed musli growers belonged to medium category of entrepreneurial behaviour. It was followed by low (17.00%) and high (10.00%) entrepreneurial behaviour of safed musli growers.

Components of entrepreneurial behaviour

a. **Innovativeness:** in case of innovativeness majority of the respondents (68.00%) had medium level of innovativeness.
b. **Achievement motivation:** Regarding achievement motivation (71.00%) safed musli growers had medium level of achievement motivation.
c. **Decision making ability:** In case of decision making ability 65.00 per cent respondents fell in to medium category of decision making ability.

d. **Economic motivation:** About 52.00 per cent of the respondents having medium category of economic motivation.

e. **Risk orientation:** Majority of the safed musli growers (66.00%) had medium level of risk orientation.

f. **Leadership ability:** Near about three fourth (74.00%) of the respondents belonged to medium level leadership ability.

g. **Management orientation:** Most of the respondents (70.00%) had medium level of management orientation.

6.2.2 Relational analysis

6.2.2.1 Correlation coefficients

In case of relational analysis age, land holding, occupation, area under cultivation of safed musli, experience of cultivation of safed musli, sources of information and knowledge about cultivation of safed musli were positively and significantly correlated with entrepreneurial behaviour at 0.05 level of probability and education were positively significant at 0.01 level of probability.

6.2.2.2 Constraints

In case of constraints, majority of the respondents expressed low price for the produce, followed by non availability of manures and fertilizers (95.00%), load shading (82.00%), high cost of transportation (78.00%), variation in market prices (75.00%), high labour cost (72.00%), non availability of labour (62.00%), lack of knowledge about prices of various markets (59.00%) and non availability of other inputs (54.00%) were the major constraints expressed by majority of the respondents.

For the high cost of harvesting expressed 41.00 per cent of the respondents. It was followed by exploitation by middleman (40.00%), higher investment (39.00%), non availability of bank loan(37.00%), lack of knowledge about proper storage methods by the farmers (35.00%), required more working working capital (34.00%), land preparation (25.00%), non availability of good quality planting material (24.00%), high cost of storage houses and non availability of warehouses (20.00%) and lack of skilled labour mentioned by 13.00 per cent of the respondents.

Chapter VII

Implications

CHAPTER VII

IMPLICATIONS

Though the present study was confined to Akot tahsil of Akola district and Jalgaon jamod tahsil of Buldana district, its findings might be applicable in the similar area elsewhere. The present investigation has brought out important findings having valuable action implication from the point of view of increasing the entrepreneurial behavior of safed musli growers. The implications are therefore of vital importance and carries practical value. Thus, deserve immediate attention of the planners, policy makers, administrators and extension personnel. The implications emanated from the findings of the study have been presented as below.

7.1 Implications for action

1. The fact that majority of the farmers had medium entrepreneurial behaviour is a clear indication of the progressiveness of the safed musli growers. Further, it calls for intensification of educational efforts and policy support to the safed musli growers by the field extension workers of the development departments, NGOs and private organizations to make them more enterprising.
2. As most of the farmers had medium innovativeness, still there is a need to expose the safed musli growers to recent developments in agricultural technologies and motivate them to adopt the new technologies by organizing group discussions, meetings, study tours and field trips to government nurseries.
3. Intensive training programmes need to be conducted by government and nongovernment agencies to create awareness about entrepreneurial opportunities, decision making, innovativeness, participation in implementation of government schemes, time and financial management, which would enable the safed musli growers for efficient utilization of their potential. These programmes should be followed by vigorous follow-up, guidance and counseling for sustenance of the entrepreneurial activity among safed musli growers.

4. As majority of safed musli growers were middle aged, this group should be imparted training, so that they can act as catalysts in motivating other farmers through communication networks.
5. In case of knowledge though majority of the farmers possessed medium level of knowledge about recommended safed musli cultivation technologies. The knowledge prosperity of the respondents needs to be converting in to adoption. In this connection, it is implicated that the extension agencies and government functions engaged in development of agriculture in the area should try hard by using appropriate strategies like organization of trainings and filed days, exhibitions and result demonstrations to improve adoption of recommended safed musli cultivation technology at grass root level.
6. The study revealed that certain variables such as age, education, land holding, occupation, area under cultivation, experience of cultivation of safed musli, sources of information, knowledge about cultivation of safed musli shows positively significant relationship with entrepreneurial behaviour. The Government and private organizations should aim in manipulating these variables to their advantage for promoting entrepreneurial behaviour among safed musli growers.
7. 7.Non availability of good quality suckers or planting material, irregular supply of electricity for irrigation, high expenses of harvesting operation, non availability of manures and FYM and low price of the produce were the important problems encountered by safed musli growers in production and marketing of safed musli. Secondly, establishment of storage houses and processing units is the immediate need. This can be done on co-operative basis. This will not only overcome the risk in spoilage of safed musli for want of storage facility but also guarantee for increased profits by grading and sorting of the safed musli. Farmer's co-operative society will also be most helpful in supplying quality inputs like seeds, cuttings, fertilizers and plant protection chemicals at reasonable rates.

8. As it is also evident from the study that most of the farmers market their produce at state markets. Hence, strengthening the market infrastructure at district and taluka levels will ensure efficient marketing system for the safed musli growers.

7.2 Implications for future study

The present investigation was confined to 10 villages of two pachayat samities of two districts. The study needs to be replicated in large sample covering all the major potential areas in Maharashtra, so that the inference drawn can be generalized to a greater extent. A comparative study of entrepreneurial behaviour of safed musli growers engaged in different enterprises such as commercial crop production, poultry, dairy, fisheries, sericulture, *etc.*, may throw new light on farm entrepreneurs.

There is a need to standardize safed musli production technology in different agroclimatic conditions of the country. Further, there is also need to develop entrepreneurial development programme (EDP) modules to train different types of safed musli growers under different agro-climatic conditions for economic development of safed musli growers in the country. Hence, this field of investigations offers a broad scope for future research.

Chapter VIII

Literature Cited

CHAPTER VIII

LITERATURE CITED

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Vita

VITA

1.	Name of Student	:	**DUTONDE SHWETA SAKHARAM**
2.	Date of Birth	:	16-12-1990
3.	Name of the College	:	Department of Extension Education, Post Graduate Institute, Dr.Panjabrao Deshmukh Krishi Vidyapeeth, Akola
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5.	Academic qualification	:	

Sr.No.	Name of Degrees awarded	Year	Division	University	Subjects
i.	B.Sc. (Agri)	2012	Second	Dr. PDKV ,Akola	Agriculture.

6.	Research paper published	:	None
7.	Field of Interest	:	Rural development

Place: Akola
Date: 31/05/2014

(S.S. Dutonde)
Signature of Student

Appendix

APPENDIX-I

INTERVIEW SCHEDULE

Title of research - **"Entrepreneurial behavior of safed musli growers of Akola and Buldana districts"**

Name of the Researcher : - Miss. Dutonde Shweta Sakharam
M.Sc. (Agri.) 2nd year
Department of Extension Education
Dr. PDKV, Akola

PART- A

Profile of Safed musli grower

1) GENERAL INFORMATION

1) Name of the safed musli grower : _____

2) Village : _____

3) Taluka : _____

4) District : _____

2) PERSONAL, SOCIO-ECONOMIC AND PSYCHOLOGICAL CHARACTERISTICS:-

1) Age : _____ years

2) Education : _____ std

3) Land holding : a) Irrigated : _____acre
b) Dry : _____acre
Total : _____acre

4) Sources of irrigation: River/ Well/ Tube well/ Canal/ No source

5) Occupation : a) Main : _____
b) Subsidiary : _____
c) Any other : _____

6) Area under cultivation : _____ ha

7) Experience in cultivation of safed musli : _____ yrs

8) Annual income (Rs) : a) Main source :
b) Subsidiary :
c) Other sources :
Total :

9) Sources of information :

Sr.No.	Sources	Regular	Sometimes	Never
A.	**Personal Contact**			
1.	Neighbourers			
2.	Friends			
3.	Relatives			
4.	Progressive farmers			
5.	Member of gram panchayat			
6.	Local leader			
B.	**Group Contact**			
1.	Group discussion			
2.	Training			
3.	Demonstration			
4.	Tour			
5.	Participation in Agri-exhibition			
C.	**Mass Contact**			
1.	Radio			
2.	Television			
3.	Newspaper			
4.	Agriculture literature (Magazine)			
5.	Internet			
D.	**Trade Organization**			
1.	Agriculture Produce Marketing Committee (APMC)			
2.	Authorized Dealer (fertilizer, insecticides, seeds)			
3.	Co-operative Society			

10) Extension contact :

Sr. No.	Sources of information	Contacted in a week	Contacted in a fortnight	Contacted in a month	Never contacted
1.	Gramsevak				
2.	Agriculture assistant				
3.	Agriculture supervisor				
4.	Mandal Agril. Officer				
5.	Taluka Agril. Officer				
6.	Agriculture university scientist				
7.	NGO				
8.	KVK / SMS				

11) Scientific orientation: (Supe, 1969)

Sr.No.	Statements	SA	AG	UD	DA	SD
1.	New methods of safed musli cultivation give better results to safed musli growing entrepreneur than the old methods. (+)					
2.	The way of managing safed musli by our forefathers is still best way to manage it today. (-)					
3.	Even a safed musli grower with a lots of experience should use new methods of cultivation. (+)					
4.	Though it takes time for a entrepreneur to learn new methods in safed musli growing it is worth the efforts. (+)					
5.	A good entrepreneur experiments with new ideas in safed musli production. (+)					
6.	Traditional methods of safed musli management have to be changed in order to raise the level of living of a safed musli grower. (+)					

SA - Strongly Agree AG - Agree UD - Undecided DA - Disagree SD - Strongly Disagree

12) Knowledge about cultivation of safed musli :

Sr. No.	Cultivation practices	Knowledge	
		Yes	No
A.	**Land preparation**		
1.	Deep ploughing		
2.	Harrowing		
B.	**Seed bed preparation** (raised beds along the slope or ridges and furrows method)		
C.	**Manure application** (FYM, Green manuring, Neem cake, Vermicompost)		
D.	**Soil type** (sandy loam and well drained)		
E.	**Variety**		
F.	**Seed treatment** (Humicil@5ml/literof water and Diathane-M 45@ 5mg/liter of water)		
G.	**Planting material used per hectare** (Only roots 3-5 qt/ha)		
H.	**Time of sowing** (June – July)		
I.	**Method of sowing/ propagation method** (by hand)		
J.	**Spacing** (30x15 cm)		
K.	**Interculture operations**		
1.	Weeding (3 times)		
2.	Hoeing		
L.	**Irrigation schedule**		
1.	Method of irrigation (drip irrigation/ sprinkler irrigation)		
2.	No of irrigations (once in a month)		
M.	**Plant protection**		
1.	Major diseases (leaf blight and red spot)		
2.	Control measures for diseases (spray bavistin solution @1g/liter at 25 days interval , 2 times)		
N.	**Harvesting**		
1.	Method of harvesting (by hand / mechanical)		
2.	Time of harvesting (Dec - Jan)		
O.	**Peeling** (By nand / mechanical)		
P.	**Drying** (By hand / mechanical)		

PART – B

ENTREPRENEURIAL BEHAVIOUR OF SAFED MUSLI GROWERS

(Chaudhari *et al.* 2007)

1. Innovativeness : (Sakharkar 1995)

Sr. No.	Statements	Most like	Least like	Not like
1.	I try to keep myself upto date with information on new farm practices in safed musli production but that does not mean that I try out all new methods on my farm.			
2.	I feel restless till I try out a new farm practices in safed musli production, that I have heard about.			
3.	They talk of many new farm practices in safed musli production these days but who knows whether they are better than old ones.			
4.	From time to time I have heard of several new farm practices in safed musli production and I have tried out most of them in the last few years.			
5.	Usually I wait to see that what results my neighbors obtain before I try out the new farm practices in safed musli production.			
6.	Somehow I believe that the traditional ways of farming are the best.			
7.	I am cautious about trying new practices in safed musli production.			
8.	After all our forefathers were wise in their farming practices and I do not see any reason for changing these old methods.			
9.	Often new farm practices in safed musli production are not successful , however if they are promising I would surely like to adopt them.			

2. Achievement motivation (Chandrapaul 1998)

Everybody has desire to achieve the things in his life. Here are some sentences pertaining to desire of excellence to do something well for its own sake rather to gain power, love or recognition. Please give your response.

1. In accomplishing a task, I like .....

   a) To do it much better than other safed musli grower

   b) To finish before time

2. My desire is to be .....

a) An average safed musli grower

b) Successful safed musli grower

3. I feel my success depends .....

a) Upon my hard work in safed musli enterprise

b) Upon my parents and relatives

4. I like .....

a) To earn more profit

b) To satisfy my minimum needs

5. After 10 years I will be .....

a) A well known safed musli grower

b) My status will be same

3. Decision making ability: (Supe 1969)

Decisions have to be made at several stages in safed musli growing. Please state how decisions are made in your enterprise in terms of whether in consideration with you or not considering you on regarding different aspects given below.

Sr. No.	Decisions	Justifications
1.	How did you decide the area for safed musli crop to put under cultivation last year	3 – Market conditions - Financial need (Eg : Loan repayment) 2 – Ease in supervision and cultivation - Needs of the family 1 – Always cultivated the same acreage - Do not know
2.	How do you decide on the different species/ varieties of safed musli	3 – Market conditions - Recommendations of extension workers/ scientists 2 – Experiencing with new variety - Recommendation of salesman 1 – Use seeds which are locally available - General experience from last year - Do not know
3.	How did you decide the quantity of fertilizers used to your varieties	3 – Soil tests - Recommendations of extension workers/ scientists - Careful observation 2 – General experience - Recommendations of relatives/ neighbors and others 1 – Used what was at hand

		- Used which was available - Always used the same amount or same as last year - Do not know
4.	How did you decide the various measures of plant protection	3 – Recommendations of extension workers/ scientists 2 – careful observation - General experience - Recommendations of relatives/ neighbors/ other farmers 1 – Used whatever was at hand - Used whatever was available - Always used the same - Do not know
5.	How did you decide the time of marketing of your produce	3 – Consideration of keeping quality of produce - Market rates - financial need 2 – Recommendations of relatives/ neighbors/ other farmers - recommendations of salesman 1 – Always sold at the same time of the year - Immediately after harvest - Do not know
6.	What type of written records you keep	3 – Farm books - Production record - Receipts -Bill and sales - Records of expenditure and income 2 – Records of labourers 1 – Used memory - Do not know or none
7.	Have you ever tried to figure out what your profit was from any major crop on your farm	1 – Yes 0 – No

4. Economic motivation: (Supe 1969)

Sr. No.	Statements	SA	AG	UD	DA	SD
1.	A safed musli entrepreneur should work towards more safed musli yield as an economic profit. (+)					
2.	The most successful entrepreneur is one who makes more profit. (+)					
3.	A safed musli entrepreneur should try new idea, which may earn him more money. (+)					
4.	A safed musli grower should grow hybrid varieties of safed musli to increase monetary profits. (+)					
5.	It is difficult for the safed musl growers children to make good start unless he provides them with economic assistance. (-)					
6.	A safed musli grower must earn his living but the inost important thing in life cannot be defined in economic terms. (+)					

5. Risk orientation: (Supe 1969)

Sr.No.	Risk orientation	AG	UN	DA
1.	A safed musli growers should take greater risk than the average farmers			
2.	A safed musli grower should try new practices only after successfully used by other safed musli growers			
3.	Trying an entirely new practice in safed musli enterprise involves risk but it is worth			
4.	Safed musli management is full of risk			
5.	Safed musli entrepreneur should sustain in risk in development of his enterprise			

AG – Agree **UD –** Undecided **DA -** Disagree

6. Leadership ability: (Nandapurkar 1980)

Sr.No.	Statements	Always	Sometimes	Never
1.	Did you participate in group discussion on new farm practice			
2.	Whenever you see/ hear a new farm practice did you initiate discussion about it with your colleagues			
3.	Do village people regard you as good source of information on new farm practice			
4.	Do you assign the farm work to your family members			
5.	Do you offer new approaches to problems			

7. Management orientation: (Samanta 1977)

Following are the statements to measure the degree of management orientation please indicate your degree of agreement (SA – Strongly agree, A – Agree, SDA – Strongly disagree, DA – Disagree and UD – Undecidedness) to each of the following statements in the appropriate columns provided.

Sr. No.	Statements	Response pattern				
		SA	A	UD	DA	SDA
	Planning orientation					
1.	Each year one should think a fresh idea about safed musli crop to be cultivated in each type of land					
2.	It is not necessary to make prior decision about variety of safed musli crops to be cultivated					
3.	The amount of seed, fertilizer and plant protection chemicals needed for raising a crop should be assessed before cultivation					
4.	It is not necessary to think a head of the cost involved in the raising safed musli crop					
5.	One need to consult an safed musli expert for crop planning					
6.	It is possible to increase yield through safed musli production plan					

	Production orientation					
1.	Timely sowing of safed musli crop ensures good yield					
2.	It is a good practice to use recommended quantities/ qualities of seed					
3.	One should use plant protection chemicals at regular intervals irrespective of pests					
4.	One should use as much as irrigation water as possible when it is available					
	Market orientation					
1.	Market news is not much useful to the farmer					
2.	A farmer can get good price by grading his products					
3.	Cold storage can help the farmers to get better prices for his produce					
4.	One should purchase his inputs from the shop where his other relatives purchases					
5.	One should grow those crops which have more market demand					
6.	One should sell his produce to the nearest market irrespective of price					

PART- C

CONSTRAINTS

Sr. No.	Particulars	Yes	No	If problems, give reason
1.	Cultivation a. Land preparation b. Non availability of good quality suckers or planting material c. Non availability of manures and fertilizers d. Irregular supply of electricity e. Non availability of other inputs f. High cost of harvesting			
2.	Production a. Higher investment b. Required more working capital c. High labour cost d. Lack of skilled labour e. Non-availability of labour f. Non availability of bank loan g. Non availability of subsidy for the crop			

3.	Storage a. Non availability of warehouses b. High cost of storage charges by the warehouses c. Lack of knowledge of proper storage methods by the farmers			
4.	Marketing a. High cost of transportation b. Low price for the produce c. Lack of knowledge of price of various markets d. Exploitation by middlemen e. Variation in the market prices