MARKETING BEHAVIOUR OF MOGRA AND KAGDA GROWERS IN PALGHAR DISTRICT

BY

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MAY, 2016

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A thesis submitted to the

Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli

(Agricultural University)

Dist. Ratnagiri (Maharashtra State)

In partial fulfilment of the requirement for the degree of

MASTER OF SCIENCE

(AGRICULTURE)

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Approved by the Advisory committee

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CERTIFICATE

This is to certify that the thesis entitled **MARKETING BEHAVIOUR OF MOGRA AND KAGDA GROWERS IN PALGHAR DISTRICT** submitted to the Faculty of Agriculture, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri, Maharashtra State in the partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE (AGRICULTURE) in EXTENSION EDUCATION,** embodies the results of a piece of *bona-fide* research carried out by **MISS. YOGITA SUNIL PARAB (Regd No. 2385)** under my guidance and supervision. No part of this thesis has been submitted for any other degree or diploma. All the assistance and help received during the course of investigation and the sources of literature have been duly acknowledged by her.

Place: Dapoli.
Date:

(J. R. Kadam)
Chairman,
Advisory Committee
And Research Guide.

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A goal is a milestone which a youngster dreams and successfully achieves only with the blessings and the guiding lights of .....

Towards the end of my Endeavour, it's my privilege to extol all those who have directly or indirectly helped me to accomplish this project.

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Place: Dapoli

Date:

(Yogita Sunil Parab)

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VITA

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कृषि महाविद्यालय, दापोली

प्रबंधका शीर्षक	:	कोंकण के पालघर जिले में मोगरा और कागड़ा उत्पादकों के विपणन व्यवहार |
छात्र का नाम	:	योगिता सुनिल परब
पंजीकरण क्र	:	२३८५
संसोधन मार्गदर्शक	:	डॉ. जे. आर. कदम
पदवी	:	एम. एससी. (कृषि)
मुख्य विषय	:	विस्तार शिक्षा
पूर्णता का वर्ष	:	२०१६

प्रबंध सार

प्रस्तुत अध्ययन कोंकण क्षेत्र के पालघर जिले के पालघर और वसई-विरार तहसिल मे आयोजित किया गया | इसलिए ८ नमूना गावोंसे १२० मोगरा और कागड़ा उत्पादकों की विशेषरूपसे रचील अनुसूची की मद्द से बातचीत की गई |

मोगरा और □ □ □ □ □उत्पादकों के बहुमत 'मध्यम' उम्र, जोत भूमी, वार्षिक आय, खेती के अनुभव की उपज के थे। उत्तरदाताओं के बहुमत उत्पादकोंने 'माध्यमिक' शिक्षा, छोटे जोत, 'निष्पक्ष' सिंचाई की स्थिति और 'मध्यम' विपणन व्यवहार किया। आठ विशेषताओं अर्थात् शिक्षा, जोत, मोगरा और कागड़ा के तहत क्षेत्र □ □ □ □की उपज, वार्षिक आय, खेती के अनुभव, सिंचाई की स्थिति और सूचना के स्रोतों विपणन व्यवहार के साथ संखिकी स्तर पर समर्थनीय संबध दिखाई दिया। उत्तरदाताओं की अधिकतम उत्पादकोंको अपने पड़ोसियों और दोस्तों से विपणन के बारे में जानकारी मिली। बहुमत उत्पादकोंने अपनी उपज सीधे बाजार के लिए बेच दिया।

मोगरा और □□□□□ उत्पादकोंने मोगरा के लिए ‘बँगलोरी' किस्म का इस्तेमाल किया □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□, स्वस्थ नर्सरी कलमों का भी इस्तेमाल किया। बहुमत उत्तरदाताओं, 'जून-जुलाई' के महीने में उनका मोगरा और □□□□□ लगाया, जबकि '१.८ मीटर x १.८ मीटर' □□□□□ फूल में, रिक्ति मोगरा में '१.५ मीटर x १.५ मीटर' का पालन किया। कई उत्पादकोंने एक बीच की के रूप में ‘□□□’□□ खेती की। सभी मोगरा और □□□□□ उत्पादकोंने निराना के नियंत्रण के लिए हाथ निराई और संयंत्र की सुरक्षा के लिए उपयोगी नियंत्रण के उपायों का इस्तेमाल किया।

बहुमत (१००.०० प्रतिशत) उत्पादकोंने '□□□□□□□’□□□□□□□□□□□□□□□□□। अधिकतम संख्या उत्पादकोंने क्षेत्र में लाल मकड़ी घुन की पहचान की। नियंत्रण के उपाय के लिए रासायनिक नियंत्रण का उपयोग किया गया। बहुमत उत्तरदाताओं ने उर्वरक के रूप में 'यूरिया' □□ आवेदन किया। सभी उत्पादकों ने 'नवंबर-जनवरी के महीने में छंटाई का पालन किया। बहुमत उत्तरदाता सुबह सूर्योदय से पहले या जल्दी फूलों की छंटाई की।

मोगरा और □□□□ फूल के बहुमत उत्पादकों (९७.५० प्रतिशत) ने कहा कि फूलों की कटाई में 'मजदुरों की कमी' □□ एक बड़ी समस्या थी, □□□□□□.□□ प्रतिशत उत्पादकों □□ 'कीट और रोग के कारण कम गुणवत्ता के फूल’ इस समस्या का सामना करना। पैकेजिंग के मामले में, ९५.३३ प्रतिशत उत्तरदाताओं को 'पैकेजिंग सामग्री की अनुपलब्धता' की कमी का सामना करना पडा, उसके बाद (९२.५० प्रतिशत) ‘बाजार की दूरी’ का सामना करना पड़ा।

उत्तरदाताओं के बहुमत (९५.८३ प्रतिशत) ने यह सुझाव दिया की 'मार्केट जानकारी पास के स्थानों में उपलब्ध कराया जाना चाहिए’। उत्पादकों के प्रति ८८.३३ प्रतिशत द्वारा दिए गए सुझाव ये थे

की 'प्रत्येक बाजार जगह पर कीमतों का प्रदर्शन' और 'विपणन के नुकसान को कम करने के लिए बेहतर भंडारण, हैंडलिंग और प्रसंस्करण सुविधाओं के उपलब्ध होना चाहिए'।

विस्तार शिक्षण विभाग

कृषी महाविद्यालय, दापोली

प्रबंधाचे शीर्षक	:	पालघर जिह्यातील मोगरा आणि कागडा उत्पादकांच्या पणनविषयक वर्तणुकीचा अभ्यास
विद्यार्थिनीचे नाव	:	योगिता सुनिल परब
नोंदणी क्रमांक	:	२३८५
प्रबंध मार्गदर्शकाचे नाव	:	डॉ. जे. आर. कदम
पदवी	:	एम. एस्सी. (कृषी.)
मुख्य विषय	:	विस्तार शिक्षण
सादरीकरणाचे वर्ष	:	२०१६

सारांश

प्रस्तुत अभ्यास कोकण प्रदेशातील पालघर जिल्ह्यातील पालघर आणि वसई-विरार तालुक्यामध्ये घेण्यात आला. त्यासाठी आठ गावांमधून १२० निवडण्यात आलेल्या मोगरा आणि कागडा उत्पादकांची प्रत्यक्ष मुलाखती द्वारे माहिती घेण्यात आली.

सर्वेक्षणात बहुतांश मोगरा आणि कागडा उत्पादक ‘मध्यम’ वय, लागवडीखालील क्षेत्र, मोगरा आणि कागड्याचे उत्पन्न, वार्षिक उत्पन्न, शेतीविषयक

अनुभव असलेले आढळून आले. बहुतांश उत्पादक 'माध्यमिक' शिक्षण घेतलेले, लहान जमीनधारक, 'साधारण' सिंचन दर्जा आणि 'मध्यम' पणन वर्तणूक असणारे आढळून आले. शिक्षण, एकूण जमीन, मोगरा आणि कागडा लागवडीखालील क्षेत्र, त्यांचे उत्पन्न, वार्षिक उत्पन्न, शेतीविषयक अनुभव, सिंचन दर्जा आणि माहितीचा स्त्रोत या आठ वैशिष्ट्यानुसार विपणन वागणूक लक्षणीय संबद्धतापूर्ण होती. सर्वेक्षणात असे दिसून आले कि बहुतांश मोगरा आणि कागडा उत्पादकांनी माहितीसाठी शेजारी आणि मित्रांचे सहाय्य घेतले आणि बहुसंख्य उत्पादकांनी त्यांचे उत्पादन विनियोग न करता थेट बाजारात विकले.

मोगरा आणि कागडा उत्पादकाच्या सध्याच्या लागवड पद्धती मध्ये असे दिसून आले कि बहुसंख्य उत्पादक नांगरणी बरोबर मोगरयाची 'बँगलोरी' आणि कागड्याची गावरान जात आणि छाट कलम वापरणारे दिसून आले. बहुतांश उत्पादक मोगरा आणि कागड्याची लागवड 'जून-जुलै' महिन्यात करणारे, मोगरयाच्या लागवडीसाठी १.५ मी x १.५ मी, तसेच कागड्यासाठी १.८ मी x १.८ मी झाडांमध्ये अंतर ठेवणारे, आढळून आले. त्याचबरोबर बहुसंख्य उत्पादकांनी 'तगर' हे आंतरपीक म्हणून घेतलेले आहे. सर्वच उत्पादकांनी खुरपणीने तण नियंत्रण केले.

बहुतांश (१००.०० टक्के) उत्पादकांनी सर्वेक्षणात शेणखत वापरले. त्यांच्या शेतात जास्तीत जास्त लाल स्पायडर माइटस् आढळले गेले. काहींनी उपाय म्हणून रासायनिक नियंत्रणाचा वापर केला. सर्वेक्षणातील बहुसंख्य उत्पादकानी खत म्हणून युरियाचा वापर केला. सर्व उत्पादकांनी नोव्हेंबर ते जानेवारी या महिन्यात रोपांची छाटणी केली असे आढळून आले. सर्वेक्षणातील बहुसंख्य उत्पादकांनी सकाळी लवकर किंवा सूर्योद्यापूर्वी फुलांची काढणी केल्याचे आढळले.

बहुतांश उत्पादकांना (९७.५० टक्के) 'कामगारांची कमतरता' ही एक प्रमुख समस्या दिसून आली. तर ९६.१६ टक्के उत्पादकांना 'कीटक आणि रोगांच्या प्रादुर्भावामुळे कमी गुणवत्ता असलेली फुले' ही एक महत्वाची समस्या आढळून आली. आवेष्ट्णाच्या बाबतीत, सर्वेक्षणात ९५.३३ टक्के उत्पादकांना 'आवेष्टण साहित्य उपलब्धता नसल्याची' तसेच 'बाजारपेठ खूप दूर आहेत' (९२.५० टक्के) अश्या अडचणी दिसून आल्या.

बहुतेक (९५.८३ टक्के) उत्पादकांनी या सर्वेक्षणात सुचविले 'बाजाराची माहिती जवळच्या ठिकाणी उपलब्ध केली पाहिजे'. ८८.३३ टक्के उत्पादकांनी असे सूचविले की 'प्रत्येक बाजार ठिकाणी फुलांचे दर प्रदर्शित केले पाहिजे' आणि 'विपणन नुकसान टाळण्यासाठी सुधारित साठवणूक, हाताळणी आणि प्रक्रिया सुविधा उपलब्ध असावे'.

DEPARTMENT OF EXTENTION EDUCATION

COLLEGE OF AGRICULTURE, DAPOLI

Title of thesis	**:**	Marketing behaviour of mogra and kagda growers in Palghar district of Maharashtra
Name of student	**:**	**Miss. Yogita Sunil Parab**
Regd. No.	**:**	2385
Name of the Research Guide	**:**	**Dr. J. R. Kadam**
Degree	**:**	M. Sc. (Agri.)
Major Subject	**:**	Extension Education
Year of award of degree	**:**	2016

THESIS ABSTRACT

The study was conducted in Palghar and Vasai-virar tahasils of Palghar districts of Konkan region. The sample was constituted of 120 mogra and kagda growers from 8 villages. The respondents were interviewed with the help of specially designed schedule.

Majority of mogra and kagda growers belonged to ‘medium’ age, area under cultivation, yield of mogra and kagda, annual income, farming experience. Majority of the respondents had ‘secondary’ education, small land holding, ‘fair’ irrigation status and ‘medium’ marketing behaviour. Eight characteristics namely education, land holding, area under sapota, yield of mogra and kagda, annual income, farming experience, irrigation status and sources of information had significant association with marketing behaviour. Maximum number of the respondents got information from their neighbours and friends regarding marketing and undertaking new plantation. Majority of growers sold their produce directly to the market with less utilization.

In existing cultivation practices followed by the mogra and kagda growers, majority of the respondents followed ploughing and used the ‘banglori’ variety of mogra and local variety of kagda, had used healthy nursery cuttings while selecting the planting material. Majority of the respondents had planted their mogra and kagda in the month of ‘June-July’, had followed the spacing ‘1.5 m x 1.5 m’ in mogra, while ‘1.8 m x 1.8 m’ in kagda flower. Many growers cultivated ‘tagar’ as an intercrop. All mogra and kagda growers used the hand weeding for control the weed growth and useful control measures for protection of plant.

Majority (100.00 per cent) of the respondents used ‘FYM. Maximum number was identified red spider mite in their field. Control measure with chemical control was done by some respondents. Majority of the respondents had applied ‘urea’ as a fertilizer. All growers followed pruning in the month of ‘November-January’. Majority of the respondents had harvested the flowers early in the morning or before sunrise.

Majority of the growers of mogra and kagda flowers (97.50 per cent) had stated that ‘Shortage of labour’ was a major problem in harvesting of flowers, whereas 96.16 per cent of them had faced the constraint ‘Low quality flowers due to pest and disease attack’. In case of packaging, 95.33 per cent of respondents had faced the constraints of ‘Non availability of Packaging material’, followed by ‘Markets are far away’ (92.50 per cent).

Majority (95.83 per cent) of the respondents suggested ‘Market information should be made available in nearby places’. ‘Improved storage, handling and processing facilities should be available to reduce marketing loss’ and ‘Display of prices at each market place’ were the suggestions made by 88.33 per cent growers.

APPENDIX I

LIST OF SELECTED VILLAGES AND NUMBER OF RESPONDENTS

Sl. No.	Name of village	Name of tahsils	No. of respondents
1.	Ranpatti	Palghar	15
2.	Bangalipada	Palghar	15
3.	Ranpada	Palghar	15
4.	Gaonpada	Palghar	15
5.	Arnala	Palghar	15
6.	Mukkampada	Palghar	15
7.	Galyacha pada	Palghar	15
8.	Kalyacha pada	Palghar	15
		Total	**120**

APPENDIX II

Respondents selected for the study

Tahsil- Palghar

Sl. No.	Villages (Ranpatti) Name of the respondents	Sl. No.	Villages (Bangalipada) Name of the respondents
1	Vijay Anant Patil	1	Jaykumar Tandel
2	Hirababu Kudu	2	Satish Meher
3	Ashok Shankar Kudu	3	Arun Tandel
4	Anant Sitaram Patil	4	Vasudev Mahadev Tandel
5	Dinkar Shivram Bhoir	5	Jagdish Tandel
6	Murlidhar Meher	6	Bhavesh Tandel
7	Bhalchandra Mhatre	7	Vinayak Mahadev Vaiti
8	Vasant Madhusadan Patil	8	Vasudev Mahadev Vaiti
9	Anant Kuru	9	Bharati Vaiti
10	Harishchandra Biku Tandel	10	Naresh Tandel
11	Jagdish Tandel	11	Arun Tandel
12	Balkrushna Tandel	12	Balkrushna Patil
13	Paresh Tandel	13	Prashant Gharat
14	Shankar Tandel	14	Rohidas Mahadev Mhatre
15	Ramesh Tandel	15	Kishore Patil

Sl.No.	Villages (Ranpada) Name of the respondents	Sl.No.	Villages (Gaonpada) Name of the respondents
1	Prabhunath Patil	1	Jagdish Tandel
2	Bhagavan Patil	2	Chandrakant Nanavaiti
3	Vijay Meher	3	Rajesh Tandel
4	Bharat Meher	4	Bhavesh Tandel
5	Vasant Meher	5	Arun Tandel
6	Manish Tandel	6	Prakash Tandel
7	Raviraaj Anant Vaiti	7	Hitesh Vaiti
8	Balkrushna Mahadev Vaiti	8	Shankar Ramchandra Tandel
9	Vinayak Mahadev Vaiti	9	Ravi Ramchandra Tandel
10	Vasudev Mahadev Vaiti	10	Laxman Ramchandra Tandel
11	Shankar Tandel	11	Prakash Keshav Tandel
12	Digambar Mohan Tandel	12	Rajesh Vaiti
13	Bhagava Nana Vaiti	13	Jagdish Vaiti
14	Prakash Vaiti	14	Hemant Tandel
15	Suresh Pandurang Meher	15	Arvind Tandel

Tahsil- Vasai-virar

Sl. No.	Villages (Arnala) Name of the respondents	Sl. No.	Villages (Mukkampada) Name of the respondents
1	Sanjay Parshuram Tandel	1	Dinesh Pandurang Vaje
2	Kamal Jagnnath Tandel	2	Prakash Dattatrey Vaje
3	Rajan Jagnnath Meher	3	Yogesh Yashavant Vaje
4	Suresh Meher	4	Bharat Madhukar Kuru
5	Rajendra Shreekrushna Bhat	5	Madhukar Vitthal Kuru
6	Jayesh Meher	6	Pravin Vitthal Kuru
7	Haresh Meher	7	Madan Gopal Kuru
8	Jagdish Meher	8	Vikas Kudu
9	Dayanand Meher	9	Mohan Kudu
10	Rukesh Meher	10	Nandukar Kudu
11	Jagdish Meher	11	Purushhottam Kudu
12	Mahesh Patil	12	Anant Kudu
13	Bipin Raut	13	Madhukar Kudu
14	Prashant Vaje	14	Paravin Kudu
15	Hemchandra Laxman Vaje	15	Dhiraj Kudu

Sl. No.	Villages (Galyachapada) Name of the respondents	Sl. No.	Villages (Kalyachapada) Name of the respondents
1	Ajit Kudu	1	Balkrushna Ramchanadra Bhoir
2	Kishore Madhukar Bhoir	2	Anil Ramchandra Bhoir
3	Vasudev Mahadev Bhoir	3	Prakash Laxman Bhoir
4	Balavant Kanha Bhoir	4	Ashok Kashinath Bhoir
5	Bharat Kashinath Bhoir	5	Dharmendra Ganapat Bhoir
6	Kishore Narayan Bhoir	6	Liladhar Laxman Bhoir
7	Yogita Chandrakant Patil	7	Purushhottam Arjun Bhoir
8	Anant Narayan Bhoir	8	Damodar Babu Bhoir
9	Balkrushna Hari Bhoir	9	Pandurang Dharma Vaje
10	Purushhottam Damodar Bhoir	10	Madhukar Mukund Bhoir
11	Madhukar Vitthalkudu	11	Maruti Sivaram Shinge
12	Ramesh Bhoir	12	Nitin Yashvant Shirke
13	Ramchandra Kashinath Bhoir	13	Mahesh Mahadev Ghanekar
14	Suraj Kashinath Bhoir	14	Sujit Laxman Shigvan
15	Ganesh Madhukar Bhoir	15	Rajesh Soma Mali

Sl. No.	Statements	Scoring pattern
1.	**Reasons for selling at a particular period/ time**	
a.	Highly perishable	1
b.	Quality was not good	2
c.	No cold storage facility available	3
d.	Financial urgency	4

e.	Indebtedness to trader	5
2.	**Whom do you sale the produce**	
a.	Directly to the consumer	1
b.	To the wholesaler through the commission agent	2
c.	To the traders through the co-operative societies	3
d.	To the Govt. agencies such as hostel	4
3.	**Reasons to sell to a particular agency**	
a.	The agency is very nearer one	1
b.	The agency is worthy credit	2
c.	I have no time to engage myself in directly to consumer	3
d.	Immediate cash payment	4
e.	Previous agreement	5
f.	Better price	6
4.	**Where do you sell the produce**	
a.	In the village	1
b.	In the nearby bazaar	2
c.	In the distant market	3
5.	**Reasons for selling at a particular place**	
a.	Market is very near to place	1
b.	The better transport facilities available in the market	2
c.	Better price are available in the market	3
d.	Better market facilities available in the market	4

APPENDIX III

Specific Marketing Behaviour

Appendix IV

विस्तार शिक्षण विभाग,

कृषि महाविद्यालय, दापोली

प्रश्नावली

पालघर जिल्यातील मोगरा आणि कागडा बागायतदारांच्या पणनविषयक वर्तणुकीचा अभ्यास

भाग पहिला

अ. १) मोगरा आणि कागडा बागायतदाराचे

नाव:_____

गाव: तालुका:

२) वय: **३) शिक्षण:** इयत्ता/अशिक्षित:

४) जमिनीचा तपशील

अ) कृपया आपल्या जमिनीविषयी पुढील तपशील द्या.

अ. क्र.	**जमिनीचा प्रकार**	**मालकीचा प्रक्रार**			
		स्वतःच्या मालकीची (हे)	**खंडाणे घेतलेली (हे)**	**खंडाने दिलेली (हे)**	**एकूण क्षेत्र (हे)**
१.	भातशेती				
	अ) जिरायत शेती				
	आ) सिंचीत शेती				
२.	बागायत				
३.	इतर				
	एकूण (हे)				

५) मोगरा खालील क्षेत्र:_____हेक्टर **६) कागडा खालील क्षेत्र:**_____हेक्टर

७) मोगऱ्याचे उत्पन्न:_____क्विं/हे **८) कागडयाचे उत्पन्न:-** _____क्विं/हे

९) वार्षिक उत्पन्न

अ.क्र	**उत्पन्न**	**वार्षिक उत्पन्न (रु.)**
१	शेती	
२	नोकरी	
३.	निवृत्ती वेतन	
४.	स्वतंत्र व्यवसाय	
५.	दुग्ध व्यवसाय	
६.	पशुपालन	
७.	मजुरी	
८.	इतर	
	एकूण	

१०) शेतीचा अनुभव: वर्ष

११) सिंचनदर्जा:

अ) आपणाकडील सिंचनसुविधांचा तपशील द्या.

अ. क्र.	ओलिताचे साधन	पाणीपुरवठ्याचे साधन			पाण्याखाली भिजू शकणारे क्षेत्र (हे)	प्रत्यक्षात भिजणारे क्षेत्र (हे)	पाणी देण्याची पदधत		
		वीजपंप (H.P.)	डिझेल (H.P.)	इतर			भू-पृष्टा द्वारे	तुषार सिंचन	ठिबक सिंचन
१.	विहीर								
२.	नदी								
३.	तलाव								
४.	कुपनलिका								
५.	इतर								
	एकूण								

११) माहितीचा स्त्रोत:

१.	कोकण कृषी विद्यापीठ कृषीसहाय्यक	
२.	ग्रामसेवक	
३.	कृषी ग्रामविस्तारक	
४.	शेजारी/मित्र	
५.	प्रगतीशील शेतकरी	
६.	कृषीविस्तार अधिकारी	
७.	कृषीअधिकारी	
८.	वृत्तपत्रे	
९.	विषयविशेषज्ञ	
१०.	शेतीविषयक मासिके	
११.	आकाशवाणी	
१२.	दूरदर्शन	
१३.	इतर	

१२) उत्पनाचा विनियोग कसा करता.

अ.क्र.		प्रमाण (किलो)						
	मोगरा आणि कागडा	स्वत:च्या घरी	शेजारी	मित्र	नातेवाईक	विक्रीसाठी	दर (रुपये)	विक्रीचे उत्पन्न (रुपये)

१.	गजरा							
२.	फुलहार							
३.	अत्तर							
४.	अगरबत्ती							
५.	सजावट							
६.	इतर							

आपण मोगऱ्याचा आणि कागडयाचा याव्यतिरिक्त कशाप्रकारे विनियोग करता?

१)

२)

३)

४)

आ. १) मोगरा आणि कागडा लागवड पद्धत:

अ.क्र.	**लागवड पदधत**	
१.	जमिनीची पूर्वमशागत	
२.	मोगरा आणि कागडा लागवडीचा काळ	
३.	लागवडीची पद्धत	
	अ. छाट कलम	
	आ. नर्सरी	
	इ. फुटलेल्या मुळांची छाट कलम	
४.	हंगाम	
५.	अंतर	
६.	मुख्यपिक	

अ.क्र	पिकाचे नाव	क्षेत्र (हे.)	उत्पादन (कि.)	उत्पन्न (रुपये)

७.	मोगरा आणि कागडा व्यतिरिक्त आंतरपिके

	अ.क्र	आंतरपिकाचे नाव	क्षेत्र (हे.)	उत्पादन (कि.)	उत्पन्न (रुपये)

	जाती:	मोगरा	कागडा

९.	खत व्यवस्थापन	
	अ. कोणती खत देतात? (सेंद्रिय खत/ रासायनिक खत/ हिरवळीचे खत)	
	आ. खत देण्याची पद्धत	
	इ. किती प्रमाणात घालता?	
	ई. कधी देतात?	

१०.	पिक संरक्षण (रोग व कीड व्यवस्थापन)						
	अ.क्र.	रोगाचे नाव	ओळखण्याची वैशिष्ट्ये	संरक्षणाचे उपाय			
				औषध	वेळ	प्रमाण	पद्धत

११.	अ. क्र.	किडीचे नाव	ओळखण्याची वैशिष्ट्ये	संरक्षणाचे उपाय		
				औषध	प्रमाण	वेळ	पद्धत

१२.	आंतर मशागत व तणनियंत्रण	

१३.	काढणी	
१४.	छाटणी	
	अ. हंगाम	
	आ. छाटणीची पद्धत	
	१. दरवर्षी	
	२. १-२ वर्षांनी	

२) अडचणी

आपणास मोगरा आणि कागडा लागवड करताना अडचणी येतात का? होय/नाही

असल्यास नमूदकरा

अ.क्र	**मोगरा आणि कागडा उत्पादकाच्या अडचणी**
१)	
२)	
३)	
४)	
५)	

भाग दुसरा

इ. शेतकऱ्यांची पणनविषयक वर्तणूक:

मोगरा आणि कागडाची पणनविषयक माहिती:

१. मोगरा आणि कागडाच्या कोणकोणत्या जातींची लागवड तुम्ही करता?

अ.क्र	**जाती**	**कालावधी**	**एकूणक्षेत्र**	**सरासरी उत्पन्न**
	मोगरा			
१.				
२.				
३.				
४.				
	कागडा			

१.				
२.				
३.				
४.				

२. तुम्ही मोगरा आणि कागडयाची विक्री फुलप्रक्रिया केंद्राला करता का? होय/नाही

जर होय, प्रक्रिया केंद्राच

नाव_____

३. तुम्ही मोगरा आणि कागडा योग्य किमतीत विकतात का? होय/ नाही

जर होय,तर कशाप्रकारे

_____
___

४. तुम्ही तुमच्या मोगरा आणि कागडाच्या उत्पादनाची प्रतवारी करता का? होय/ नाही

करत असल्यास कशाप्रकारे.

अ.क्र	**प्रतवारी**	**मोगरा**	**कागडा**	**दर (रु/ क्विं)**
१.	प्रत१-			
२.	प्रत२-			
३.	प्रत३-			

५. विक्रीचा कालावधी: नेहमी/ एक दिवसा आड/ इतर

६. एखाद्या विशिष्ट कालावधीत विक्री करण्याचे कारण.

१. नाशिवंत ( )
२. गुणवत्ता चांगली नसणे ( )
३. शीतग्रहाची सोय उपलब्ध नसणे ( )
४. आर्थिक गरज ( )
५. दुकानदाराचे कर्ज ( )
६. इतर कारण (कृपया नमूद करा)
   १.
   २.

८. तुम्ही तुमच्या उत्पन्नाची विक्री कोणास करता?

१. थेट ग्राहकला ( )
२. आठवड्याच्या बाजारात दलालामार्फत घाउक विक्रेत्याला ( )
३. सहकारी संस्थेमार्फत व्यापाराला विक्री ( )
४. शैक्षणिक संस्था उदा. वसतिगृह इ. ( )
५. इतर
   १.
   २.

९. विशिष्ट संस्थेत विक्री करण्याचे कारण

१. जवळ असल्याने ( )

२. योग्य किंमत मिळत असल्याने ( )

३. मला थेट ग्राहकाला विक्री करण्यासाठी पुरेसा वेळ उप्लबद्ध नसल्याने ( )

४. तातडीने मिळणारा रोख रक्कम ( )

५. मागील करार

६. इतर कारण (स्पष्ट करा)

१.

२.

३.

१०. तुम्ही तुमच्या उत्पादनाची विक्री कुठे करता?

१. खेडेगावात ( )

२. गावाजवळ ( )

३. लांबच्या बाजारात ( )

४. इतर

१.

२.

३.

११. एखाद्या विशिष्ट ठिकाणी उत्पादन विक्री करण्याचे कारण.

१. बाजार खूप जवळ असल्याने ( )

२. योग्य वाहतुकीची सोय उपलब्ध असल्याने ( )

३. योग्य बाजारपेठ उपलब्ध असल्याने ( )

४. योग्य दर प्राप्त होत असल्याने ( )

५. इतर

१.

२.

३.

ई) मोगरा आणि कागडा पणनविषयक अडचणी आणि सूचना नमूद करा.

अडचणी	सूचना

Figure 2: Distribution of the respondents according to their Age

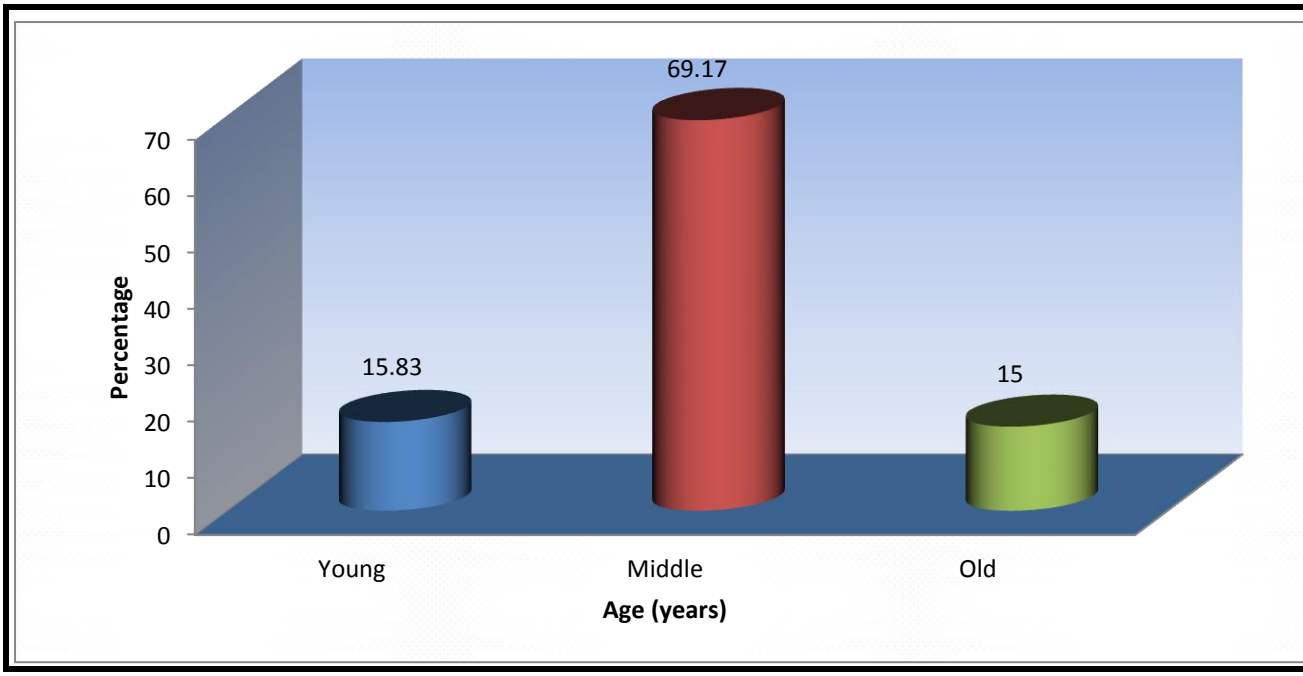


Figure 3: Distribution of the respondents according to their Education

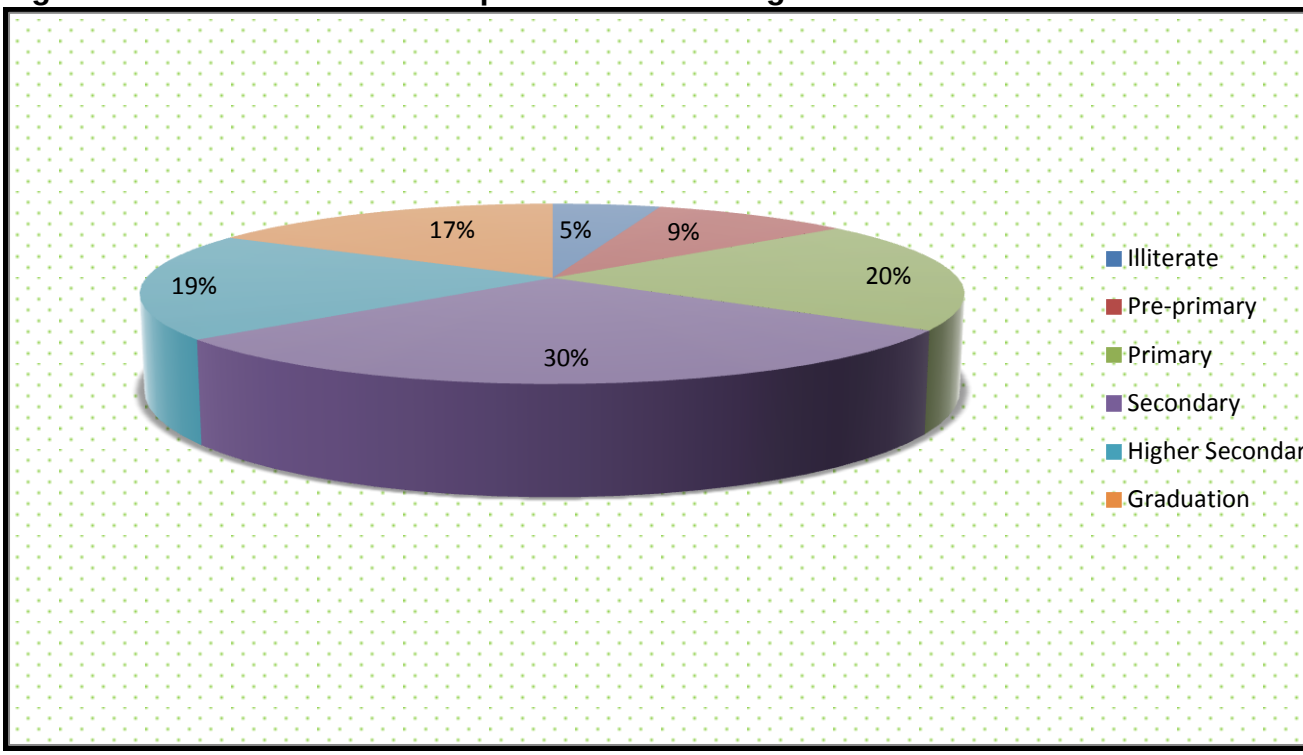


Figure 4: Distribution of the respondents according to their Size of land holding

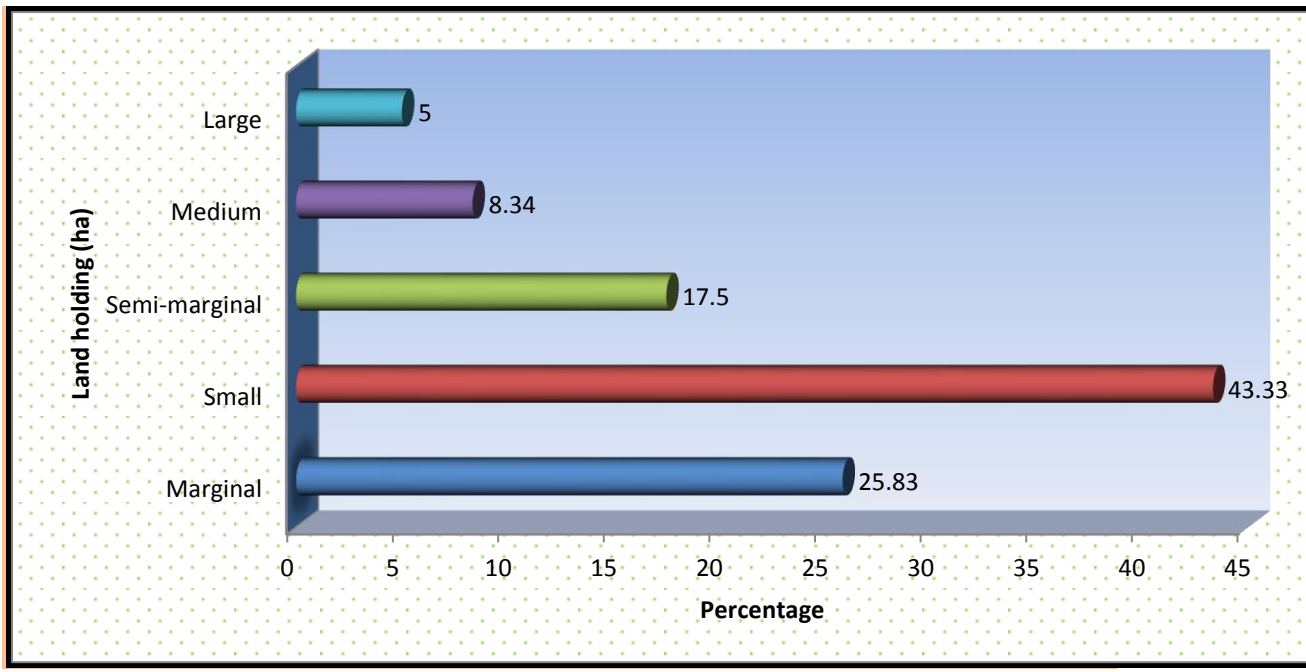


Figure 5: Distribution of the respondents according to their Area under cultivation

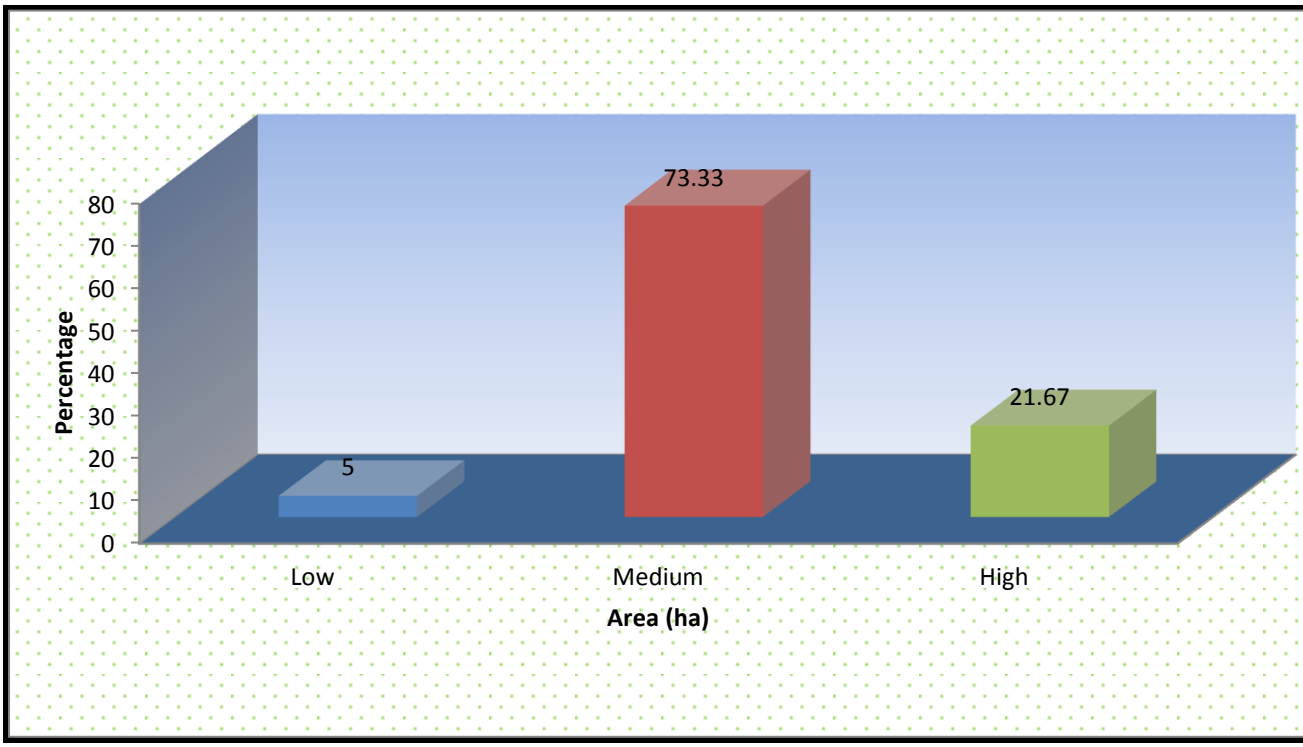


Figure 6: Distribution of respondents according to their Yield

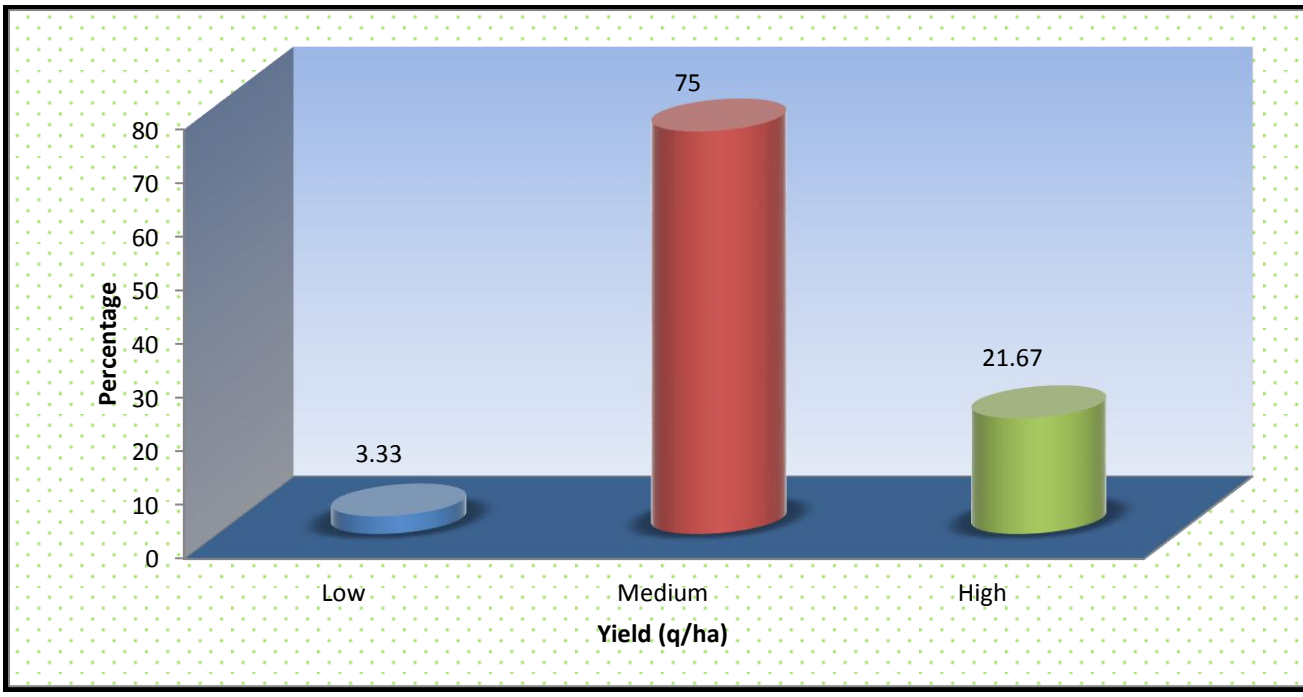


Figure 7: Distribution of the respondents according to their Annual income

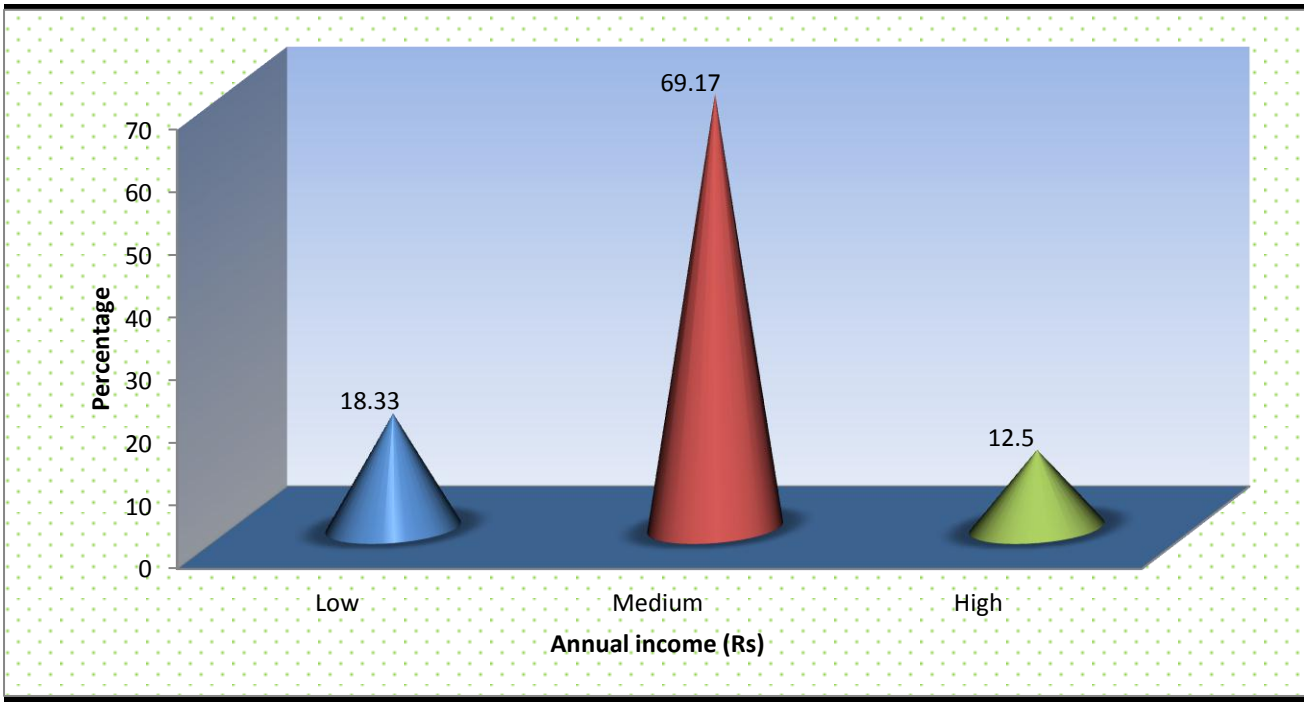


Figure 8: Distribution of the respondents according to their Farming experience

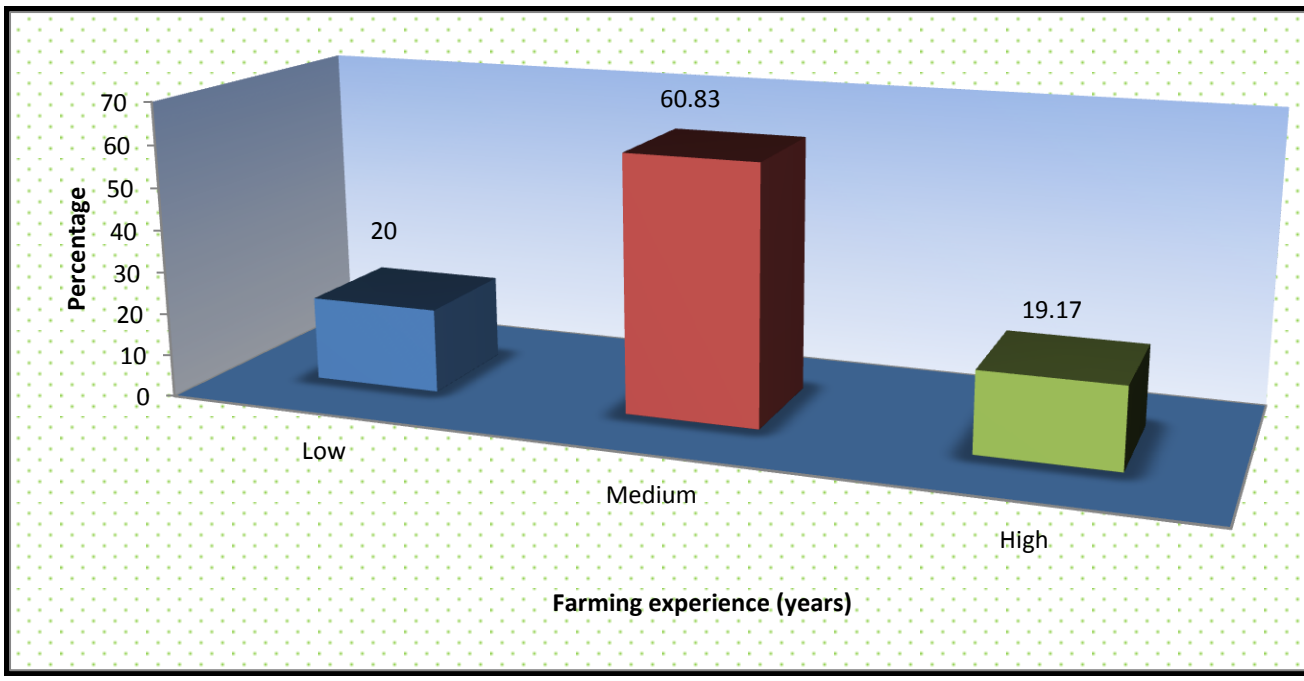


Figure 9: Distribution of the respondents according to their Irrigation status

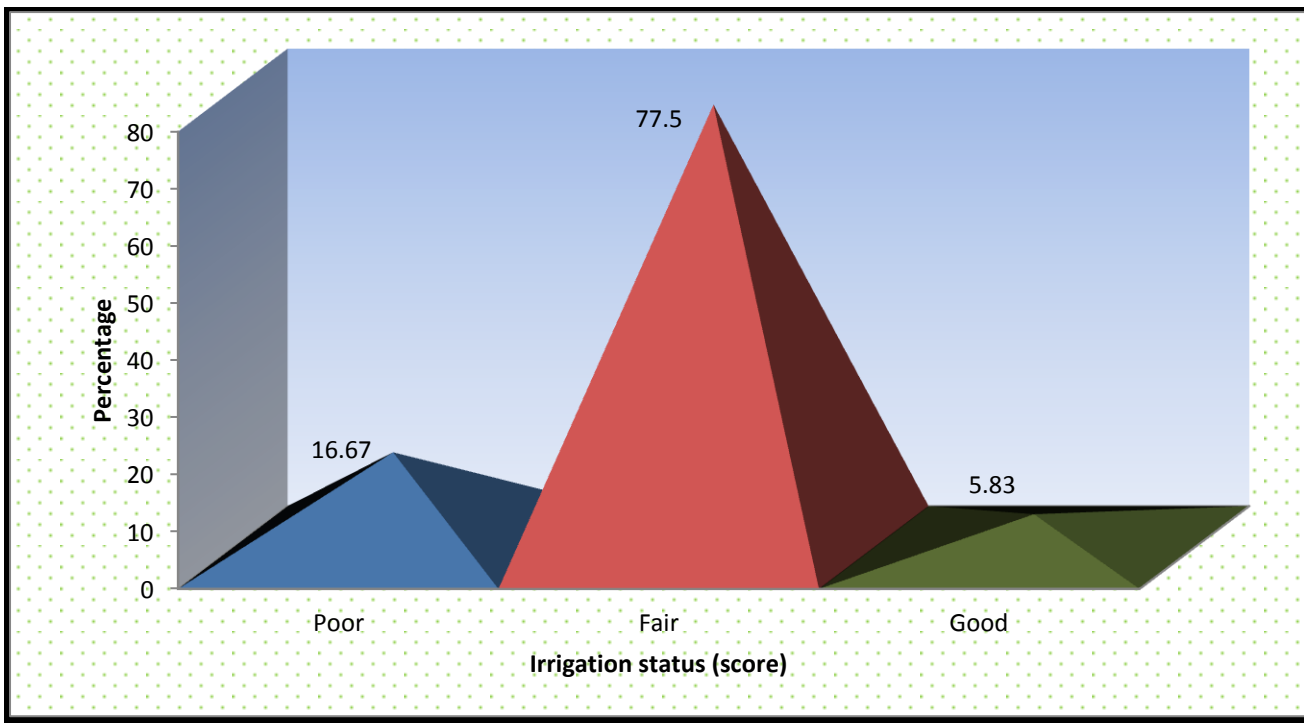


Figure 10: Distribution of the respondents according to their Sources of information

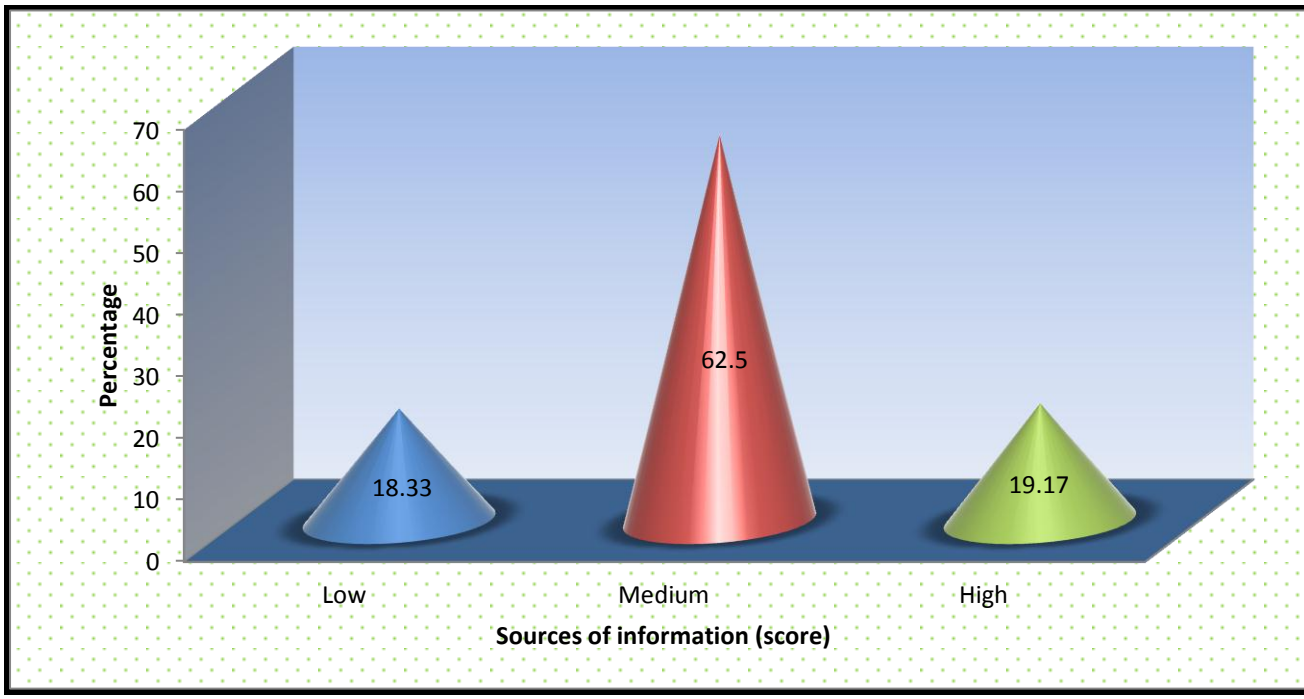


Figure 11: Distribution of the respondents according to their Utilization pattern

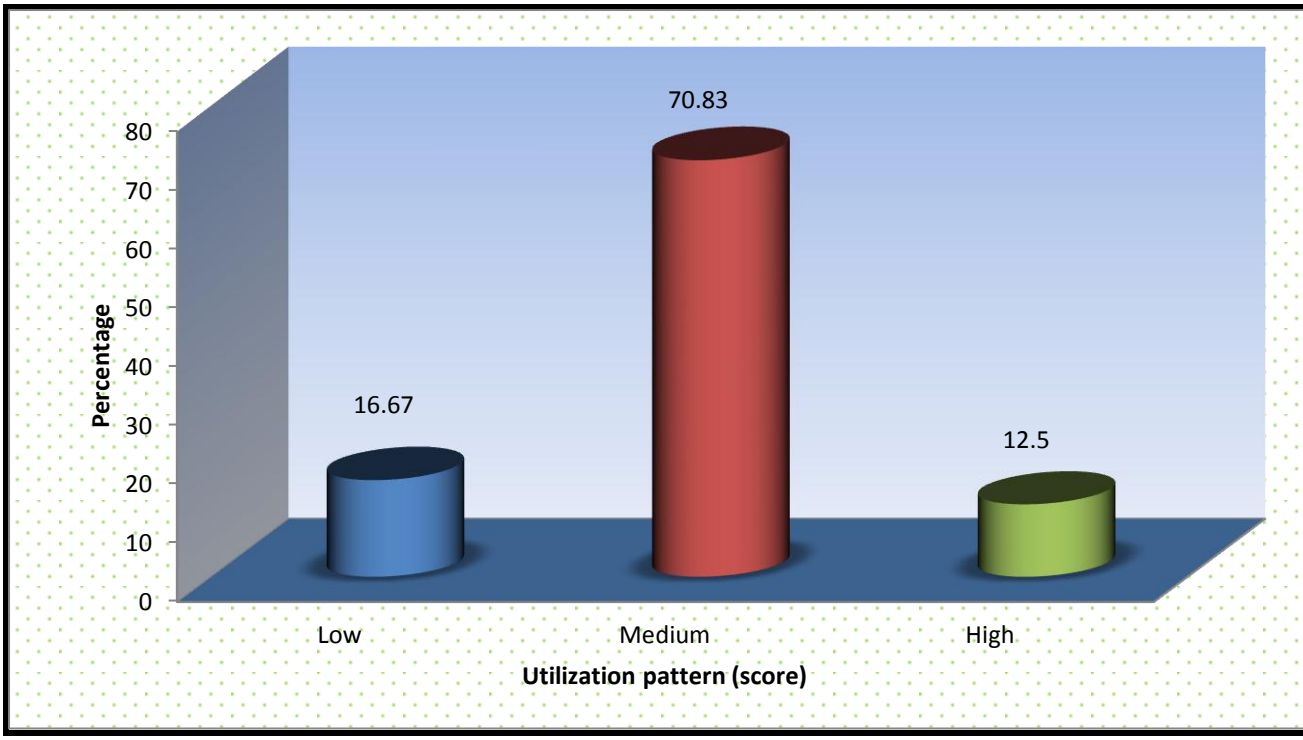
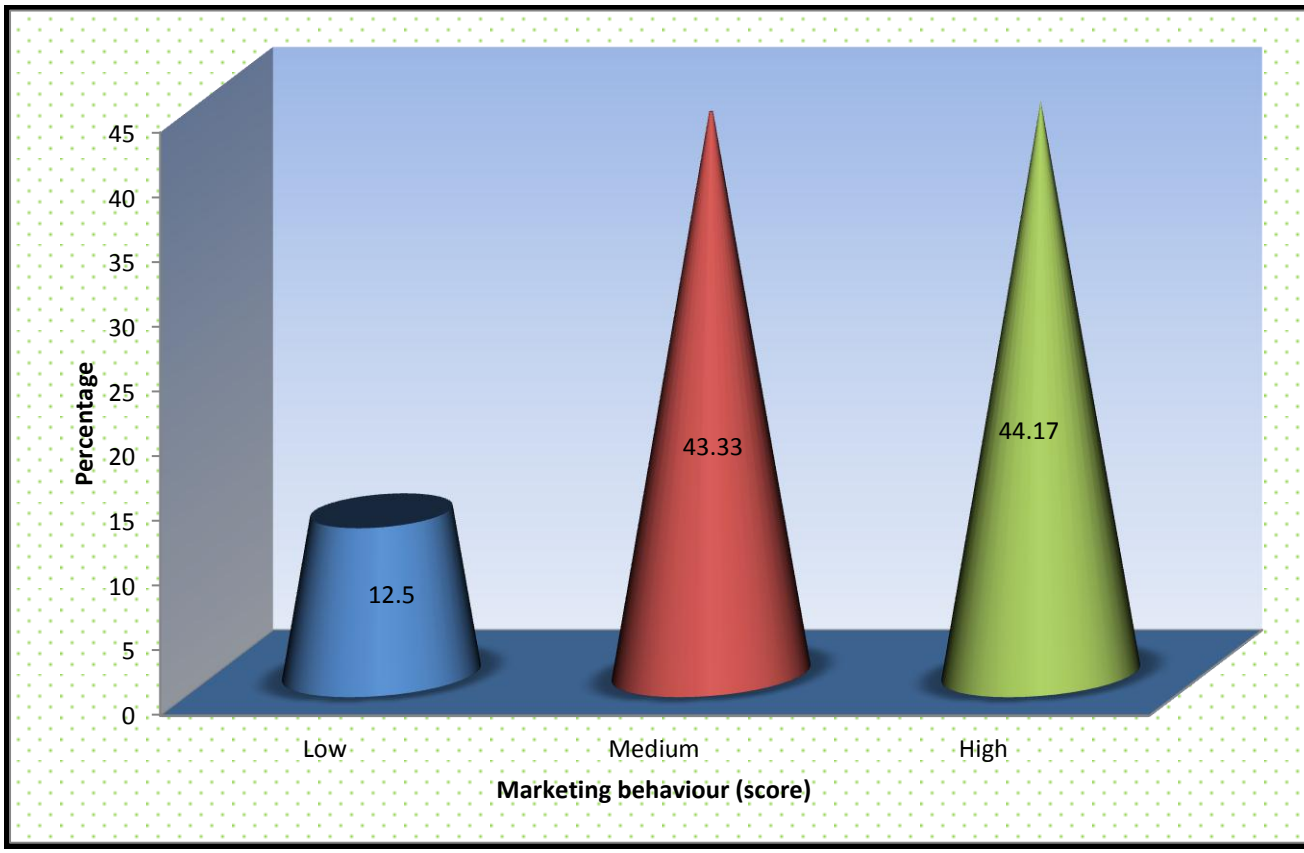
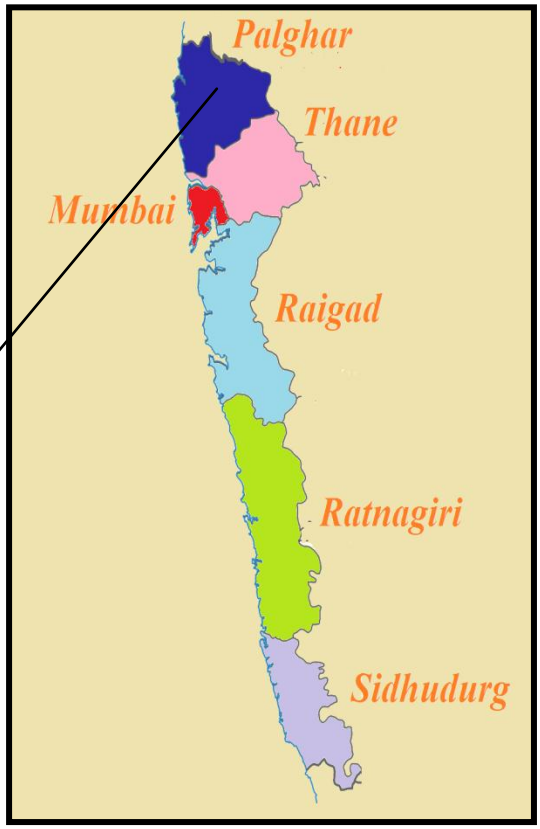
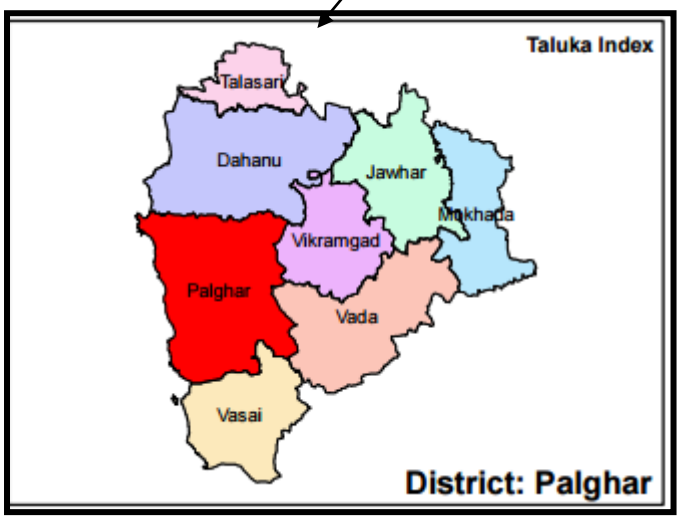

70.83
80
70
60
50
40
30
20
10
0
Percentage
16.67
12.5
Low
Medium
High
Utilization pattern (score)

Figure 12: Distribution of the respondents according to their Marketing behaviour



Konkan





LEGEND

Area under Study

- **Palghar**
- **Vasai-virar**

(Note: Map not to the scale)

Plate I. Investigator while interviewing the respondents

VITAE

Name: Miss. Yogita Sunil Parab

Degree completed: B.Sc. (Ag)

Date of Birth: 15th June, 1992

Permanent address: 202, Aarti apartment, Boleshwari Road, Bolinj, Virar (west), Tal-Vasai, Dist.- Palghar, Pin-401 303.

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ACADEMIC QUALIFICATION:

Exam	Divisional Board/ University	Year	Marks	Class
B. Sc. (Agri.)	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli	2014	8.15	First class
H. S. C.	Viva College, Virar	2010	7.76	First class + Distinction
S. S. C.	Aadarsh Vidyalaya, Bolinj	2008	8.43	First class + Distinction

OTHER QUALIFICATION:

- Basic knowledge of computer (MS-Word, MS-Power Point, MS-Excel) **completed certificate course on computer application (MS CIT)** with 63% in the year 2011
- Typing course (30 speed) with 76% in the year 2014.
- Participated in Folk Dance and was First in the Inter Collegiate Cultural Competition held at College of Agriculture, dapoli during 28-29 Aug, 2011.
- Participated as a Student in the 9th Maharashtra State Inter-University Youth Festival Indradhanushya-2011 held at Maharashtra university of Health Sciences, Nashik during 5th-9th Nov, 2011.

- Participated in the Inter Collegiate Monsoon Night Adventure race held on 27th -28th July 2012, Pune.
- Participated in National Service Scheme held at Mauje Dapoli during the year 2012-13.
- Participated in the workshop on “Application of PRA tools and techniques for SREP development” organized by Extension Education Institute(GOI, Ministry of Agriculture) Anand Agricultural University Gujarat on 6,7,8 Jan.2016 at DBSKKV, Dapoli (M.S.).
- Participated in Poster presentation in International Conference on Agricultural economics-2016 organized from 12 to 13 Feb, 2016 at Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, ratnagiri, Maharashtra, India.

CHAPTER I

INTRODUCTION

Flowers are inseparable from the social fabric of human life. Flowers being adorable Creation of God befits all occasions be it at birth, marriage or death. In the past, flowers were not of much economic importance. One would grow flowers to fulfill his or her aesthetic desire. At times, flowers were offered for sale to meet the special requirements of people. With the passage of time drastic changes have come about in the life style of people leading to commercialized cultivation of flowers. Today, flower plants are no longer meant for only window garden but play an important role in the decoration of the living houses and office establishments. (Mathivanan, B. 2013)

Floriculture is a fast emerging and highly competitive industry. With the continuous introduction of new cultivars and new crops, cultural techniques are changing and hence new products are developing. Ornamental crop culture technology is improving with the availability of equipments and there is a sea change in the trend of consumers. New generations of growers are coming forward to employ modern technology for maximizing production and offer quality produce for consumer acceptability, thus fetching a better price. It has emerged as a lucrative profession with the much higher potential for returns compared to other agri-horticultural crops. The science and art of commercial floriculture has been recognized as an economic activity with the potential for generating employment and earning valuable foreign exchange. In several countries of the world, floricultural products are amongst the main export items of agricultural origin. For any country to diversify its agricultural base geared towards export, the ornamental crop industry presents one of the most interesting and viable options. The aesthetic value of flowers and ornamental plants, their use in social events, overall satisfaction in working with them and high income generating power are attracting modern entrepreneurs to invest money in the floriculture industry. The demand for flowers and ornamental plants for different needs like religious, official ceremonies, parties, house decoration, weddings, funerals, etc, is on the rise. This demand for fresh flowers and plants increases world-wide over the coming years.

Present Situation of Flowers Cultivation

In spite of the long and close association with floriculture, the records of commercial activity in the field are very few. The information on the area under floriculture and the production generated is highly inadequate. As commercial floriculture is an activity which has assumed importance only in recent times, there are not many large farms engaged in organized floriculture. In most part of the country flower growing is carried out on small holdings, mainly as a part of the regular agriculture systems. (Mathivanan, B. 2013)

Global Scenario

Due to globalization and liberalization, the floriculture sector has been characterized as a sector experiencing positive changes. Nearly 140 countries are involved in the cultivation of floricultural crops. At global level, flora business is around US$ 176 billion, which is expanding day by day and with an annual average growth rate of 10.3 per cent, is expected to reach US$ 250 billion by 2025 (Global Horticulture Market Outlook 2015).

The total world area under floriculture is 6,20,000 hectares among which Asia-Pacific occupies 4,53,000 ha (nearly 73 per cent of total). India occupies 51 per cent of area under floriculture in Asia – Pacific region. World floriculture market is growing significantly at the rate of 10-15 per cent per annum, estimated to be worth over $17 billion. Netherlands continues to dominate the world floriculture industry, accounting for 60 per cent (US$ 4.73 billion) of world floriculture exports in 2013. In this, fresh cut flowers and foliage contributes 49.1 per cent (US$ 83.1 billion) and live plants, bulbs and cuttings contribute to 50.9 per cent (US$ 8.60 billion). Flowers and foliage accounted for around 52.45 per cent, and live plants, bulbs and cuttings accounted for 47.55 per cent of total floriculture products at global trade (APEDA 2014). International trade in floriculture, to a large extent is organized along regional lines. Developed countries in Europe, America and Asia account for more than 90 per cent of the total world trade in floriculture products. Germany is the leading country in floriculture trade with 17.04 per cent share, followed by USA (10.57 per cent) and Netherlands (10 per cent)

while India falls on fifty second rank (0.08 per cent). In recent years, a paradigm change in the flora industry has been observed and has lead to the development of new productions centers in Asia and Africa which was earlier concentrated in USA and Europe. In Asia, India, China and Thailand are moving progressively in this direction and emerging leading countries. Asia-Pacific countries are the main suppliers to Japan and Hong Kong. African and other European countries are the principal suppliers to Europe's main markets, and the supplies to the United States are mainly catered by Colombia and Ecuador. (Alka Singh *et al. 2014)*

Indian Scenario

India is bestowed with diverse agro-climatic and ecological conditions, which are favorable to grow all types of commercially important flowers generally found in different parts of the world. It also enjoys the best climate in selected pockets for floriculture during winter months. India is in an enviable position to become a leader in the world floricultural trade because of the prevailing congenial location, overall favorable climate of liberalization and globalization and also specific incentives by the government and floricultural development. Specific and authentic quantitative data are not available for existing production and area under floriculture in India. In India area under cultivation of flower crops is 2,55,000 Ha with a production of 2297 MT of loose flowers and with a productivity of 6.9 MT/Ha in 2013-14. The country has exported 22485.21 MT of floriculture products to the world to the worth of Rs. 45590.62 lakh during the year 2013-14 (Indian Horticulture Database, 2014). The area and production trend of flower cultivation in India in case of loose flowers was 1754 (MT) and in Cut flowers was 543 (MT). In India, loose flower production in Tamil Nadu (18.00 per cent), Andhra Pradesh (12.98 per cent) and Karnataka (12.00 per cent), and cut flower production in West Bengal (33.10), Karnataka (12.30) and Maharashtra (10.30 per cent). (National Horticultural Board data base-2013)

Loose flowers like marigold, China aster, jasmine, crossandra, barleria etc occupy major flower cultivated area of the country as the domestic consumption is very high. Tamil Nadu, Karnataka and Andhra Pradesh are the leading loose flower producing states. Cut flowers like rose, tuberose,

gladiolus, chrysanthemum etc are highly popular and widely cultivated in the country. West Bengal, Karnataka, Maharashtra, Andhra Pradesh and Orissa are the leading cut flower producing states. Further, the trend of protected cultivation of cut flowers is also increasing in recent years in the country. Major flowers cultivated are rose, gerbera, carnation, etc. under polyhouse mainly in Maharashtra, Karnataka, Uttrakhand and Gujarat. Orchids like Dendrobiums, Vanda, Paphiopedilums, Oncidiums, Phalaenopsis and Cymbidiums and Anthuriums are grown under net house mainly at Sikkim, Arunachal Pradesh and Kerala. Liliums, Alstroemeria, tulips, etc are cultivated in Kashmir, HP and Uttarakhand. (Alka Singh *et al.*2014)

Floriculture in Maharashtra

In Maharashtra area under cultivation of flower crops was 23,300 ha with a production of 122.7 MT. In that area under jasmine is 2371 ha with a production of 3.50 MT. (NHB database-2013) Type of loose flowers like marigold, China aster, jasmine, crossandra, barleria etc occupy major flower cultivated area of the state. Presently, there are 32 export-oriented units in Maharashtra state. Major Loose flower producing districts are Thane, Nasik, Nandurbar, Dhule, Nanded and Ahmednagar. Thane district ranks first in area under flowers in the Konkan region of Maharashtra. Out of various flower crops kagda, mogra and spider lily are the prominent ones. Farmers of Vasai tahsil have specialized in the cultivation of kagda and mogra, while farmers in Dahanu tahsil have specialised in the cultivation of spider lily. (Shedage, 1989)

Importance

Jasmine is a highly valued ornamental plant for home gardens and commercial cultivation. Flowers and buds are used for making garlands, bouquets and for religious offerings, while *veni* is used as hair adornment. The flowers are also used for the production of perfumed hair oils and attars. The flowers should preferably be picked at night for extraction of essential oil. Jasmine fragrance is said to give a feeling of optimism, confidence and euphoria, and is helpful against depression, nervous exhaustion and stress related conditions. Jasmine is also used for catarrh, coughs, laryngitis, dysmenorrhea, labor pains, uterine disorders and many skin problems. In Konkan region the important flowers are grown as like Kagda, Jasmine, Rose, Chrysanthemum, Aster, Gladiolus, Tuberose and marigold due to their demand on one side and other side is favourable climate to grow them. Jasmine is one of the oldest fragrant flowers cultivated by the farmers of Palghar district Maharashtra. Favourable climatic conditions, availability of transport and good demand for flowers provide an ideal situation for flower cultivation due to nearness of Mumbai metropolitan region.

Among the varieties of jasmine, *Jasminum grandiflorum* (Pichi) is cultivated in more than 60 per cent of the area followed by *Jasminum auiculatum* (Mullai). Tamil Nadu is the leading producer of jasmine in the country with an annual production of 77,247 tonnes from a cultivated area of 9360 hectare (Singh, 2006). Karnataka is the second highest producer of jasmine flowers. In the year 2004 Karnataka has produced 20,244 tonnes of jasmine flower from 3,451 hectare earning 8,265 lakh rupees. The Tigala community near Devanahalli and Chickaballapur are extremely good at growing flowers.

Species

Some important species of jasmine are *J. auriculatum*, *J. beesianum* (Rosy Jasmine), *J. calophyllum*, *J. dichotomum* (Gold Coast Jasmine), *J. dispermum*, *J. faveri* or *J. caudatum*, *J. humile*, *J. bignoniaceum* (Yellow jasmine or Italian jasmine), *J. multiflorum*, *J. nitidum*, *J. officinale*, *J. parkeri*, *J. polyanthum*, *J. primulinum*, *J. pubigerum*, *J. revolutum*, *J. rex* (Kings

Jasmine), *J. sambac*, *J. smilacifolium*, *J. stephanense*, *J. trinerve*, *J. volubile* or *J. gracile* (Australian or Wax Jasmine) and *J. Wallichianum*. Some commercially important species are described below.

J. auriculatum: It is a shrub with shiny leaves and auricles. Flowers are white, sweet scented borne in pubescent, compound, many flowered flax cymes. Flowers are used for production of perfumes. Some important varieties are CO-1 Mullai, CO-2 Mullai, Pari Mullai, Long Point, Short Point.

J. grandiflorum: This jasmine is commonly called as Spanish Jasmine. It is a woody bush with pinnate leaves bearing 3 to 5 leaflets of equal size. It bears large, white flowers with delightful fragrance, borne in lax axillary or terminal cyme. It is extensively used for preparation of garland and decorative bunches. Some important varieties are CO-1 Pitchi, CO-2 Pitchi, and Arka Surabhi.

J. sambac (Mogra): It is popularly known as Arabian or Tuscan Jasmine. It is an evergreen twiner having simple cordate to oblong dark green leaves. Flowers are white, fragrant and small with three forked cymes. The flowers are used for making garland, bouquet etc. Some important varieties are Double Mohra, Gundumali, Iruvatchi, Kasturimalli, Madanbari, Oosimalli, Ramabanam, Single Mohra, Soojimalli, Khoya, Khoya Large, Arka Aradhana, Bale Japani, Butt Mohra.

J. officinale: It is commonly termed as White Jasmine or Poet's Jasmine. It is a deciduous climber bearing stalkless leaflets. Flowers are white and fragrant, borne in loose clusters.

J. multiflorum (Kagda): It is commonly called as Fussy/ Downy/Star Pinwheel Jasmine. It is a strong woody vine bearing simple, opposite leaves. Flowers are sessile, fragrant, large, white and borne in terminal umbels, having 6 to 9 petals. Arka Arpan is main variety of J. multiflorum. In Indian mythology, Kund is known for its whiteness. So, instead of the common western phrase 'white as snow', what often appears in Hindu mythological stories is 'white as kunda'. Also, beautiful white teeth are often compared to Kunda buds. It is held to be especially sacred to Vishnu. In Manipur, Kundo

flowers are used in worship, and are an essential part of a marriage ceremony. The bride garlands the groom with two Kundo flower garlands.

Jasminum multiflorum is native to India, Nepal, Bhutan, Laos, Burma, Thailand and Vietnam. It is widely cultivated in tropical and subtropical regions for its attractive and intensely fragrant flowers. The species is reportedly naturalized in Florida, Chiapas, Central America, Queensland and much of the West Indies.

Need of the Study

In recent years, the progressive farmers from Konkan region as well as Palghar district have adopted loose flower production and cut flower production on small scale. However, till today, empirical data about personal and socio-economic characteristics of mogra and kagda growers, its present status, constraints in production and marketing behaviour in Palghar district have not been collected. With this background, the present study was conducted with following specific objectives.

1. To study the personal and socio-economic characteristics of the mogra and kagda growers.
2. To study the existing cultivation practices of mogra and kagda growers.
3. To study the marketing behaviour of mogra and kagda growers.
4. To study the association between personal and socio-economic characteristics of mogra and kagda growers with their marketing behaviour.
5. To study the constraints faced by the mogra and kagda growers in marketing of flowers.
6. To seek suggestions of mogra and kagda growers for overcoming the constraints.

Scope of the study

The study aimed at knowing the personal and socio-economic characteristics of mogra and kagda growers. The study also attempted to understand the present status of mogra and kagda growers. The results are likely to provide feedback to planners, policy makers and concerned agencies

for further development in floriculture in the Konkan region in general and Palghar district in particular.

Limitations of the study

The study was restricted to limited number of mogra and kagda growers from palghar district. Considering the limitations of time and resources at the disposal of the investigator, the study was confined to limited aspects. The findings of the study, therefore, would be applicable to the areas that are similar in various aspects to that of the area under study.

CHAPTER II

REVIEW OF LITERATURE

The review of literature is an essential aspect which helps the researcher to get acquainted with the subject matter and channelizes her efforts in a desirable direction. The investigator referred the literature available and tried to collect the references pertaining to the topic of the study. The references having direct, indirect or derived application with the subject of the present study have been reviewed and presented in this chapter under the following heads.

2.1 Personal and socio-economic characteristics of the mogra and kagda growers

2.2 Existing cultivation practices of mogra and kagda growers

2.3 Marketing behaviour of mogra and kagda growers

2.4 Association between personal and socio-economic characteristics of mogra and kagda growers and their marketing behavior

2.5 Constraints faced by the mogra and kagda growers in marketing of flowers

2.6 Suggestions of mogra and kagda growers for overcoming the constraints

2.1 Personal and socio-economic characteristics of Mogra and Kagda growers

2.1.1 Age

Chandregowda (1997) conducted a study on ‘Extent of adoption of improved cultivation practices of chrysanthemum’ in the eastern dry zone of Karnataka among chrysanthemum growing farmers and reported that, 59.00 per cent of the chrysanthemum growers belonged to ‘middle’ age group.

Vijayakumar (1997) indicated in his study ‘Adoption of improved cultivation practices among rose growers’, 38.00 per cent of the rose growers belonged to the ‘young’ age group, whereas 45.00 per cent of them belonged to middle age group and only 17.00 per cent of them belonged to ‘old’ age group.

Jadhav (1999) studied the ‘Entrepreneurial behaviour of floriculturist in Thane district of Maharashtra state’. He reported that majority (57.00 per cent) of the floriculturist belonged to ‘middle’ age category. One-fifth (20.00 per cent) of them belonged to ‘young’ age category and nearly one-fifth (23.00per cent) of those belonged to ‘old’ age category. The average age of the floriculturist was 43.72 years.

Palve (2003) conducted a study on ‘Entrepreneurial behaviour of the nursery owners in and around Pune city’. He revealed that 41.67 per cent of the nursery owners were found ‘adult’ (age between 36 to 59 years) while, 33.33 per cent of them were ‘young’ (below 35 years of age). The remaining 25.00 per cent were found in the category of ‘old’ age (60 and above years).

Mayura Bedekar (2007) conducted ‘A study on growers of cut flowers in polyhouse from college development block’ and revealed that majority (57.58 per cent) of the cut flower growers belonged to age group ‘31 to 50’ years, while 21.21 per cent each of them belonged to age group ‘up to 30 years’ and ‘51 years and above’.

Naik (2013) in his study on ‘Marketing behaviour of sapota growers from Thane district of Maharashtra’, revealed that majority (51.67 per cent) of the sapota growers were in ‘old’ age group, while 40.83 per cent were in the ‘middle’ age group and 7.50 per cent of them were in ‘young’ age group. The average age of the sapota growers was 53 years.

Oladejo and Oladiran (2014) in their study on ‘Marketing analysis and consumption pattern of tomato in Oyo state, Nigeria’, revealed that, 54.5 Per cent of the tomato marketers were aged between 31-50 years with mean age of 43.3 years. This implies that they were still active and physically capable of working on their marketing activities Analysis also showed that 45.5 Per cent of tomato consumers were aged between 19-30 years with an average age of 29 years. This implies that majority of those that bought tomato fruits inside the markets are youths.

Anonymous (2015) conducted study on ‘Economics of jasmine flower production and marketing in Palghar district’ and revealed that the average

age of the jasmine growers was 43.76 years having 24 years of experience in farming and having ‘farming’ as a main occupation.

It could be inferred from the above studies that majority of the farmers belonged to ‘middle’ age group.

2.1.2 Education

Vijayakumar (1997) revealed that 22.00 per cent of the rose growers were illiterates. More per cent of them were studied up to ‘high’ school (42.00 per cent), followed by ‘middle’ school (20.00 per cent), ‘pre-university’ college (11.00 per cent), ‘primary school’ (4.00 per cent) and ‘graduation’ (1.00 per cent).

Palaniswamy and Sriram (2000) in their study ‘A scale to measure extension participation of farmers’ revealed that majority of the farmers belonged to ‘medium’ education level (53.06 per cent), while 21.77 and 25.17 per cent belonged to ‘low’ and ‘high’ education levels, respectively.

Vijay Kumar (2001) conducted a study on ‘Entrepreneurial behaviour of floriculture farmers in Hyderabad’ and observed that majority (31.66 per cent) of them had education ‘up to primary school’ level and the ‘illiteracy’ level among the floriculture farmers had been only 11.66 per cent.

Palve (2003) observed that half (50.00 per cent) of the nursery growers were ‘highly’ literate with an education standard of ‘graduation and above’. One-third of them were found ‘fairly’ literate with ‘secondary’ education while, remaining 16.66 per cent found ‘primary’ literate. The most important finding was that none of the nursery growers was illiterate.

Mayura Bedekar (2007) revealed that majority (66.67 per cent) of the cut flower growers had education score between ‘11 to 15’ followed by 27.27 per cent with educational score ‘up to 10’ and 6.06 per cent of those had education score ‘16 and above’.

Joshi (2012) in his study on ‘Marketing behaviour of mango growers’, observed that a maximum number (35.83 per cent) of the mango growers had completed ‘secondary’ education, followed by ‘graduation’ (32.51 per cent). The growers in the category of ‘higher secondary’ were 23.33 per cent,

followed by ‘primary’ (8.33 per cent). The average educational level of the mango growers was 11th standard.

Naik (2013) revealed that, maximum number (31.67 per cent) of the sapota growers had ‘college education’, followed by ‘secondary’ (28.33 per cent), ‘higher secondary’ (23.33 per cent) and ‘primary’ (14.17 per cent) education. Only 2.50 per cent of those were from ‘pre-primary’ category. The average educational level of the sapota growers was 11th standard.

Waghamare (2014) in his study of ‘Existing cultivation practices followed by the turmeric growers in Sindhudurg district’, found that a maximum number (31.00 per cent) of the turmeric growers had completed ‘Secondary education’, followed by ‘Graduation’ (24.00 per cent) and higher secondary education (23.00 per cent). An equal number (10.00 per cent each) of them had ‘pre-primary’ and ‘primary’ level education. Only 2.00 per cent were ‘Illiterate’.

Anonymous (2015) revealed that educational score of jasmine growers was 10.25.

From the above review of literature, it could be inferred that, majority of the farmers had ‘better’ educational level.

2.1.3 Land holding

Vijayakumar (1997) in his study revealed that, 75.00 per cent of the rose growers belonged to ‘small’ farmers category followed by ‘medium’ (23.00 per cent) and ‘big’ (2.00 per cent) farmer’s category.

Kumar and Narayanaswamy (2000) conducted a study on ‘Entrepreneurial behaviour and socio-economic characteristics of farmers who adopted sustainable agriculture in India’ and revealed that majority (96.66 per cent) of the farmers had ‘big’ farm size; only two farmers (3.34 per cent) were ‘small’ farmers.

Palve (2003) in his study revealed that maximum number (28.33 per cent) of the nursery owners were found in the category of ‘medium’ size of land holding i.e. 4.01 to 10.00 ha., while 26.66 per cent of them were found in the category of ‘small’ size of holding i.e. 2.01 to 4.00 ha. Whereas, 23.34 per cent of them were found in the category of ‘large’ size holding i.e. above 10.00

hectares and rest of them (21.66 per cent) had holding of ‘marginal’ size i.e. below 2.00 ha.

Thiranjangowda (2005) conducted a study on ‘Cultivation and marketing pattern of selected cut flowers in Belgaum district’ and Observed that 42.25 per cent of the cut flowers farmers were ‘medium’, followed by ‘semi medium’ (28.12 per cent), ‘small’ (20.31 per cent), ‘big’ farmers 3.07 per cent and ‘marginal’ farmers (6.25 per cent).

Walke (2005) conducted a study on ‘A study on cashew processors in Ratnagiri district’ and revealed that 44.44 per cent of the cashew processors had ‘medium’ land holding, followed by 36.11 per cent with ‘semi-medium’ land holding. While 11.11 per cent had ‘marginal’ land holding; whereas 5.56 per cent and 2.78 per cent had ‘small’ and ‘large’ land holding, respectively.

Mayura Bedekar (2007) revealed that more than three fourth (75.56 per cent) of the cut flower growers had ‘marginal’ land holding, while 12.12 per cent of them had ‘semi-medium’ land holding, whereas. 6.06 per cent each had ‘small’ and ‘medium’ land holding.

Chorge (2009) conducted a study on ‘Marketing behaviour of cashewnut growers in Konkan region’ and stated that more than one half (53.35 per cent) of the cashewnut growers had ‘small’ land holding, while 31.65 per cent of them had ‘semi-medium’ land holding and 15.00 per cent had ‘medium’ land holding. The average size of land holding of the cashewnut growers was 2.85 ha.

Naik (2013) revealed that 30.83 per cent of the sapota growers had ‘small’ land holding, while 30.00 per cent and 16.67 per cent of them had ‘marginal’ and ‘semi medium’ land holding’, respectively. ‘Medium’ and ‘large’ land holdings were owned by 16.67 per cent and 5.83 per cent of them, respectively. The average size of land holding of the sapota growers was 3.86 ha.

Waghamare (2014) revealed from majority (59.00 per cent) of the turmeric growers had ‘marginal’ land holding, followed by 31.00 per cent,7.00 per cent, and 3.00 per cent having ‘small’, ‘semi medium’ and ‘medium’ land

holdings respectively. The average land holding of the turmeric growers was 1.24 ha, indicating ‘small’ land holding.

Anonymous (2015) revealed that average size of land holding of jasmine growers was 0.85 ha.

From the above studies, it could be concluded that, majority of farmers had ‘medium’ sized land holding.

2.1.4 Area under mogra and kagda cultivation

Chandregowda (1997) reported that majority of chrysanthemum growers (71.00 per cent) were ‘small’ farmers where as 17.00 per cent were belonged to ‘big’ and 12.00 per cent of farmers were belonged to ‘marginal’ chrysanthemum growers.

Jadhav (1999) revealed that majority (66.00 per cent) of the floriculturist had ‘medium’ area under floriculture, followed by ‘large’ (18.00 per cent) and ‘small’ (16.00 per cent).

Jadhav (2004) conducted a study on ‘Production and marketing constraints experienced by the cultivars growing crops under protected conditions from Satara district’ and observed that majority (61.40 per cent) of the cultivars had 5.6 R of protected structure.

Mayura Bedekar (2007) revealed that more than one half (57.58 per cent) of the cut flower growers were having an area ‘up to 6 R’ while 9.09 per cent of them had ‘25.39 R and above’ area under polyhouse.

Shinde-desai (2011) conducted a study of ‘Entrepreneurial ability and success-failure of cashewnut processors of Konkan region (India)’ and observed that one half (50.00 per cent) of the micro cashew nut processors had ‘small’ size of cashew orchard. Whereas more than four fifth (86.00 per cent) of the small cashew nut processors had ‘medium’ size of cashew orchard. The average size of cashew orchard of the micro cashew nut processors and small cashew nut processor was 1.73 ha. and 3.31 ha, respectively.

Joshi (2012) revealed that three-fifth (60.00 per cent) of the mango growers had ‘medium’ area under mango; while 26.67 per cent of them had

‘large’ and 13.33 per cent had ‘small’ area under mango. The average area under mango of the mango growers was 5.00 per cent.

Naik (2013) revealed that majority (53.33 per cent) of the sapota growers had ‘small’ area under sapota, followed by ‘medium’ (41.67 per cent), while 5.00 per cent had ‘large’ area under sapota. The average area under sapota of the sapota growers was 3.18 ha.

Waghamare (2014) with regards to area under turmeric owned by the turmeric growers it could be observed that more than half (52.00 per cent) of them were having ‘medium’ area under turmeric cultivation, whereas, 19.00 per cent and 29.00 per cent were having ‘small’ and ‘large’ area under turmeric cultivation, respectively. However the average area under turmeric cultivation owned by the turmeric growers was 0.12 ha, indicating medium area under turmeric crop. The maximum area under turmeric crop were 0.40 ha and minimum area under turmeric crop were 0.05 ha

Anonymous (2015) revealed that 0.18 ha (21.18 per cent) area was under jasmine cultivation.

From the above studies, it could be concluded that, majority of farmers had ‘medium’ sized area of cultivation.

2.1.5 Yield

Pisanu *et al.* (1994) studied ‘*Gerbera jamesoii*cultivation with different inert substrates’ and reported that varieties yielded 235.8 and 154.4 flowers per sq. m., respectively.

Maloupa *et al.* (1999) conducted a study on ‘Quality production of four cut gerbera in hydrophonic system of four substrates’. In their experiment for the yield and quality of the gerbera cultivars Fame, Party, Ragina and Ximena in a heated plastic greenhouse using perlite, zeolite, sand or rockwool as substrate, observed that plants grown on the perlite medium had the highest yield for all varieties, with a yield of 75-80 flowers per plant.

Ambad *et al.* (2001) conducted a study on ‘A new, low-cost polyhouse technique for gerbera’ and in their experiment with six promising varieties Angela, Palermo, Polar, Parijat and panama reported that ‘Polar’ gave 44

flowers per plant per year, followed by ‘Angela’ producing 34 flowers per plant per year and minimum flowers were produced by Parijat about 160.50 flowers per sq. m.

Parab (2004) conducted a study of ‘Economics of production of cut flowers in polyhouse in South Konkan region (Maharashtra)’ and observed that gerbera gave 1,34,400 flowers per 0.62 ha., while orchid gave yield of 4,50,000 from 0.05 ha. Area and yield of carnation was 1, 87,500 flowers per 0.10 ha.

Mayura Bedekar (2007) revealed that majority (48.48 per cent) of the cut flower growers had yield ‘up to 1,93,187’ flowers, while 27.28 per cent had harvested ‘5,26,228 and above’ flowers.

Pawar *et al.* (2007) studied ‘Effect of different flower species and garden size on economic aspects of flower production’ and revealed that kagda produced the yield of 60.70 q/ha, which was significantly higher than the mogra (50.85 q/ha) and the rose (49.40 q/ha). Net profit received from the mogra was Rs. 36564 /ha, which was significantly superior over the rose but it was at par with the mogra. In regard to garden size, results showed that flower production in small garden was 64.90 q/ha followed by 50.90 q/ha in medium garden and 45.40 q/ha in large garden. The net profit received in small garden was Rs. 27841/- per ha that was at par with the profits received in medium and large gardens.

Chorge (2009) revealed that majority (86.25 per cent) of the cashewnut growers were in the ‘medium’ category of cashewnut production, followed by 7.08 per cent in ‘low’ category and 6.67 per cent in ‘high’ category. On an average, the cashewnut growers had the production of 2.33 quintal cashewnuts, which indicates ‘medium’ cashewnut production. It was further noticed that large growers had 3.37 quintals of average production of cashewnut, which was more than average annual production of small and medium cashewnut growers.

Naik (2013) observed that majority (60.83 per cent) of the sapota growers had ‘medium’ yield of sapota, while 19.17 per cent of them had ‘low’

yield and 20.00 per cent of them had ‘high’ yield of sapota. The average yield of sapota of the sapota growers was 478 q.

Waghamare (2014) revealed that majority (61.00 per cent) of the turmeric growers were in the ‘medium’ category of turmeric yield, while 23.00 per cent and 16.00 per cent of them were in ‘high’ and ‘low’ category, respectively. On an average, the turmeric growers had 3.72 qt turmeric powder yield, and the average productivity of turmeric powder was 31 qt/ha. This productivity of turmeric powder was the half of the productivity of the Maharashtra state. The productivity of turmeric powder in Maharashtra state was 60 to 70 qt/ha.

From the above studies, it could be concluded that, majority of farmers had ‘medium’ level of production.

2.1.6 Annual income

Kalbhor (1998) conducted a study of ‘Adoption of recommended practices of tuberose cultivation by the farmers of Pune district’ and observed that majority (40.84 per cent) of the tuberose growers had a annual income of ‘Rs. 75,000 to Rs. 1,50,000’ whereas 33.33 per cent of the tuberose had annual income of ‘Rs. 1,50,000 and above’ and 25.83 per cent of the tuberose growers had ‘low’ annual income of ‘Rs. 75,000 and below’.

Jadhav (1999) observed that majority (85.00 per cent) of the floriculturist had ‘medium’ annual income, while one-tenth (10.00 per cent) of the floriculturist had ‘high’ annual income and only 5.00 per cent of those had ‘low’ annual income. The average income of the floriculturist was Rs. 52,000/-.

Palve (2003) reported that majority (40.00 per cent) of the nursery growers belonged to ‘medium’ annual income group with annual income ranging between 1.5 to 2.5 lakh rupees, followed by 31.66 per cent to ‘large’ income group category with an annual income of 2.5 lakh and above rupees. Remaining 28.34 per cent were found in ‘low’ income group category with an annual income up to 1.5 lakh rupees.

Jadhav (2004) revealed that large proportion (43.86 per cent) of the cultivars growers had their annual income ‘up to Rs. 2 lakhs’, 31.58 per cent had annual income between ‘Rs.2 to 3 lakh’, while 15.04 per cent had annual

income between ‘Rs.3 to 4 lakh’ and equal proportion (5.26 per cent each) had annual income between ‘Rs.4 to 5 lakh’ and above’, respectively.

Mayura Bedekar (2007) revealed that majority (63.64 per cent) cut flower growers had annual income ‘between Rs. 2,74,242/- to 8,11,153/-’, while only 12.12 per cent had annual income ‘Rs. 8,11,154/- and above’.

Naik (2013) revealed that 65.00 per cent of the sapota growers had ‘medium’ annual income, while 24.17 per cent had ‘low’ annual income and 10.83 per cent sapota growers had ‘high’ annual income. The average annual income of the sapota growers was Rs. 5,13,066/-.

Waghamare (2014), revealed that more than two third (68.00 per cent) of the turmeric growers had ‘medium’ annual income, while 19.00 per cent had ‘low’ annual income and 13.00 per cent had ‘high’ annual income. The average annual income of the turmeric growers was Rs 2.23 lakh.

From the above review of literature, it could be inferred that, majority of the farmers had ‘medium’ annual income.

2.1.7 Farming experience

Chandregowda (1997) in his study on chrysanthemum in eastern dry zone of Karnataka reported that, majority of the farmers had low farming experience (48.33 per cent) followed by medium (34.67 per cent) and high (17.00 per cent) farming experience respectively**.**

Vijaykumar and Narayanagowda (1997) in their study in Banglore district reported that majority (61.00 per cent) of the rose growers had ‘low’ level of farming experience.

Patil (1998) concluded that 73.00 per cent of the little gourd growers had ‘medium’ (24 to 40 years) experience in little gourd cultivation, while the remaining 15.00 per cent and 12.00 per cent were having ‘low’ (up to 23 years) and ‘high’ (41 years and above) experience in little gourd cultivation, respectively.

Thiranjangowda (2005) noticed that 40.62 per cent of the cut flower growers belonged to high experience category while, 35.93 and 23.45 per cent belonged to medium and low farming experience category, respectively.

Mayura Bedekar (2007) observed that more than one half (54.55 per cent) of the flower growers had experience of cut flower cultivation in poly house about '2 to 3 years', while slightly less than one-third (30.30 per cent) of the growers had experience of '4 years and above'. Only 15.15 per cent of the growers had experience 'up to 1 year'.

2.1.8 Irrigation status

Korde (2003) in his study entitled 'A study on impact of analysis of kal irrigation project in raigad district of Konkan region' revealed that 50.00 per cent area was unirrigated, 39.00 per cent area was under 'low' irrigation, 10.00 per cent area was under 'medium' irrigation and 1.00 per cent was under 'high' irrigation.

Masdjidin Siregar (2007) in his study 'Peri-urban vegetable farming in Jakarta' found that, since the farmer s are able to water their vegetables by using water from the nearest rivers/streams or wells, then the farms are not much dependent on rainfall or seasons.

Karwande (2009) conducted a study on 'Agriculture in peri urban and remote villages' and revealed that, majority (77.50 per cent) of the farmers had 'no irrigation'. The average irrigation status score of the farmers from remote area and peri-urban area was 4.61 and 5.50 respectively, indicating medium irrigation status.

Rohini Patil (2011) in her study entitled 'Technological change in agriculture in progressive and non-progressive village'found that, majority of the respondents (76.67 per cent) from progressive village had 'medium' irrigation status, while 15.00 per cent and 6.67 per cent respondents had 'low' and 'high' irrigation status, respectively. Only 1.66 per cent of the respondents had 'no irrigation' facilities.

Naykal (2011) conducted a study on 'Constraint analysis of sapota growers from Thane district'and revealed that majority (75.83 per cent) of the sapota growers had 'medium' irrigation status, while 20.00 per cent and 4.17 per cent had 'high' and 'low' irrigation status, respectively. The average irrigation status score of the sapota growers was 19.42, which indicates 'medium' irrigation status.

Bite (2012) conducted a study on ‘Resource sustaining agricultural practices followed in coconut based homestead farming’ and revealed that majority (87.00 per cent) of the coconut growers had ‘medium’ irrigation status, while 10.50 per cent and 2.50 per cent had ‘high’ and ‘low’ irrigation status, respectively.

Mane (2014) in his study entitled ‘Knowledge and adoption of improved sugarcane cultivation practices in Sindhudurg district’ reported that, majority (59.17 per cent) of the sugarcane growers had ‘fair’ irrigation status, followed by ‘good’ (29.16 per cent), while 11.67 per cent had ‘poor’ irrigation status. The average irrigation status of the sugarcane growers was 19.

Radha Jadhav (2015) conducted a study on ‘Agriculture in peri-urban area around Mumbai’ and observed that; majority (64.17 per cent) of the respondents had ‘medium’ irrigation status, while 20.83 per cent and 12.50 per cent respondents had ‘no irrigation’ and ‘high’ irrigation status, respectively. Only 2.50 per cent of the respondents had ‘low’ irrigation facilities.

From the above review of literature, it could be inferred that, majority of the farmers had ‘better’ irrigation status.

2.1.9 Sources of Information

Marimathu and Rathakrishnan (2000) in their study entitled ‘Information source utilization pattern of banana growers’ revealed that television (65.80 per cent) and radio (65.00 per cent) were the major sources among the impersonal cosmopolite. Exhibition (33.33 per cent), wall paintings (27.50 per cent), news papers (27.50 per cent), agricultural meetings (15.00 per cent), demonstrations (12.50 per cent), posters/charts (8.33 per cent) trial plots (7.50 per cent), extension literature (5.00 per cent) and hoardings (0.83 per cent) were the other sources.

Sangita Sonawane *et al.* (2001) in their study on ‘Utilization of communication sources by the farmers for seeking farm information’ observed that among the personal localite sources, majority (96.62 per cent) of the farmers used friends, followed by neighbourers (76.56 per cent) and progressive farmers (60.15 per cent) to seek information on agricultural

technology. With regards to personal cosmopolite sources, most (96.87 per cent) of the farmers chose Agricultural Assistants and among the mass media, they mainly used radio and television to acquire information about agricultural technology.

Bhosale (2003) conducted a study on 'Knowledge and adoption of post harvest technology by the pomegranates growers in sangola tahsil of Solapur district' and observed that more than two-fifth (41.25 per cent) of the pomegranate growers had used 'medium' sources of information, while 36.25 per cent and 22.50 per cent of them were in 'low' and 'high' information sources used category, respectively.

Kulhal (2004) in his study entitled 'Adoption of recommended cultivation practices of guava by the guava growers from haveli tahsil of Pune district' stated that 56.67 per cent of the guava growers were using 'medium' sources of information; whereas 25.00 per cent of them had used 'high' sources of information, while 18.33 per cent of them were using 'low' sources of information.

Ramesh and Santha (2005) in their study of 'Personal and socio-economic characteristics of organic farmers' and revealed that more than half (52.00 per cent) of the farmers had 'medium' level of information source utilization followed by 30.00 per cent with 'high' level and 18.00 per cent had 'low' level of information source utilization.

Kadam (2006) conducted a study on **'**A study on the adoption behaviour of the commercial mango growers with reference to commercial mango production technology' and revealed that more than half (62.70 per cent) of the mango growers were having 'medium' information sources utilization pattern, while 20.72 per cent and 16.58 per cent were having 'high' and 'low' information sources utilization pattern, respectively.

Meena *et al.* (2012) in their study of 'Knowledge level and adoption pattern of rice production technology among farmers', showed that 46.50 per cent of the total farmers were using information source up to 'medium' level. Only 32.00 per cent farmers were under 'low' level of information sources used

and rest 21.50 per cent of them were using information source to a ‘high’ extent.

Yashodhara and Narasimha (2012) in their study on ‘Marketing behaviour of onion growers in chitradurga district of Karnataka’ indicate the Sources of Information for Market Price. Among mass media sources, 43.75 per cent of the onion growers will get information from the television followed by newspaper (26.25 per cent) and radio (1.25 per cent). From interpersonal sources, majority of them (83.75 per cent) will get the market price information from the source like others who visited markets followed by personal visit to the market (2.50 per cent). The probable reason for this might be friendly nature among farmers in the villages. In present situation, almost all the farmers have the access of mobile phone, by that they might be getting information. For medium access of TV and newspaper may be due to medium level mass media participation.

Debashis and Jiban (2013) in their study on ‘Spread of new varieties of hybrid rice and their impact on the overall production and productivity in West Bengal’, reported in their study entitled ‘Spread of new varieties of hybrid rice and their impact on the overall production and productivity in West Bengal’, that 76.25 per cent of the farmers got their information from ‘government through participating training programmes’ and 81.25 per cent got their information from ‘extension workers of the State Department of Agriculture’.

Telange (2015) conducted a study on ‘Extent of adoption and causes of non-adoption of rice varieties developed by DBSKKV, Dapoli’ and observed that maximum number of the farmers (38.51 per cent) had the contact with ‘Agril. Assistants’ (DBSKKV) and ‘Agril. Extension Officers’ (Panchayat Samiti) (38.51 per cent) for the information regarding the improved rice varieties and also rice cultivation followed by ‘Progressive farmers’ (31.85 per cent), ‘Neighbours or friends’ (28.88 per cent) and ‘Agril. Assistants’ (22.22 per cent). The farmers get less information from ‘University staff’ (09.62 per cent), ‘Gram sevak’ (08.88 per cent). ‘Television’ (08.88 per cent), ‘Newspapers’ (08.14 per cent), ‘Agricultural magazines’ (06.66 per cent), ‘Agriculture Officers’ (05.18 per cent), ‘Subject Matter Specialists’ (04.44 per cent), ‘Others’ (02.96 per cent) and ‘Radio’ (0.74 per cent).

From the above review of literature, it could be inferred that, majority of the farmers had ‘better’ sources of information.

2.1.10 Utilization Pattern

Karpagam (2000) conducted ‘A study on knowledge and adoption behaviour of turmeric growers in erode district of Tamil Nadu state’ and observed that, 62.50 per cent of the turmeric growers sold their produce in regulated market, followed by, 32.50 per cent of the produce was sold to commission agents and only 5.00 per cent of the produce was sold to co-operative society.

Angles (2001) in his study ‘Production and export of turmeric in south india- an economic analysis’ reported that, there was an increasing trend in case of wholesale price in all the markets, which was the highest in Duggirala followed by Cochin markets. The price integration showed that almost all markets were highly integrated. The growth in export of turmeric was significant in total quantity, total value and unit value of turmeric, because of the high demand coupled with inflation. The wholesale prices of turmeric were highly integrated in all the markets but fluctuation was higher. The trends in wholesale prices were increasing in all the markets, so for preventing the fluctuations, a nation wide web has to be created. Appropriate export promotion strategies have to be evolved to diversify the geographical concentration. The promotion strategies were essential to maintain the monopoly position in the world.

Lakshmanacharand Velppan (2004) in their study on ‘Marketing of chillies, ginger and turmeric in india’ studied the marketing of chilli, ginger and turmeric in India’. They found that the patterns of marketing system for these crops follow almost the same marketing channels from farmers to wholesalers. The functionaries involved in marketing of these crops were village merchants/itinerant merchants/regulated markets and co-operative marketing societies/commission agents and wholesale merchants. Regulated markets and co-operative marketing societies transact, on the whole a negligible percentage of available marketable surpluses.

Udmale (2004) conducted ‘A study of cultivation practices followed by spice growers in Ratnagiri district’ and revealed that cent percent (100.00 per cent) of the spice growers were using spice production at their home, on an average 0.51 kg of black pepper, 0.26 kg of cinnamon and 0.24 kg of clove besides this they were providing to the relatives, friends, neighbours and sum of them were selling in the market. He further observed that on an average 11.69 kg of black pepper was sold by the spice growers, while nutmeg growers sold nutmeg fruit of average 6.1 kg and nutmeg mace of 0.80 kg. Further it was noticed that on an average 1.08 kg each of cinnamon and clove was sold by them. This means they were selling fairly good amount of spice and spice products.

Mhaske (2013) in his study on ‘Economics of production and disposal of turmeric in Sindhudurg district’ observed that, at the overall level, per farm total production of turmeric was 228.17 kg, out of which quantity retained for seed purpose was 68.00 kg (29.80 per cent) followed by quantity available for disposal was 160.17 kg (70.20 per cent). At the overall level, actual quantity available after turmeric processing was 78.29 kg, of which 2.12 kg (2.71 per cent) of produce was utilized for family consumption; 0.79 kg (1.01 per cent) of produce was given as gift to relatives. It was observed that, at the overall level, 96.28 per cent of processed turmeric was available as marketable surplus for selling in the market. He further revealed the quantity of turmeric retained for family consumption was 2.02 kg (10.79 per cent) in small group, 2.18 kg (3.41 per cent) in medium group and 2.83 kg (0.38 per cent) in large group. Highest share of marketable surplus (99.29 per cent) was observed in large group followed by (94.61 per cent) in medium group and (87.53 per cent) in small group.

Waghamare (2014) observed that majority (90.00 per cent) of the turmeric growers had kept the seed rhizomes at home for cultivation in the next year, while 12.00 and 10.00 per cent growers had given the seed rhizomes to the relatives and retailers for selling respectively and only 9.00 per cent had given the rhizomes to the friends.

From the above review of literature, it could be inferred that, majority of the farmers had ‘good’ utilization pattern.

2.2 Existing cultivation practices of mogra and kagda growers

Mahapatra (1997) in his study on 'Turmeric cultivation farmer's knowledge and adoption' reported that most of farmers of hilly area of Orissa had low adoption of recommended cultivation practices of turmeric.

Patil (1998) conducted a study on 'Extent of adoption regarding improved cultivation practices of onion in Khalav tahsil of Satara' and revealed that all the onion growers had planted the cuttings on nursery bed of varkas land or on bund during second fortnight of June. Majority (81.00 per cent) of them did not apply manures or fertilizers to the cuttings in nursery. Plant protection measures at nursery stage were followed by a few (6.00 per cent) respondents.

Karpagam (2000) found that, majority (70.00 per cent) of turmeric growers had medium level of knowledge about turmeric cultivation practices, followed by high (20.83 per cent) and low (9.17 per cent).

Salame (2000) conducted a study on 'Constraints in adoption of chilli cultivation practices by farmers' and noted that majority (61.67 per cent) of the chilli growers had medium level of knowledge of chilli cultivation practices and there is positive and significant relationship of knowledge and adoption of chilli growers.

Wase (2001) conducted a study on 'Knowledge and adoption of farmers about jayanti chilli cultivation' and indicated that majority of farmers (61.67 per cent) were having medium level of knowledge of Jayanti chilli variety, while 20 per cent having high level of knowledge.

Gaikwad (2005) conducted a study on 'Knowledge and adoption of recommended cultivation practices by onion growers' and noted that majority of the farmers (80.67 per cent) belonged to medium category of knowledge. Only 10.66 per cent of the farmers were included in high knowledge level and 8.67 per cent were in low knowledge category.

Karpagam (2006) revealed that 65.83 per cent of the turmeric cultivators belonged to medium adoption category with mean adoption score of 69.13.

Raj (2009) in his study on ‘Vegetables cultivation grower’s knowledge and their adoption of management practices’ noted that majority of the farmers had poor adoption of good variety, soil, seed and seedling treatment, fertilizer management, use of micronutrient, plant protection measures and post-harvest operations of turmeric.

Madhu (2010) conducted a study on ‘Technological gap in turmeric production practices in Belgaum district’ and revealed that cent per cent of the turmeric growers had correct knowledge about recommended varieties, sowing time, time of application FYM, intercrops and turmeric polishing.

Waghmare (2014) revealed that all (100.00 per cent) turmeric growers followed ploughing and harrowing for preparation of land for turmeric cultivation. In all 88.00 per cent of the turmeric growers applied FYM to the field. While 10.00 per cent of them applied goat manure, 6.00 per cent applied poultry manure and only 3.00 per cent of them applied green manure to the field.

From the above review of literature, it could be inferred that, majority of the farmers had ‘better’ cultivation practices.

2.3 Marketing behaviour of mogra and kagda growers

Sadaphal (2000) in his study on ‘Existing cultivation practices of white onion in Raigad district’, observed that nearly all (99.00 per cent) white onion growers had stored white onion ‘in the house itself’. Majority (82.00 per cent) of them had sold their produce in their ‘own villages’ to the wholesaler. Majority (87.00 per cent) had transported their produce by ‘bullock cart’ to marketing place.

Santucci (2001) analysed the ‘Marketing behaviour of organic farmers in Italy’ and revealed that most farmers had entered into organic farming recently and land productivity was quite low. They lacked proper marketing behaviour and wholesalers represented their most important marketing channel. Most of them about 45.00 per cent sold locally, without any support or advice. Their most important form of promotion was the presence at the local annual fair and at the weekly local market. More than 50.00 per cent even ignored the existence of the National Organic Fair, organized since

1989; almost 74.00 per cent of respondents remained to find new marketing channels.

Patil (2001) conducted ‘Study of market intelligence and market information system in dharmabad market with special reference to marketing of chilli’ and observed that ‘producer-commission agents-wholesaler- retailer-consumer’ was the most popular marketing channel in Dharmabad market as most of the farmers (80.00 per cent) sold their chillies through that channel. He inferred that personal informal sources like visit to market, progressive farmers and neighbourers played major role as the sources of market information. This was followed by mass media like telephone (agent) and radio. Personal formal sources such as Secretary, Co-operative Society (6.89 per cent) and Agricultural Produce Market Committee (APMC) personnel (2.30 per cent) were the least used sources of market information.

Basu (2002) examined the ‘Efficiency of the potato market in West Bengal’, incorporating the factors namely, non-institutional credit, inter linked credit, distress sale, nature of buying agency, time of scale and cold storage facilities.

Pawar (2002) conducted ‘A study of knowledge and adoption of post harvest technology and market information of tomato growers’ and observed that majority of the tomato growers had ‘medium’ knowledge (68.00 per cent) and ‘medium’ adoption (63.33 per cent) of post-harvest technology and market information of tomato crop. He further reported that majority of the tomato growers were completely or partially following the picking practices, grading on the basis of colour and luster and packaging in wooden boxes with belt packing and were using information pertaining to marketing cost and market rules.

Nirban (2004) conducted a study on ‘Analysis of the agricultural produce market committees in Konkan and Western Maharashtra with reference to their potential role in agricultural marketing extension’ and observed that three fifth (61.00 per cent) each of the farmers from the Konkan region and western Maharashtra had ‘medium’ marketing behaviour. Less than two fifth (39.00 per cent) of the farmers from the Konkan region had ‘low’

marketing behaviour, while 35.00 per cent of the farmers from the western Maharashtra had 'high' marketing behaviour. Average marketing behaviour score of the farmers from the Konkan region and western Maharashtra was 39.97 and 68.84, respectively.

Chorge (2009) revealed that majority of the small (63.37 per cent); medium (72.94 per cent) and large (73.33 per cent) cashew nut growers had medium marketing behaviour. At overall level, 71.42 per cent cashew nut growers were found in 'medium' category of marketing behaviour. The mean score indicate that the large cashew nut growers had better marketing behaviour (76.01) followed by medium (73.01) and small (71.57) category.

Patil *et al.* (2010)[a] studied 'Resource use efficiency and constraints faced by the cultivators in flower production of coastal areas' and pointed out that major quantity of the flowers sold by the farmers through the wholesaler, because it was the most convenient way of selling of the flowers. Marketing charges consisted packing, commission, transport, hamali and postage. The commission was charged at the rate of 15 per cent in the Dadar and Bhulashawar market. Per hectare cost of marketing was Rs. 63849.79, Rs. 55037.14 and Rs. 28570.14 in case of Kagda, Mogra and spider lilly, respectively.

Joshi (2012) observed from that association between education of respondent and their marketing behaviour was positive and highly significant, annual income of mango growers was positively and significantly related with their marketing behaviour at 0.05 level. The findings lead to conclude that annual income was a crucial factor in determining the marketing behaviour of the mango growers. Big size of orchard might have helped the mango growers to go for commercial cultivation. As they might have taken this enterprise on commercial scale, they might have taken due care for marketing the mango fruits. This might have reflected in their marketing behaviour. The association between yield of mango and marketing behaviour was statistically significant. It means that marketing behaviour was dependent upon yield of the mango.

Yashodhara and Narasimha (2012) pointed that, the 51.25 per cent of onion growers sell their produce of onion one month after harvest and 48.75

per cent of onion growers sell onion immediately after harvest. Majority (53.75 per cent) of the onion growers marketed to commission agent's follwed by traders (21.25 per cent), wholesaler (16.25 per cent) and village level traders (8.75 per cent). Majority (85.00 per cent) marketed at Bangalore APMC followed by village itself (12.50 per cent) and terminal markets (2.50 per cent).

Naik (2013) observed that majority (70.84 per cent) of the sapota growers had 'medium' marketing behaviour, followed by 18.33 per cent and 10.83 per cent of the sapota growers had 'high' and 'low' marketing behaviour, respectively. The average marketing behaviour score of the respondents was 57.

Oladejo and Oladiran (2014) indicated that on weekly basis, 92.9 per cent of the marketers sold less than 5 baskets of oblong type while 45.5 per cent of them sold 6 - 10 baskets of round type. On the average 3.6 baskets of oblong tomatoes were sold per week per respondent while 14.3 baskets of the round type were sold.

2.4 Association between personal and socio-economic characteristics of mogra and kagda growers with their marketing behaviour

Nirban (2004) found that in case of Konkan farmers, the characteristics namely, age, education, land holding, annual income, social participation, extension contact, mass media exposure and contacts with APMCs had significant relationship with marketing behaviour.

Chorge (2009) observed that in case of the 'small' cashew nut growers, four characteristics namely; major occupation, cashew nut production, annual income and economic motivation had highly significant relationship with their marketing behaviour. The step down analysis revealed that variables namely, age and cashew production contributed significantly and explained 31.10 per cent variation in the marketing behaviour of the small farmers.

Lapbim *et al.* (2009) conducted a study on 'Factors that influence the adoption of coco IPM by farmers fields school in cameroon' and revealed that the factor that positively influenced farmer's decision to apply the IPM technological packages was the level of education, family size, membership to a farmer organization and previous knowledge of improved spraying

practices. Factors found to negatively affect the application of IPM technological package was the size of the coco farm.

Dhiraj Kumar Singh *et al.* (2010) conducted their study on 'Adoption behaviour of commercial vegetable growers in district Ghaziabad (Uttar Pradesh)' the Correlation of adoption behaviour with socio-personal economic, psychological and communication characteristics of vegetable growers was studied using multiple correlation co-efficient The results revealed that the adoption of commercial cabbage cultivation technology was found to be positively and significantly correlated with their education, knowledge about improved vegetable cultivation practices and attitude towards vegetable growing at one per cent level of significance. Land holding and annual incomes from vegetables were found to have positive and significant correlation at five percent level of significance. The variable age was found to have negative and significant correlation with adoption at one percent level of significance. However, the rest of the variables, namely, caste, family size, occupation, social participation, risk orientation, extension contact and mass-media exposure of the vegetable growers were found to be positive but non-significantly correlated with the adoption of vegetable cultivation technology. Education was found highly significantly correlated with adoption of vegetable growers ($r = 0.739$, $p > .01$). This means that more educated vegetable growers had greater adoption of cabbage cultivation technology. Similar is the case in knowledge of vegetable production technology ($r = 0.725$, $p > .01$) and attitude towards vegetable farming ($r = 0.485$, $p > 0.01$) as these also had positive correlation with adoption. It implies that vegetable growers having more land holding adopted more recommended package of practices for cabbage as compared to those having less land holding.

Wankhade *et al.* (2013) in their study of 'Entrepreneurial behaviour of vegetable growers' observed that all the entrepreneurial attributes were positively and significantly related with their entrepreneurial behaviour. This means these attributes/dimensions exert their influence on entrepreneurial behavior in order of innovativeness, manageability, self-confidence, hope of

success, achievement motivation, knowledgeability, risk taking, feedback usage, persistence and persusability.

2.5 Constrains faced by the mogra and kagda growers in marketing of flowers

Vijayakumar (1997) observed that, the problems faced by rose growers of Bangalore district were lack of storage facilities, inadequate local markets and exploitation by whole salers.

Lakshmi *et al.* (2000) from their study on 'Problem of regulated agricultural marketing in Andhra Pradesh' pointed out that total absence of scientific grading facilities, poor market information network, lack of adequate amenities and facilities are the major problems faced by farmers in marketing of vegetables.

Mane (2004) conducted a study on 'Economics of production of cut flowers under polyhouse in Sangli district (Maharashtra)' and observed that, the constraints in production and marketing were non-availability of technical guidance regarding cultivation and management practices in time, the price paid by the commission agent and wholesaler were not in accordance with the grades of flowers. High commission charges and absence of organised market in locality were also the major constraints.

Sunil Kumar (2004) in his study on 'Farmers knowledge and adoption of production and post-harvest technology in tomato crops of belgaum district in Karnataka' reported that majority of the farmers (75.83 per cent) faced the problem of lack of technical knowledge and guidance about improved cultivation practices as well as post-harvest technology. Whereas, 65.00 per cent of them faced the problem of high fluctuation in market price, followed by transportation cost (62.53 per cent), labour shortage and high wages (55.83 per cent) and lack of irrigation facilities and power shortage (46.66 per cent).

Tarde *et al.* (2005) conducted a study on 'Problems faced by the flowers grower in Pune district' and revealed that nearly three-fifth (59.77 per cent) of the flower growers motivated by literature and modern mass media Fluctuation in market (82.75 per cent), lack of knowledge about recommended doses and time of application (78.16 per cent), non-availability of proper

storage facilities (75.86 per cent), non-availability of manures (74.17 per cent) and lack of knowledge about post harvest technology (71.26 per cent) were the major problems faced by the flower growers.

Thiranjangowda (2005) revealed that high investment in poly house (75.00 per cent), problems of pests and diseases (65.00 per cent), high cost of fertilizers (45.00 per cent) and high cost of plant protection chemicals (17.50 per cent), are the main constraints regarding gerbera flower cultivation.

Walke (2005) pointed out the constraints of cashewnut processors namely, non-availability of nearest market (22.88 per cent), no reasonable price for produce (9.68 per cent) and 'insufficient knowledge regarding grading and packing' (9.68 per cent).

Bagade (2006) conducted a study on 'Economics of production and marketing of cut flowers under polyhouse condition in Ratnagiri district' and revealed that production constraints were timely non-availability of loan, lengthy procedure for loan availability, non-availability of skilled labourers, high cost of planting material, high cost of packaging material and absence of organised market.

Mahadik *et al.* (2008) conducted a study on 'Problems perceived in marketing of flowers in Mumbai flower market' and revealed that non-remunerative prices (38.33 per cent), high rate of marketing charges (36.67 per cent) and monopoly of the intermediaries in Mumbai flower (50.00 per cent) were the major constraints faced by the producer. The problems like heavy loss due to perishability of flowers (50.00 per cent) and shortage of space in market yards for loading and unloading platform (50.00 per cent) were perceived by the wholesaler cum commission agent, while space for loading and unloading (20.00 per cent). Loss due to perishability of flowers (20.00 per cent) and wide price fluctuation in the wholesale markets (60.00 per cent) were the constraints faced by the retailer.

Patil *et al.* (2010)[b] pointed out that incidence of pests and diseases was the major problem in study area faced by 90.32 per cent, 100.00 per cent and 84.44 per cent growers in Kagda, Mogra and Spider lilly flowers. Insecticides were costly opined by 74.75 per cent of flower growers at overall level.

Wankhande (2013) revealed that, hundred per cent vegetable growers expressed the major constraints such as price fluctuation in the market and no provision of insurance/risk coverage to the vegetable crops. The major constraints expressed by vegetable growers were: exploitation by middleman (85.00 per cent), non-availability of labour at the time of harvesting of vegetable crops (77.00 per cent), high input cost (71.00 per cent) and inadequate extension services (67.00 per cent) insufficient electricity (63.00 per cent), reducing water table (53.00 per cent) and non-availability of quality planting (seedling) material (50.00 per cent). In addition to this, other constraints were lack of technical knowledge (43 per cent), lack of vegetable grower's cooperatives (41.00 per cent), insufficient and untimely credit facility (37.00 per cent), lack of transport facility (33.00 per cent) and lack of cold storage and processing facility (30.00 per cent).

2.6 Suggestions offered by mogra and kagda growers to overcome marketing problem

Palve (2003) recorded suggestions of nursery growers like provision of loan at cheaper interest rate on long term basis, provision of export avenues along with incentives, special nursery enterprise policy to create the special needs of nursery enterprise, special shops to boost nursery entrepreneurship and door-step delivery of modern technology to improve market competitiveness in globalized market area.

Selvraj (2004) conducted a study on 'Role of socio-economic character of flower growers in flower cultivation in Erode district of Tamil Nadu' and reported the suggestions as, modern food processing technologies be adopted, freight subsidy on the transport of fruits for distances beyond 400 Kms, supply of working capital to the processing industry at lower costs, concessions for packaging material and indirect tax burdens be lightened.

Santoshkumar (2008) conducted a study on 'Marketing behaviour, information source consultancy pattern and problems of vegetable growers in bijapur district of Karnataka', indicated majority of the vegetables growers (97.50 per cent) suggested for providing access to market information, 88.75 per cent suggested for fixing minimum price for the produce whereas 87.00

per cent suggested to display the prices at each market place, followed by fixing minimum labour charges (78.75 per cent), providing concession in transportation charges (72.50 per cent), providing lodging and boarding facilities at market places (70.00 per cent), procurement at nearby places (52.50 per cent) and establishing separate markets for their major produce (35.00 per cent) were the suggestions offered by vegetable growers for marketing their produce in a better way.

Oladejo and Oladiran (2014) showed the challenges militating against tomato marketers and consumers in the study area. From the table, 78.8 per cent and 31.4 per cent respectively of tomato marketers and consumers indicated that the major challenge being encountered was rapid deterioration in tomato quality. Due to the perishable nature of tomato, several losses are from different sources. Some (9.1 per cent) of the marketers submitted that they are faced with challenge of finance. The same percentage (9.1 per cent) encountered problem of injury to tomato during transportation. In addition, 6.1 per cent of the marketers complained of inadequate profit in the business. The table also indicated that 6.1 per cent of marketers compared with 20 per cent of consumers complained that tomato fruits are expensive. Few (3.0 per cent) of the marketers lamented low patronage. The most common challenge indicated by tomato consumers (60 per cent) was unstable market price. Other challenges identified with consumers include off-season tomato scarcity and long distance to market places.

Mahadik *et al.* (2008) revealed that suggestions to overcome the problems were to establish the regulated flower market in suburban area, co-operative flower marketing organization at village level, adequate transport facilities, separate market for retail sale by producers directly to consumer, control on price fluctuation, increase export from flower trade, sufficient cold storage facilities, oraganisation and guidance to producer in respect of production and marketing of flower.

CHAPTER III

METHODOLOGY

This chapter deals about the methods followed in conducting the present research work and mentioned in following sub-heads.

3.1 Locale of the study

3.2 Research design

3.3 Sampling procedure

3.4 Variables under study and their empirical measurement

3.5 Tools and techniques of data collection

3.6 Statistical analysis

3.1.1 Locale of the study

The present study was conducted in the Palghar district of Maharashtra during the year 2015-16. Palghar district was purposively selected based on the criteria of maximum production of Mogra and Kagda.

3.1.1.1 Area and Location

It is on north-West side of Thane. The area of Palghar Municipal Council is 22.11sq.km. The boundary of the Municipal Council is as per notification issued by Government dated 17th September, 1998. It is also compared with ward boundaries of the Municipal Councils. The boundary of the Coastal Regulation Zone Map is considered as per maps prepared by Maharashtra Remote Sensing Application Centre Nagpur. (MRSAC)

3.1.1.2 Brief Description of the study area

Palghar was one of the tahsil in thane district of konkan region in Maharashtra state. On 1 August 2014, the Maharashtra State government announced the formation of palghar, the 36th district of Maharashtra. Abhijit S. Bangar was the first Collector of the district.

The district is the northernmost part of the Konkan lowlands of Maharashtra. It comprises the wide amphitheatre like Ulhas basin on the south and hilly Vaitarna valley on the north together with plateaus and the slopes of Sahyadri. From the steep slopes of the Sahyadri in the east, the land falls through a succession of plateaus in the north and centre of the

district to the Ulhas valley in the south. Arnala Island is located in Vasai taluka, at the entrance to the Vaitarna estuary. Palghar is situated at longitude 72^0 45' East and latitude 19^0 41' North. Palghar has India's first atomic power plant located at Tarapur. The industrial town of Boisar is also home to one of Maharashtra's largest industrial areas at Tarapur Maharashtra Industrial Development Corporation. Dahanu and Palghar are the best known for their chickoo production as well as mogra and kagda production in the whole of India.

3.1.2 Boundaries

The district is bounded by Thane and Nasik district on the east and northeast and by Valsad district of Gujarat state and Union territory of Dadra and Nagar Haveli on the north. The Arabian Sea forms the western boundary, while Vasai-virar is part of Mumbai Metropolitan region.

3.1.3 Topography

On the basis of topography, North Konkan region is divided in to three parts such as eastern portion, central and western portion.

The eastern portion having Sahyadri ranges which comprises mainly forest area. The central region covering mainly paddy area, Western part of coastal area and adjoining area of a coastal region, where horticulture plantation, fodder production and vegetable production is being practiced.

3.1.4 Soils

The soils of palghar district are conveniently divided in to three categories namely,

- Black soil containing sand (Vertisols): This soil is observed in Dahanu, Talasari, Vasai and Palghartahsils. These soils are fertile and suitable for paddy, vegetable, flowers and fruits cultivation.
- Red soil (Lentisols): It is found in eastern region mostly on slopes of Jawhar, Mokhada and Talasaritahsils. In these soils, Nagli and Vari are cultivated.

- Brownish red soils: This type of soils mostly observed in the patches of valley laying between the coastal plain and hilly slopes of Vada, Vikramgad and Vasai-virar, which for paddy and watermelon cultivation.

The average annual rainfall is about 1873 mm. The highest rainfall occurs in the month of July. The rainfall is not evenly distributed in a period of a year.

The average minimum and maximum temperature at Palghar ranges from 10.5^0 C and 38^0 C respectively. The minimum temperature 22^0 C is recorded in the month of February.

The humidity of Palghar occasionally falls below 50 per cent. During the monsoon season the sky is heavily clouded. In the months of May and October the clouds are moderate.

3.2 Research Design

The Ex-post facto research design was employed in the present study. This design was considered appropriate because the phenomenon is being studied after it has already occurred. It is a systemic empirical study in which the researcher does not have any direct control over the independent variables because their manifestation has already occurred.

3.3 Sampling procedure

Sampling is the method of selecting a fraction of the population in such a way that the selected sample represents the population. For selection of sample for the study, three stage sampling method, namely, selection of tahsils, selection of villages and selection of respondents was followed.

3.3.1 Selection of tahsils

The district consists of eight talukas namely Palghar, Vada, Vikramgad, Jawhar, Mokhada, Dahanu, Talasari and Vasai-Virar. On the basis of maximum area and production of mogra and kagda two tahsils namely Palghar and Vasai-virar were selected purposively.

3.3.2 Selection of Villages

From Palghar taluka four villages namely Ranpatti, Bangalipada, Ranpada and Gaonpada and from Vasai-virartaluka four villages namely

Arnala, Mukkampada, Galyachapada and Kalyachapada were selected, purposively on the basis of maximum area under mogra and kagda. (Appendix I)

3.3.3 Selection of Respondents

List of the mogra and kagda growers having higher producers surplus were obtained from Taluka Agriculture Officer and from the list of each village, 15 mogra and kagda growing farmers were randomly selected. Thus, 120 respondents constitute sample for the study. (Appendix II)

3.4 Variables under study and their empirical measurement

3.4.1 Dependent Variable under study

3.4.1.1 Marketing behaviour

'Marketing behaviour of mogra and kagda growers' was the dependent variable for the study. A scale followed by Santoshkumar (2008) was used to measure the marketing behaviour of mogra and kagda growers with slight modification. The responses were obtained on a five-marketing aspects namely 1.Reasons for selling at a particular period/time 2.Whom do you sale the produce 3.Reasons to sell to a particular agency 4.Where do you sell the produce 5.Reasons for selling at a particular place. Total score for all the items gave marketing behaviour score of an individual. Based on the total score obtained by the respondents, following categories of marketing behaviour were made by using the formula mean (28.68) ± standard deviation (5.20). The scale and their measurement are given in Annexure III.

Sl. No.	Category	Marketing Behaviour (Score)
1	Low	up to 23.47
2	Medium	23.48 to 33.88
3	High	33.89& above

3.4.2 Independent variables under study

3.4.2.1 Age

It refers to the chronological age of the respondents at the time of investigation. The age of the respondents was recorded as mentioned by the

respondents in completed years and were categorized in three categories as follows based on the mean (57) ± standard deviation (13).

Sl. No.	Category	Age (years)
1	Low	Up to 43
2	Medium	44 to 70
3	High	71 and above

3.4.2.2 Education

It is assumed that the formal education increases the potentiality to change an individual. With this view, the information regarding formal education successfully completed by the mogra and kagda growers was taken into consideration. For measuring this variable, one score was assigned to each year of formal schooling completed by the respondents. Further, the respondents were classified into six categories as below.

Sl. No.	Category	Education (Std)
1	Illiterate	No Education
2	Pre-Primary	up to 4^{th}
3	Primary	5^{th} to 7^{th}
4	Secondary	8^{th} to 10^{th}
5	Higher Secondary	11^{th} to 12^{th}
6	Graduate	13^{th} and above

3.4.2.3 Land Holding

The total land owned by the respondent was taken into consideration. On the basis of total land holding with the respondents, they were grouped into four categories as per the norms laid by the Government of Maharashtra.

Sl. No.	Category	Land holding (ha)
1	Marginal	Up to 1.00
2	Small	1.01 to 2.00
3	Semi-Medium	2.01 to 4.00
4	Medium	4.01 to 10.00
5	Large	10.01 and above

3.4.2.4 Area under cultivation

It refers to the actual area under mogra and kagda owned by the growers. The respondents were grouped into three categories as below based on mean (0.2976) ± standard deviation (0.2754).

Sl. No.	Category	Area (ha)
1	Low	Up to 0.01
2	Medium	0.02 to 0.57
3	High	0.58 & above

3.4.2.5 Yield of mogra and kagda

It referred to the total quantity of mogra and kagda produced by the mogra and kagda grower in a year from his/her own orchard and expressed in quintals. Finally, they were categorized into three groups on the basis of mean (2.263) ± standard deviation (2.142).

Sl. No.	Category	Yield (q/ha)
1.	Low	Up to 0.11
2.	Medium	0.12 to 4.40
3.	High	4.41& above

3.4.2.6 Annual Income

Information regarding annual income from all the sources and from all the members of the family was taken into consideration. Accordingly, the respondents were grouped into three categories on the basis of the mean (259732) and ± standard deviation (161337).

Sl. No	Category	Annual income (Rs.)
1	Low	Up to Rs. 98,394/-
2	Medium	Rs.98,395/- to Rs. 4,21,069/-
3	High	Rs.4,21,070 and above

3.4.2.7 Farming experience

The number of years actually spent by an individual in mogra and kagda cultivation was considered. The experiences of the respondent decide

his/her efficiency and influence his/her knowledge of recommended crop production technologies. The respondents were categorized into three groups on the basis of mean (26) ± and standard deviation (13).

Sl. No.	Category	Experience (years)
1	Low	Up to 12
2	Medium	13 to 39
3	High	40 and above

3.4.2.8 Irrigation Status

The irrigation status of the respondents was measured by procedure followed by Nirban (2004). Three parameters namely, Sources of irrigation, availability of water lifting devices and irrigation methods followed were considered for the purpose. Accordingly, one score is given for each ten per cent irrigation utilization and part thereof. With regard to water lifting device, one score for each Horse power of the electric motor/diesel pump, etc. For methods of irrigation i.e. Surface irrigation, Sprinkler and Drip irrigation, one, two and three score was given respectively.

The sum total of all the three components indicates the irrigation status of the respondents. The irrigation status of the respondents grouped into following categories by using the formula mean (23.34) ± standard deviation (4.11).

Sl. No.	Category	Irrigation status (score)
1	Poor	Up to 19.22
2	Fair	19.23 to 27.45
3	Good	27.46 and above

3.4.2.9 Sources of Information

The Sources of Information was measured by the procedure followed by Telange (2015). It refers to the various media from which the respondents get information about mogra and kagda cultivation. There are the different sources where respondent get the information. Each source has given the one score. From this the total score obtained by each respondent was

calculated. The sources of information of the respondents grouped into following categories by using the formula mean (3.32) ± standard deviation (2.14).

Sl. No.	Category	Sources of information (score)
1	Low	Up to 1.17
2	Medium	1.18 to 5.46
3	High	5.47 and above

3.4.2.10 Utilization Pattern

This variable was measured as per the procedure followed by Waghamare (2014). There are the different sources where respondent can sale their product such as at home, neighbours, friends and relatives. Each source was given one score. The utilization pattern of the respondents grouped into following categories by using the formula mean (1.89) ± standard deviation (1.66).

Sl. No.	Category	Utilization pattern (score)
1	Low	Up to 0.22
2	Medium	0.23 to 3.55
3	High	3.56 and above

3.4.3 Existing Cultivation practices of Mogra and Kagda growers

One of the objectives of the present investigation was to know the existing cultivation practices followed by selected mogra and kagda growers from Palghar district. It was studied in the context of land preparation, Interculture operation, time of planting, planting material used, spacing, intercrops, varieties preffered, fertilizer application, pests and diseases and their control measures, harvesting and pruning.

The details on these parameters were presented in frequencies and percentages.

3.5 Tools and techniques of data collection

The methods used and procedure followed for collecting the data are described in this part.

3.5.1 Construction of Interview schedule

The interview schedule was prepared in Marathi language in such a way as to help collection of information in line with the objectives of the study. 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. The schedule was developed into two parts. The questions about personal and socio-economic profile were included in first part, whereas marketing behaviour in second part. (Appendix IV)

3.5.2 Pre-testing

The interview schedule was prepared by interviewing the mogra and kagda growers from the villages outside the study area. The schedule was administered to 10 growers of mogra and kagda flowers. This was considered necessary, so that the interview schedule would hold well while interviewing the sampled respondents. After pre-testing, necessary modifications were made in the interview schedule before administering it directly to the respondents selected for the study.

3.6 Statistical analysis

The statistical tools and tests such as frequency, percentages, mean and standard deviations and correlation coefficient were used wherever found appropriate and data was analysed systematically to draw valid inferences.

Frequency and percentage

Some of the data were subjected to frequencies and percentage and used to know the distribution of the respondents according to selected variables.

Arithmetic mean (X)

It is defined as the sum of all values of the observations divided by the total number of observation (n); symbolically it is represented as;

$$X=\frac{\Sigma x}{n}$$

Where,

X: Arithmetic mean

Σx: Sum of the item

n: Total number of item

Standard deviation (σ)

It is positive square root of the mean of the sum of square of the deviation taken from the mean of the distribution (Guilford, 1956).

$$S.D.=\sqrt{\frac{\sum\left(X-\overline{X}\right)^2}{N}}$$

Where,

S.D = Standard deviation

X = Score of each respondent

$\overline{X}$ = Mean

N = Number of respondents.

Correlation analysis

The coefficient of correlation measures the degree of correlation existing between two variables. A good measure of coefficient of correlation is one, which supplies the answer in pure number, independent of the units of which the variables have been expressed and also indicates the direction of correlation. Pearson's correlation coefficient (r) was worked out for assessing the degree of association between the independent variables and marketing behaviour of the mogra and kagda growers.

$$rxy = \frac{\sum xy - 1/n\sum X - \sum Y}{\sqrt{\frac{\sum X^2 - (\sum X)^2}{n}}\sqrt{\frac{\sum Y^2 - (\sum X)^2}{n}}}$$

Where,

n = Number of Farmers

rxy = Correlation coefficient between X and Y

CHAPTER IV

RESULTS AND DISCUSSION

The data collected by adopting the procedures presented earlier in Methodology chapter were subjected to statistical analysis in accordance with the objectives of the study. The results so obtained from analysis of the data have been presented in this chapter under the following sub-heads.

4.1 Personal and socio-economic characteristics of mogra and kagda growers

4.2 Existing cultivation practices of mogra and kagda growers

4.3 Marketing behaviour of mogra and kagda growers

4.4 Association between personal and socioeconomic characteristics of mogra and kagda growers and their marketing behaviour

4.5 Constraints faced by mogra and kagda growers in marketing of flowers

4.6 Suggestions of mogra and kagda growers for overcoming the constraints

4.1 Personal and socio-economic characteristics of mogra and kagda growers

The details with regard to selected personal and socio-economic characterstics of mogra and kagda growers are given and interpreted below.

4.1.1 Age

Information regarding age of the mogra and kagdagrowers is presented in Table 1 and Figure 2.

Table 1. Distribution of the respondents according to their age

Sl. No.	Age (years)	Respondents (N=120)	
		Frequency	Percentage
1.	Young (up to 43)	19	15.83
2.	Middle (44 to 70)	83	69.17
3.	Old (71 and above)	18	15.00

Mean:57 years Total	**120**	**100.00**

It is seen from Table 1, that majority (69.17 per cent) of the mogra and kagda growers belonged to age group of '44 to 70 years', while 15.83 per cent belonged to age group 'up to 43 years' and 15.00 per cent of them were in '71 years and above'. The average age of the mogra and kagda growers was 57 years.

The result indicated that most of the mogra and kagda growers were of middle age. The farmers of middle age are more stable and tend to have more family responsibility than young and older ones. As they are main earners for their family, most of them are found to be in middle age group category.

The results of the present study are more similar to Chandregowda (1997), Vijaykumar (1997), Jadhav (1999), Palve (2003), Mayura Bedekar (2007), Oladejo, and Oladiran (2014), Bagheri A. and Shabanalifami H. (2016).

4.1.2 Education

The information pertaining to the formal education of the mogra and kagdagrowers is presented in Table 2 and Figure 3.

Table 2. Distribution of the respondents according to their education

Sl. No.	Education (Std.)	Respondents (N=120)	
		Frequency	Percentage
1	Illiterate (No education)	6	5.00
2	Pre Primary (up to 4th)	11	9.17
3	Primary (5^{th} to 7th)	24	20.00
4	Secondary (8th to 10th)	36	30.00
5	Higher Secondary (11th to 12th)	23	19.16
6	Graduation (13th & above)	20	16.67
Mean:9^{th} standard Total		**120**	**100.00**

It is found from Table 2 that, a maximum number (30.00 per cent) of the mogra and kagda growers had 'secondary' education, followed by

'primary' (20.00 per cent). The respondents in the category of 'higher secondary' were 19.16 per cent, followed by 'graduation' (16.67 per cent). Only 9.17 per had 'pre-primary' education, while 5.00 per cent of them were 'illiterate'. The average educational level of the mogra and kagda growers was 9^{th} standard.

This shows that all the growers of mogra and kagda flowers were sufficiently educated and most of them were educated up to higher secondary and graduation level. This in turn might have influenced their marketing behaviour.

These findings are similar with the findings of Vijaykumar (1997), Joshi (2012), Waghamare (2014), Bagheri A. and ShabanaliFami H. (2016) and dissimilar with that of Vijaykumar (2001), Palve (2003), Mayura Bedekar (2007), Oladejo, and Oladiran (2014).

4.1.3 Land Holding

The observations regarding the land holding of the mogra and kagda growers are given in Table 3 and Figure 4.

Table 3. Distribution of the respondents according to their land holding

Sl. No.	Category (ha)	Respondents (N=120)	
		Frequency	Percentage
1	Marginal (Up to 1.00)	31	25.83
2	Small (1.01 to 2.00)	52	43.33
3	Semi-medium (2.01 to 4.00)	21	17.50
4	Medium (4.01 to 10.00)	10	8.34
5	Large (10.01 & above)	6	5.00
Mean: 2.73 ha	**Total**	**120**	**100.00**

It is revealed from Table 3, that maximum number (43.33 per cent) of the mogra and kagda growers had 'small' land holding, while 25.83 per cent of them had 'marginal' land holding, whereas, 17.50 per cent had 'semi-medium', while 8.34 per cent had 'medium' land holding. Only 5.00 per cent of them had 'large' land holding. The average land holding was 2.73 ha.

It can be concluded that majority of growers of mogra and kagda flowers had small land holding. The findings resemble to the overall scenario of konkan agriculture, wherein predominance of small and marginal farmers is seen.

The findings of the present study are similar to the findings of vijaykumar (1997), Chorge (2009), Naik (2013) and dissimilar with the findings of Palve (2003), Thiranjangowda (2005), Walke (2005), Mayura Bedekar (2007), Waghamare (2014).

4.1.4 Area under mogra and kagda cultivation

The information regarding area under mogra and kagda cultivation is given in Table 4 and Figure 5.

Table 4. Distribution of the respondents according to their area under cultivation

Sl. No.	Area (ha)	Respondents (N=120)	
		Frequency	Percentage
1.	Low (up to 0.01)	6	5.00
2.	Medium (0.02 to 0.57)	88	73.33
3.	Large (0.58 and above)	26	21.67
Mean:0.297 ha Total		**120**	**100.00**

The data from Table 4 revealed that, majority (73.33 per cent) of the mogra and kagda growers had ‘medium’ area under cultivation, while 21.67 per cent had ‘large’ and 5.00 per cent of them had ‘low’ area under mogra and kagda. The average area under mogra and kagda was 0.297 ha.

Therefore, it could be said that the average area under mogra and kagda cultivation was quite satisfactory. Owing to typical geographical situation of Konkan region, where average size of land holding was comparatively low, the mogra and kagda growers in present study have put a substantial area under mogra and kagda, which could be considered as commercially viable proposition.

These findings are simlar with the findings of Jadhav (1999), Chorge (2009), Joshi (2012), Waghamare (2014) and dissimilar with the findings of Mayura Bedekar (2007), Shinde-desai (2011), Naik (2013).

4.1.5 Yield

The data pertaining to the yield of mogra and kagda growers are given in Table 5 and Figure 6.

Table 5. Distribution of the respondents according to their Yield

Sl. No.	Yield (q/ha)	Respondents (N=120)	
		Frequency	Percentage
1.	Low (up to 0.11)	4	3.33
2.	Medium (0.12 to 4.40)	90	75.00
3.	High (4.41 and above)	26	21.67
Mean: 2.263 q/ha	**Total**	**120**	**100.00**

It could be observed from Table 5 that, majority (75.00 per cent) of the mogra and kagda growers had ‘medium’ yield, followed by 21.67 per cent and 3.33 per cent of growers had ‘high’ and ‘low’ yield of mogra and kagda, respectively. The average yield of mogra and kagda flowers was 2.236 q/ha.

Thus, it can be said that the yield of flowers was at satisfactory level. The variation in the yield might be because of the area under cultivation and management practices followed.

The findings of the present study are similar to the findings of Maloupa *et al.* (1999), Chorge (2009), Joshi (2012), Naik (2013), Waghamare (2014).

4.1.6 Annual income

The data regarding annual income of the mogra and kagda growers are given in Table 6 and Figure 7.

Table 6. Distribution of the respondents according to their annual income

Sl. No.	Annual income (Rs.)	Respondents (N=120)	
		Frequency	Percentage
1.	Low (up to 98394/-)	22	18.33

2.	Medium (98395/- to 421069/-)	83	69.17
3.	High (421070/- and above)	15	12.50
Mean: Rs. 259732 /-	**Total**	**120**	**100.00**

The data from Table 6 revealed that, majority (69.17 per cent) of the mogra and kagda growers had 'medium' annual income; while 18.33 per cent had 'low' annual income and 12.50 per cent of them had 'high' annual income. The average annual income was Rs. 259732/-.

The findings lead to conclude that majority of the mogra and kagda growers belonged to medium income group. The average income of the mogra and kagda growers indicates their satisfactory economic status, through majority of them had medium area under mogra and kagda cultivation with medium yield.

These findings are similar with the findings of Kalbhor (1998), Jadhav (1999), Palve (2003), Mayura Bedekar (2007), Naik (2013), Waghamare (2014) and dissimilar with the findings of Jadhav (2004).

4.1.7 Farming experience

Classification of the mogra and kagda growers according to their farming experience is given in Table and Figure 8.

Table 7. Distribution of the respondents according to the their farming experience

Sl. No.	Farming experience (year)	Respondents(N=120)	
		Frequency	Percentage
1	Low (up to 12)	24	20.00
2	Medium (13 to 39)	73	60.83
3	High (40& above)	23	19.17
Mean: 26 years	**Total**	**120**	**100.00**

It is observed from Table 7 that, more than one half (60.83 per cent) of the growers had experience of mogra and kagda cultivation about '14 to 38 years', while 20.00 per cent had experience of 'up to 13 years'. Only 19.17 per cent of them had experience '39 and above'. At overall level, experience of the mogra and kagda growers was about 26 years.

It can be concluded that majority of the growers had 'medium' experience of mogra and kagda cultivation.

The findings of the present study are similar to the findings of Patil (1998), Mayura Bedekar (2007) and dissimilar with the findings of Chandregowda (1997), Vijaykumar and Narayanagowda (1997).

4.1.8 Irrigation Status

4.1.8.1 Source of Irrigation

The results regarding source of irrigation used by mogra and kagda growers are given in Table 8.

Table 8. Distribution of the respondents according to their sources of irrigation

Sl. No.	Source	Respondents (N=120)	
		Frequency	Percentage
1.	Well	45	37.50
2.	River	41	34.17
3.	Pond	10	8.33
4.	Tube well	24	20.00

The data from Table 8, indicated that among the different sources utilized by the mogra and kagda growers for irrigation, 'well' was the major source as reported by 37.50 per cent, while 34.17 per cent reported 'river' as the source of irrigation followed by 20.00 per cent reported 'tube well' and only 8.33 per cent used pond as a source of irrigation for mogra and kagda cultivation.

4.1.8.2 Water lifting devices

The results regarding water lifting devices used by mogra and kagda growers are given in Table 9.

Table 9. Distribution of the respondents according to their Water lifting devices

Sl. No.	Water lifting devices	Respondents (N=120)	
		Frequency	Percentage

1.	Electric pump	110	91.67
2.	Diesel pump	110	91.67

It was observed from table 9, that 91.67 per cent each of mogra and kagda growers had installed ‘electric pumps’ and ‘diesel pump’, as lifting devices for irrigation.

4.1.8.3 Method of Irrigation

The details about method of irrigation followed by the mogra and kagda growers are given in Table 10.

Table 10. Distribution of the respondents according to their Method of irrigation

Sl. No.	Method of Irrigation	Respondents (N=120)	
		Frequency	Percentage
1.	Surface	104	86.67
2.	Sprinkler	67	55.83
3.	Drip	99	82.50

It is revealed from Table 10 that, majority (86.67 per cent) of the growers had used the ‘surface’ method of irrigation, while 82.50 per cent of them had used the ‘drip’ method of irrigation, while 55.83 per cent of mogra and kagda growers had used the ‘sprinkler’ method for irrigation.

4.1.8.4 Overall Irrigation Status

The details about overall irrigation status of mogra and kagda growers are given in Table 11 and Figure 9.

Table 11. Distribution of the respondents according to their Overall irrigation status

Sl. No.	Irrigation Status (Score)	Respondents (N=120)	
		Frequency	Percentage
1.	Poor (up to 19.22)	20	16.67
2.	Fair (19.23 to 27.45)	93	77.50
3.	Good (27.46& above)	7	5.83
Mean: 22 Score	**Total**	**120**	**100.00**

It is revealed from Table 11 that, majority (77.50 per cent) of the growers had ‘fair’ status of irrigation; while 16.67 per cent had ‘poor’ status of irrigation and remaining 5.83 per cent of mogra and kagda growers had ‘good’ status of irrigation.

Therefore, it can be concluded that most of the growers of mogra and kagda had medium irrigation status. This might have reflected in the production and income from flowers.

This is supported by the findings of Rohinipatil (2011), Naykal (2011), Bite (2012), Mane (2014), RadhaJadhav (2015) and dissimilar with the findings of Korde (2003), Karawande (2009).

4.1.9 Sources of Information

The data regarding the sources of information utilized by the mogra and kagda growers are presented in Table 12 and Figure 10.

Table 12. Distribution of the respondents according to Sources of Information

Sl. No.	Sources of information (Score)	Respondents (N=120)	
		Frequency	Percentage
1.	Low (up to 1.17)	22	18.33
2.	Medium (1.18 to 5.46)	75	62.50
3.	High (5.47& above)	23	19.17
Mean:3.325 Score	**Total**	**120**	**100.00**

It is observed from Table 12 that more than one half (62.50 per cent) of the mogra and kagda growers had ‘medium’ sources of information, while 19.17 per cent had ‘high’ sources of information. Only 18.33 per cent of them had ‘low’ sources of information. At overall level, sources of information of the mogra and kagda growers were about 3.325.

It means that most of the mogra and kagda growers had satisfactory exposure to various information sources. This must have helped them to develop their cultivation practices and marketing of mogra and kagda.

This is supported by the findings of Bhosale (2003), Kulhal (2004), Ramesh and Santha (2005), Kadam (2006) and Meena*et al* (2012).

4.1.10 Utilization pattern

Information regarding Utilization pattern of Mogra and Kagda is shown in the following Table 13 and Figure 11.

Table 13. Distribution of the respondents according to their utilization pattern

Sl. No.	Utilization pattern (Score)	Respondents (N=120)	
		Frequency	Percentage
1.	Low (up to 0.22)	20	16.67
2.	Medium (0.23 to 3.55)	85	70.83
3.	High (3.56& above)	15	12.50
Mean:1.891 Score	**Total**	**120**	**100.00**

It could be observed from Table 13 that majority (70.83 per cent) of the mogra and kagda growers had ‘medium’ utilization pattern of mogra and kagda flowers, followed by 16.67 per cent and 12.50 per cent of growers had ‘low’ and ‘high’ utilization pattern of mogra and kagda, respectively. The average utilization pattern of mogra and kagda growers was 1.891.

4.2 Existing cultivation practices of mogra and kagda growers

Table 14. Distribution of the respondents according to the existing cultivation practices

Sl. No.	Existing Cultivation Practices		Respondents (N=120)	
			Frequency	Percentage
1	**Land Preparation**	**Average quantity (kg/plant)**		
1.1	Ploughing	-	120	100.00
1.2	Harrowing	-	120	100.00
1.3	Application of FYM	10	120	100.00
1.4	Irrigation interval of 15 days	-	109	90.83
2	**Time of Planting**			
	July-Nov		120	100.00
3	**Planting material**			
3.1	Tissue culture plant		10	8.33
3.2	Nursery		73	60.83
3.3	Rooted cuttings		37	30.84
4	**Flowers**	**Spacing**		
4.1	Mogra	1.5 m x 1.5 m	108	90.00
		1.25 m x 1.25 m	12	10.00
4.2	Kagda	1.8 m x 1.8 m	20	16.66
5	**Inter Crops**			
5.1	Jai		11	9.17
5.2	Sayali		22	18.33
5.3	Aboli		23	19.17
5.4	Tagar		26	21.67
5.5	Chilli		22	18.33
5.6	Coriander		12	10.00
6	**Varieties**			
6.1	Mogra			

Cont…

Sl. No.	Existing Cultivation Practices		Respondents (N=120)	
			Frequency	Percentage
6.1.1	Banglori		73	60.83
6.1.2	Dongari		47	39.17
6.1.3	Madanban		28	23.33
6.2	Kagda			
6.2.1	Local Variety		20	16.66
7	**Fertilizer application**	**g/plant**		
7.1	Urea	60	114	95.00
7.2	SSP	120	103	85.83
7.3	MOP	120	103	85.83
8	**Plant protection**			
8.1	**Incidence of pest**			
8.1.1	Bud worm		99	82.50
8.1.2	Blossom midge		110	91.67
8.1.3	Red spider mite		111	92.5
8.2	**Control measures of pest attack**			
8.2.1	Monocrotophos 36 WSC @ 2ml /lit		92	76.67
8.2.2	Sulfur (50% WP) @ 2g / lit		111	92.50
8.3	**Incidence of Diseases**			
8.3.1	Yellowing of leaves		120	100.00
8.3.2	Wilt		116	96.67
8.3.3	Leaf blight		120	100.00
8.4	**Control measures for Disease incidence**			
8.4.1	Bordeaux mixture 1%		68	56.67
8.4.2	Copper oxychloride @ 2.5 g / lit.		40	33.33
9	**Intercultural Operations**	**No of Times**		
9.1	Hand weeding	1 to 2	120	100.00

Cont…

Sl. No.	Existing Cultivation Practices		Respondents (N=120)	
			Frequency	Percentage
		3	32	26.67
		4	7	5.83
9.2	Use of herbicides and hand weeding		91	75.83
10	**Harvesting of Flowers**			
10.1	**Month of harvesting**			
	Mar-April		120	100.00
11	**Pruning**			
11.1	**Season**			
	Nov-jan		120	100.00
11.2	**Method**			
11.2.1	Annual		120	100.00
11.2.2	Binnial		99	82.50

The findings of Table 14 are described and interpreted below:

4.2.1 Land Preparation

It is observed from the data presented in Table 14 that all (100.00 per cent) mogra and kagda growers followed ploughing and harrowing for preparation of land and applied FYM in the field for mogra and kagda flowers cultivation. In all 90.83 per cent of them applied irrigation at interval of 15 days. The rate of application of FYM was as per recommendation i.e. 10 kg per plant.

4.2.2 Time of Planting

It is observed that all (100.00 per cent) mogra and kagda growers followed time of planting from the month of July-November.

4.2.3 Planting material

It is noticed that majority (60.83 per cent) of mogra and kagda growers used planting material from nursery, while 30.84 per cent of respondents used rooted cuttings as planting material and remaining 8.33 per cent of respondents used tissue culture plant for cultivating mogra and kagda.

4.2.4 Spacing

It is revealed that majority (90.00 per cent) of the mogra and kagda growers had followed a spacing of 1.5 m x 1.5 m in mogra and also 10.00 per cent of growers had followed a spacing of 1.25 m x 1.25 m in mogra flower. In case of kagda about 16.66 per cent of growers had followed a spacing of 1.8 m x 1.8 m.

4.2.5 Intercrops

It is revealed that majority (21.67 per cent) of the growers had taken *Tagar* as an intercrop followed by 19.17 per cent had taken *Abolia*s an intercrop; while 18.33 per cent of them had taken *Sayali*and same 18.33 per cent had takenChilli as an intercrop. Only 10.00 per cent of respondents had taken coriander as an intercrop followed by 9.17 per cent of respondents had taken *Jai* as an intercrop.

4.2.6 Varieties grown

It is revealed that majority (60.83 per cent) of the mogra and kagda growers had used the *Banglori*variety of mogra and 39.17 per cent had used *Dongari*variety of mogra and only 23.33 per cent of them had used *Madanaban*variety of mogra. In case of kagda only 16.66 per cent had usedlocal variety.

4.2.7 Fertilizer Application

The data from Table 14 indicates that majority (90.00 per cent) of the growers had applied Urea (60 g/plant); while 85.33 per cent had applied SSP (120 g/plant) and same 85.33 per cent had applied MOP (120 g/plant).

4.2.8 Plant Protection

4.2.8.1 Incidence of pest

The growers of mogra and kgda flowers stated that they had vast incidence of pest but they are not identifiable to them. However, 92.5 per cent of them identified Red Spider Mite in their field, while 91.67 per cent had identified Blossom Midge and 82.50 per cent had identified Bud Worm in their field.

4.2.8.2 Control Measures

About 92.50 per cent of the mogra and kagda growers had applied Sulfur (50% WP) @ 2g/l as pesticide for controlling Red Spider Mite. However, 76.67 per cent of them had applied Monocrotophos 36 WSC @ 2ml/lit for controlling Bud Worm and Blossom Midge.

4.2.8.3 Incidence of Diseases

It is observed that all (100.00 per cent) of the growers had identified yellowing of leaves and same 100.00 per cent had identified leaf blight diseases in their field followed by wilt (96.67 per cent). Yellowing of leaves is due to the Iron deficiency, nematode and Root rot.

4.2.8.4 Control measures

It is seen that out of 100.00 per cent of the mogra and kagda growers who had identified disease in their field, only 56.67 per cent had applied Bordeaux Mixure 1% for controlling Wilt and Leaf blight. However, 33.33 per cent of them had applied Copper Oxychloride @ 2.5 g/lit for controlling yellowing of leaves.

4.2.9 Intercultural operations

All 100.00 per cent mogra and kagda growers followed hand weeding one to two times and 26.67 per cent of them followed hand weeding of three times, while 5.83 per cent followed four times hand weeding. First weeding is done 20-25 days after planting and subsequent weeding is carried out once in 2-3 months. About 75.83 per cent of the respondents had followed use of herbicides with hand weeding as an intercultural operation.

4.2.10 Harvesting of Flowers

All 100.00 per cent of the mogra and kagda growers had harvested flowers in the month of March-April.

4.2.11 Pruning

All 100.00 per cent of the mogra and kagda growers had followed pruning to their crop in the month of November-January. In that 100.00 per

cent of them followed ‘annual’ pruning and 82.5 per cent had followed ‘binnial’ pruning.

4.3. Marketing Behaviour of mogra and kagda growers

The result pertaining to marketing behaviour of mogra and kagda growers are presented in this part.

4.3.1 Overall marketing behaviour

The information regarding overall marketing behaviour of mogra and kagda growers is presented in Table 15 and Figure 12.

Table15. Distribution of the respondents according to their overall marketing behaviour

Sl. No	Category(year)	Respondents(N=120)	
		Frequency	Percentage
1	Low (up to 23.48)	15	12.50
2	Medium (23.49 to 33.88)	52	43.33
3	High (33.89 & above)	53	44.17
Mean: 29 (score)	**Total**	**120**	**100.00**

It could be observed that from Table 15 that majority (43.33 per cent) of the mogra and kagda growers had ‘medium’ marketing behaviour, followed by 44.17 per cent and 12.50 per cent of the respondents had ‘high’ and ‘low’ marketing behaviour, respectively. The average marketing behaviour score of the respondents was 29.

4.3.2 Specific aspect wise marketing behaviour

The Marketing Behaviour was assessed against five major components regarding marketing activities. Table 16 shows the data in this regard.

Table 16. Distribution of the respondents according to the Specific aspect wise marketing behaviour

Sl. No.	Category	Respondents (N=120)	
		Frequency	Percentage
1.	**Reasons for selling at a particular period/ time**		
a.	Highly perishable	120	100.00
b.	Quality was not good	108	90.00
c.	No cold storage facility available	88	73.33
d.	Financial urgency	104	86.67
e.	Indebtedness to trader	15	12.50
2.	**Whom do you sale the produce**		
a.	Directly to the consumer	82	68.33
b.	To the wholesaler through the commission agent	112	93.33
c.	To the traders through the co-operative societies	19	15.83
d.	To the Govt. agencies such as Hostel	15	12.50
3.	**Reasons to sell to a particular agency**		
a.	The agency is very nearer one	19	15.83
b.	Better price	19	15.83
c.	I have no time to engage myself in directly to consumer	19	15.83
d.	Immediate cash payment	10	8.33
e.	Previous Agreement	3	2.50
4.	**Where do you sell the produce**		
a.	In the village	104	86.67
b.	In the nearby bazaar	87	72.50
c.	In the distant market	120	100.00
5.	**Reasons for selling at a particular place**		
a.	Market is very near to place	120	100.00
b.	The better transport facilities available in the market	88	73.33
c.	Better price are available in the market	115	95.83
d.	Better market facilities available in the market	120	100.00

The contents presented in Table 16 revealed that all (100.00)mogra and kagda growers expressed that highly perishable nature of flowers was the major reason for selling at a particular period, followed by 90.00, 86.67, 73.33 and 12.50 per cent for quality was not good, financial urgency, unavailability of cold storage facilities and indebtedness of traders, respectively.

Majority of them (93.33 per cent) expressed that they sold their flowers to wholesalers through commission agents and 68.33 per cent sold their produce directly to the consumers, followed by 15.83 and 12.50 per cent sold their produce to the traders through co-operative societies, and to the Govt. agencies such as hostel etc, respectively.

An equal number of the respondents (15.83 per cent) sold their produce because of agency is very near, got better price and no time to engage directly to consumer. However, 8.33 and 2.50 per cent of them expressed that they sold their produce to particular agency mainly because of immediate cash payment and previous agreement, respectively.

All 100.00 per cent of them sold their produce to distant market and 86.67 per cent and 72.50 per cent sold in the villages and nearly bazaar, respectively.

All the growers of mogra and kagda flowers (100.00 per cent) expressed that they sold their produce because of market is very near to them as well as better market facilities available in that market. Whereas 95.83 and 73.33 per cent of them sold their produce because of better transport facilities available in that market and better price, respectively.

4.4 Association between personal and socio economic characteristics of the mogra and kagda growers with their marketing behaviour

The association between the selected personal, socio-economic characteristics of mogra and kagda growers with their marketing behaviour was tested by computing the correlation coefficient (r).

Table17. Association between personal and socio economic characteristics of the mogra and kagda growers with their marketing behaviour

Sl. No	Characteristics	Variable code	Correlation coefficient (r)
1.	Age	X_1	0.109438^{NS}
2.	Education	X_2	0.252582**
3.	Land Holding	X_3	0.176043*
4.	Area under Mogra and Kagda	X_4	0.223658*
5.	Yield of mogra and kagda flowers	X_5	0.221747*
6.	Annual Income	X_6	0.207235*
7.	Experience	X_7	0.177316*
8.	Irrigation status	X_8	0.235684**
9.	Sources of information	X_9	0.191813*
10.	Utilization Pattern	X_{10}	-0.0985^{NS}

*: significant at 0.05 level NS: Non-significant

**: significant at 0.01 level

Among the ten variables studied, Eight variables namely education, land holding, area under mogra and kagda cultivation, yield, annual income, experience, irrigation status and sources of information were significantly associated with marketing behaviour. However, two variables namely age, utilization pattern were non-significantly associated with marketing behaviour.

The relationship shown in Table 17 are explained and discussed hereafter.

4.4.1 Age with marketing behaviour

It is observed from Table 17 that, the relation between age of the mogra and kagda growers (X_1) and their marketing behaviour (Y) was positive but non-significant indicating thereby that, there was no statistical significant relationship between marketing behaviour and age of mogra and kagda growers.

The mogra and kagda growers from all the age groups might have exhibited more or less same marketing behaviour and hence, a non-

significant relationship might have been observed between these two variables.

The findings are dissimilar with the findings of Nirban (2004), Lapbim*et al.* (2009), Chorge (2009) and Dhirajkumarsingh*et al.* (2010).

4.4.2 Education with marketing behaviour

Relation between education (X_2) of growers of mogra and kagda flowers and their marketing behaviour (Y) was positive and highly significant.

This indicated that the increase in the education status, there was increase in marketing behaviour. Education increases the knowledge horizons of an individual. The educated person can think logically than the uneducated person. Higher the education more likely they would be motivated for upward mobilities in the marketing behaviour.

The findings are similar with the findings of Lapbim*et al.* (2009), Dhirajkumarsingh*et al.* (2010).

4.4.3 Land Holding with marketing behaviour

The land holding (X_3) and marketing behaviour (Y) of the growers of mogra and kagda flowers were positively and significantly related with each other at 5.00 per cent probability. It can be inferred from this finding that the total land owned by the respondents had significantly influenced their marketing behaviour in respect of their production technology. Bigger the land holding, greater was the marketing behaviour and *vice-versa*.

The findings of the study are similar with the findings of Nirban (2004), Dhirajkumarsingh*et al.* (2010).

4.4.4 Area under mogra and kagda cultivation with marketing behaviour

It is revealed from Table 17 that the areas under mogra and kagda flowers (X_4) and marketing behaviour (Y) of the growers were positively and significantly related with each other at 5.00 per cent level of probability. The finding shows that as the area under mogra and kagda flowers increased, the marketing behaviour of the mogra and kagda growers also improved remarkably.

More area under cultivation might have helped the mogra and kagda growers to go for commercial cultivation. As they might have taken this enterprise on commercial scale, they might have taken due care for marketing the mogra and kagda flowers. This might have reflected in their marketing behaviour.

4.4.5 Yield of mogra and kagda flowers with marketing behaviour

The association between yield of mogra and kagda flowers (X_5) and marketing behaviour (Y) was statistically significant. It means that marketing behaviour was dependent upon yield of mogra and kagda flowers.

Efficient crop management increase the yield, this might have motivated mogra and kagda growers for better marketing behaviour.

4.4.6 Annual Income with marketing behaviour

Annual income (X_6) of mogra and kagda growers was positively and significantly related with their marketing behaviour (Y) at 0.05 level. The findings lead to conclude that annual income was a crucial factor in determining the marketing behaviour of the mogra and kagda growers.

Annual income of an individual is an indicator of his economic status. An individual with higher economic status has better access to different sources of information. He has good relations with the officials and non-officials in different organizations. This ultimately widens his vision and horizons of knowledge. Resultantly, he can take rational decisions on the issues concerning him and his profession. This is true in the case of decisions regarding marketing of flowers. Besides this, a person with higher income can afford to avail the improved practices for harvesting, grading, packaging, storing and transportation etc. of these flowers. Possibly, as an outcome of this, he exhibits better marketing behaviour than his counterpart with lower annual income.

The findings of the study are similar with the findings of Nirban (2004), Dhirajkumarsingh*et al.* (2010).

4.4.7 Experience with marketing behaviour

It is seen that experience (X_7) of mogra and kagda growers had significant relationship with the marketing behaviour (Y). It seems that the mogra and kagda growers those had more experience in cultivation of mogra and kagda flowers performed well on different parameters of marketing behaviour those than of with low level of experience.

4.4.8 Irrigation Status with marketing behaviour

It was indicated from Table 17 that, the association between irrigation status of the respondents and their marketing behaviour was 'highly significant'.

In 'fair' category of irrigations status, 77.50 per cent of the respondents had 'best' marketing behaviour, while in 'poor' category of irrigation status 16.67 per cent of the respondents had 'better' marketing behaviour and in 'good' category of irrigation status 5.83 per cent of mogra and kagda growers had 'good' marketing behaviour.

This indicated that irrigation status of the respondents was one of the significant factor in marketing behaviour.

4.4.9 Sources of information with marketing behaviour

It is observed from Table 17 that the association between sources of informationof the mogra and kagda growers (X_9) and marketing behaviour (Y) was positive and significant.

It could be concluded from the observations that the respondents using greater number of sources of information with higher frequencies possessed better knowledge about mogra and kagda cultivation and marketing.

4.4.10 Utilization pattern with maketing behaviour

It is observed from Table 17 that, the relation between utilization pattern of the mogra and kagda growers (X_{10}) and their marketing behaviour (Y) was negatively non-significant indicating thereby that, there was no statistical significant relationship between marketing behaviour and utilization pattern of mogra and kagda growers.

The mogra and kagda growers not only sale their produce to market but also utilized it for home, neighbours, relatives etc. This indicates that the respondents from all these utilization places more or less equally distributed resulting of non-significant relationship.

4.5 Constraints faced by mogra and kagda growers in marketing of flowers

An enquiry was made with the mogra and kagda growers about the constraints experienced by them in cultivation and marketing of mogra and kagda flowers. The findings in this regard are presented in this part. The constraints reported by them are shown in Table 18.

Table 18. Constraints faced by mogra and kagda growers in marketing of flowers

Sl. No	Constraints	Respondents (N=120)	
		Frequency	Percentage
1.	Shortage of labour in season	11	97.50
2.	Low quality flowers due to pest and disease attack	116	96.16
3.	Non availability of Packaging material and adequate cold storage facilities	115	95.33
4.	Markets are far away	111	92.50
5.	Lack of scientific knowledge and training	109	90.83
6.	Fluctuation in market price	107	89.16
7.	Non availability of grading facilities and good varieties	102	85.00
8.	Seasonal demand	99	82.50
9.	High cost of inputs	88	73.33
10.	Lack of co-operative marketing institutions	85	70.83
11.	Lack of regular consumers	82	68.33
12.	Lack of market information	80	66.67
13.	Losses during transport	63	52.50
14.	Quick deterioration in quality	55	45.83
15.	High interest rate	50	41.67

The contents of Table 18 indicated majority (97.50 per cent) had stated that ‘Shortage of labour’ was a major problem in harvesting of flowers, whereas 96.16 per cent of them had faced the constraint ‘Low quality flowers due to pest and disease attack’. In case of packaging, 95.33 per cent of respondents had faced the constraints of ‘Non availability of Packaging material’, followed by ‘Markets are far away’ (92.50 per cent). Majority(90.83 per cent) had faced constraints of ‘Lack of scientific knowledge and training’, while 89.16 per cent of them experienced opined ‘Fluctuation in market price’ 85.00 per cent respondents had reported ‘Non availability of grading facilities and good varieties’. ‘Seasonal demand’, ‘High cost of inputs’ and ‘Lack of co-operative marketing institutions’ were the constraints faced by 82.50 per cent, 73.33 per cent and 70.83 per cent growers, respectively. ‘Lack of regular consumers’ and ‘Lack of market information’ were the major problems reported by 68.33 per cent and 66.67 per cent growers, whereas 52.50 per cent, 45.83 per cent of the respondents had faced the constraints ‘Losses during transport’ and ‘Quick deterioration in quality’. About 41.67 per cent of the growers reported the problem of ‘High interest rate’.

4.6 Suggestions of mogra and kagda growers for overcoming the constraints

The suggestions ofmogra and kagda growers are presented in Table 19.

Table 19. Suggestions of mogra and kagda growers for overcoming the constraints

Sl. No.	Suggestions	Frequency	Percentage
1.	Market information should be made available in nearby places	115	95.83
2.	Improved storage, handling and processing facilities should be available to reduce marketing loss	106	88.33
3.	Display of prices at each market place	106	88.33
4.	Co-operative marketing societies should be established	92	76.67
5.	Minimum labour charges should be fixed	92	76.67

Cont…

Sl. No.	Suggestions	Frequency	Percentage
6.	Training should be given on scientific knowledge and modern technology for flower cultivation	87	72.50
7.	New varieties should be introduce	82	68.33
8.	Providing subsidies for fertilizers, packaging materials etc	65	54.17
9.	Institutional credit should be made available on easy terms and at a lower rate of interest	56	46.67
10.	Exclusive market place	56	46.67

It is revealed from Table 19, that majority (95.83 per cent) of the mogra and kagda growers suggested 'Market information should be made available in nearby places'. 'Improved storage, handling and processing facilities should be available to reduce marketing loss' and 'Display of prices at each market place' were the suggestions made by 88.33 per cent growers, while 'Co-operative marketing societies should be established' and 'Minimum labour charges should be fixed' were the suggestions by 76.67 per cent each of the growers. 'Training should be given on scientific knowledge and modern technology for flower cultivation', 'New varieties should be introduce' and 'Providing subsidies for fertilizers, packaging materials' were suggestions made by 72.50 per cent, 68.33 per cent and 54.17 per cent, respectively. These suggestions were followed by the suggestions namely 'Institutional credit should be made available on easy terms and at a lower rate of interest' and 'Exclusive market place' at 46.67 per cent each.

CHAPTER V

SUMMARY

Jasmine is a highly valued ornamental group for home gardens and commercial cultivation. Flowers and buds are used for making garlands, bouquets and for religious offerings, while *veni* is used as hair adornment. In Palghar district of konkan region the important flowers are grown as like Kagda, Jasmine, Rose, Chrysanthemum, Aster, Gladiolus, Tuberose and marigold due to their demand on one side and other side is favourable climate to grow them. *Jasminumsambac*(mogra)*, Jasminummultiflorum* (kagda) are the major flowers which are cultivated by large no of flower growers.Mogra is one of the oldest fragrant flowers cultivated by the farmers of Palghar district Maharashtra. Favourable climatic conditions, availability of transport and good demand for flowers provide an ideal situation for flower cultivation due to nearness of Mumbai metropolitan region. It plays important role in the economy of flower growers from palghar district. However, the earnings from the mogra and kagda flowers depend upon its efficient marketing. So, the present study entitled, 'Marketing behaviour of the mogra and kagda growers in Palghar district', was conducted with the following specific objectives.

5.1 Personal and socio-economic characteristics of mogra and kagda growers

5.2 Existing cultivation practices of mogra and kagda growers

5.3 Marketing behaviour of mogra and kagda growers

5.4 Association between personal and socio-economic characteristics of mogra and kagda growers and their marketing behavior

5.5 Constraints faced by the mogra and kagda growers in marketing of flowers

5.6 Suggestions of mogra and kagda growers for overcoming the constraints

The study was conducted in Palghar district from Konkan region of Maharashtra state using the ex-post facto research design. Data were collected by personally interviewing 120 mogra and kagda growers with the help of specially designed interview schedule. Ten personal, socio-economic characteristics of the mogra and kagda growers were selected as

independent variables; those were measured with the help of available instruments. Statistical tools such as frequency, percentage, mean, standard deviation were used for grouping the data. The relation between personal and socio-economic characteristics of mogra and kagda growers and their marketing behaviour was calculated by Pearson's correlation coefficient (r). The findings of the study are summarized hereunder.

5.1 Personal, socio-economic characteristics of mogra and kagda growers.

It was observed that majority (69.17 per cent) of the mogra and kagda growers belonged to age group of '44 to 70 years'. The average age was 57 years. Maximum number (30.00 per cent) of the respondents had completely 'secondary' education (8^{th} to 10^{th}). The average educational level was 9^{th} standard. Maximum number (43.33 per cent) of them had 'small' land holding. The average land holding was 2.73 ha. Majority (73.33 per cent) of them had 'medium' area under mogra and kagda. The average area was 0.297 ha. Majority (75.00 per cent) of them had 'medium' yield of mogra and kagda. The average yield was 2.236 q/ha. Majority (69.17 per cent) of the respondents had 'medium' annual income. The average annual income was Rs.259732/-. More than one half (60.83 per cent) of the respondents had experience of mogra and kagda cultivation about '14 to 38 years'. At overall level, experience was about 26 years. With regard to irrigation status, majority (77.50 per cent) of them had 'fair' status of irrigation. It was indicated that the maximum number of the respondents (62.50 per cent) had 'medium' sources of information. Majority (70.83 per cent) of them had 'medium' utilization pattern.

5.2 Existing cultivation practices of mogra and kagda growers

It was observed that all (100.00 per cent) mogra and kagda growers followed ploughing and harrowing for preparation of land and applied FYM to the field. All (100.00 per cent) respondents followed time of planting in the month of July-November. Majority (60.83 per cent) of them used planting material from nursery. About 90.00 per cent of the mogra and kagda growers had followed a spacing of 1.5 m x 1.5 m in mogra and 16.67 per cent had

followed a spacing of 1.8 m x 1.8 m in kagda. Majority (21.67 per cent) of them had taken *Tagar* as an intercrop. About 60.83 per cent had used the *Banglori*variety of mogra and 16.67 per cent of them had usedlocal variety of kagda. Majority (90.00 per cent) of the respondents had applied Urea (60 g/plant). About 92.5 per cent had identified Red Spider Mite in their field and 92.50 per cent of them had applied Sulfur (50% WP) @ 2g/l as pesticide for controlling Red Spider Mite. It was observed that all (100.00 per cent) of the respondents had identified yellowing of leaves and same 100.00 per cent had identified leaf blight diseases in their field. About 56.67 per cent of respondents had applied Bordeaux Mixture 1% for controlling Wilt and Leaf blight. All (100.00 per cent) respondents followed hand weeding one to two times and all 100.00 per cent of the respondents had harvested mogra and kagda flowers in the month of March-April and also all 100.00 per cent of the respondents had followed pruning to their crop in the month of November-January.

5.3 Marketing behaviour of the mogra and kagda growers

It was observed that majority (43.33 per cent) of the mogra and kagda growers had ‘medium’ marketing behaviour, followed by 44.17 per cent and 12.50 per cent of the respondents had ‘high’ and ‘low’ marketing behaviour, respectively. The average marketing behaviour score of the respondents was 29.

All (100.00) of the respondents expressed that highly perishable nature of flowers was the major reason for selling mogra and kagda flowers at a particular period. Majority (93.33 per cent) expressed that they sold their mogra and kagda flowers to wholesalers through commission agents. About 15.83 per cent expressed that they sold their produce to the particular agency since the agency is very nearer one and mainly because of better price. All 100.00 per cent sold their produce to distant market because of market is very near to them, as well as better market facilities available in that market.

5.4 Association between the personal and socio-economic characteristics of the mogra and kagda growers with their marketing behaviour.

It was indicated that in case of mogra and kagda growers, the personal characteristics such as age had positive but non-significant relationship with the marketing behaviour, while education, Irrigation status, land holding, area under cultivation, yield of mogra and kagda, annual income, farming experience and sources of information had significant relationship with marketing behaviour and only utilization pattern of mogra and kagda had negatively non-significant relationship with the marketing behaviour.

5.5 Constraints faced by the mogra and kagda growers in marketing of mogra and kagda

Majority of the growers of mogra and kagda flowers (97.50 per cent) had stated that 'Shortage of labour' was a major problem in harvesting of flowers, whereas 96.16 per cent of them had faced the constraint 'Low quality flowers due to pest and disease attack'. In case of packaging, 95.33 per cent of respondents had faced the constraints of 'Non availability of Packaging material', followed by 'Markets are far away' (92.50 per cent). Majority (90.83) per cent had faced constraints of 'Lack of scientific knowledge and training', while 89.16 per cent of them experienced problem of 'Fluctuation in market price' 85.00 per cent respondents had reported 'Non availability of grading facilities and good varieties' as a constraint. 'Seasonal demand', 'High cost of inputs' and 'Lack of co-operative marketing institutions' were the constraints faced by 82.50 per cent, 73.33 per cent and 70.83 per cent growers, respectively. These are the major constraints reported by the respondents.

5.6 Suggestions of mogra and kagda growers for overcoming the constraints

It is observed that majority (95.83 per cent) of the mogra and kagda growers suggested 'Market information should be made available in nearby places'. 'Improved storage, handling and processing facilities should be available to reduce marketing loss' and 'Display of prices at each market place' were the suggestions made by 88.33 per cent growers, while 'Co-

operative marketing societies should be established' and 'Minimum labour charges should be fixed' were the suggestions by 76.67 per cent each of the growers. 'Training should be given on scientific knowledge and modern technology for flower cultivation' and 'New varieties should be introduce' were suggested by 72.50 per cent and 68.33 per cent respectively.

CHAPTER VI

IMPLICATIONS

New technology in agriculture has widened the horizons of productivity levels of various crops. Now days, there is a shift towards commercialization of agriculture and farmers are giving importance to commercial crops rather than cereals and food crops. Cultivation of mogra and kagda flowers is one such field, which yields more income to the flower growers. Mogra and Kagda are important flowers grown in Palghar district of Maharashtra. The problems of flower growers are numerous. However, lack of market infrastructure, unavailability of timely market information and price fluctuation seem to be the major bottleneck in the sustained development of flower production and its marketing. The flowers marketing problems in rural areas have not been studied in the systematic way even though number of studies has been conducted in the country. Presently, development of marketing infrastructure to solve the problems of mogra and kagda flower growers in the area is the primary concern of the government. Hence, intensified efforts are needed to identify the specific problems related to mogra and kagda flowers marketing. Further, a wide variety of flowers are grown in Palghar district of Maharashtra. This necessitated a large number of intermediaries. This inturn has resulted in a complex marketing system for flowers causing problems in order to stabilize the income and to ensure remunerative prices to the growers. There is a need for improving marketing system for mogra and kagda flowers. The present study was carried out in Palghar district of Konkan region to know marketing behaviour of mogra and kagda growers.

1. The study brought forward the personal and socio-economic characteristics of mogra and kagda growers. It was observed that education and sources of information level of the respondents was satisfactory considering this, it is suggested that extension organization should strive it improve these traits, which would help the mogra and kagda growers in increasing their knowledge about improved mogra and kagda production in general and marketing behaviour in particular.
2. It was observed that majority of mogra and kagda growers had better area under mogra and kagda cultivation with experience resulted into

maximum annual income from raising mogra and kagda flowers. It means there is good scope to promote floriculture based farming system in the area of study. The agricultural university should develop and recommendsuitable farming system considering the resources base at different locations.

3. The study indicated that there is gap between recommended and existing mogra and kagda cultivation practices by the growers. The extension agencies will have to make sincere efforts for adoption of recommended practices by the cultivars.
4. The results pertaining to marketing behaviour of mogra and kagda growers was at medium level. It calls for intensification of educational efforts and policy support to mogra and kagda growers by the field extension workers of developing departments, NGOs and private organization to make them more enterprising.
5. The study has established that some personal and socioeconomic characters do influence the marketing behaviour ofmogra and kagda growers. Wherever possible these correlated characters should be manipulated by the extension workers to improve upon the marketing behaviour of mogra and kagda growers.
6. It was also observed that low quality of flowers due to pest and disease attack and non-availability of adequate cold storage facilities were the major constraints reported by the respondents. So, the Agriculture Department and Universities must provide plant protection training and concern department can take efforts for provision of adequate cold storage centre at nearby places.
7. Results of the study showed that the mogra and kagda growers were facing numerousproblems in marketing of their produce. Hence, the concerned organizations shouldtake care in displaying market information and processingcentres at nearby places to avoid distress selling of flowers.
8. The present study was confined to limited area and sample. So, the conclusion will be applicable to area of the study only. For generalizing the conclusions, it is necessary to conduct similar studies in other districts of the regions by drawing larger sample.